(TRANS) PLACES TO PLAY

Mapping Cultures of Reinvention in the Age of Digitally Mediated Translocal Relationships

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translocality, transplaces, polymedia, virtual placemaking, practice-based research, design research, human–computer interaction, playful codesign

Abstract

This thesis maps the diverse entanglements of place and technology in translocal relationships and reimagines how we can design technologies to support placemaking in such relational contexts. As transnational flows of people and information become more commonplace, more interpersonal relationships are being maintained over a distance through the internet, telephones, and postal services. In these translocal contexts, the sense of shared place and living must often be renegotiated within structuring technological platforms that are inhospitable to the messy, accumulative, and affective configurability needed for relationship-anchoring places to form.

Drawing on my experiences of staying in touch with family overseas, I undertake a progression of five playful studies with adults who maintain relationships through networked technologies. These studies intersect sociological and playful co-creation methods to surface the everyday practice knowledges of community members, developing a ground-level "view from everywhere" of how people make places together when apart.

From the findings, I posit the new idea of *transplace* to characterise the plurality of relational places being cultivated at a distance, and the playful *cultures of vernacular reinvention* through which users reappropriate "placeless" technologies in seeking a sense of place. The findings reassert that designing for placemaking must involve reflexive dialogue with users and attention to their diverse reinvention tactics, rather than imposing infrastructural solutions from the top down.

Presented as five publications and an interactive work threaded together by the exegesis, this thesis project produces both empirical and methodological outputs: dynamic feral mappings of transplaces, and alternative interaction design practices that disrupt design thinking's embedded solutionism, attending to the vernacular reinvention and transformative play that scaffold transplace-making.

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List of Publications Presented in This Thesis

1 Low, A., Turner, J., & Foth, M. (2023). Pla(y)cemaking with Care: Locative Mobile Games as Agents of Place Cultivation. *Proceedings of the 25th International Academic Mindtrek Conference*, 135–146. https://doi.org/10.1145/3569219.3569311

Presented in Chapter 4

2 Low, A., Turner, J., & Foth, M. (2023). Worlds Apart, Together: Discovering Players' Placemaking Priorities in Cooperative Terraforming Games. In *Proceedings of the 35th Australian Computer-Human Interaction Conference* (pp. 148–158). Association for Computing Machinery (ACM). https://doi.org/10.1145/3638380.3638417

Presented in Chapter 5

3 Low, A., Turner, J. & Foth, M. (2025). *Cultures of Improvisation: Exploring the Vernacular Reinvention of Networked Technologies in Translocal Relationships* [Unpublished manuscript].

Presented in Chapter 6

4 Low, A., Foth, M. & Turner, J. (2025). *Unfinished by Design: Inviting Vernacular Improvisation through Provotyping Practices* [Unpublished manuscript].

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5 Low, A., Foth, M. & Turner, J. (2025). *Mapping Transplaces: Placemaking through Storying in Technology-Mediated Transnational Relationships* [Unpublished manuscript].

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List of Abbreviations

AR	augmented reality
EBE	elements-behaviour-experiences
GPS	global positioning system
HCI	human–computer interaction
HTML	hypertext markup language
ICT/s	information and communication technology/ies
OSSN	open-source social network
QUT	Queensland University of Technology
VR	virtual reality

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Foremost, I acknowledge the Turrbal and Yugara as the First Nations owners of the lands where Brisbane now resides. I pay my respects to their Elders, lores, customs and creation spirits, and I recognise that these lands have always been places of teaching, research and learning. I acknowledge Aboriginal and Torres Strait Islander people as the first researchers of Place, to whose work this thesis' inquiry owes a great debt.

This thesis came from a place of grief—the grief of no longer knowing where I am, or where I want to be. It has asked me to interrogate my identity, my notion of belonging, and what it means to be *from somewhere*. Though it has not answered any of my questions, producing this thesis has shown me others who share in this same, untold grief, and pulled together the scattered wisdoms of our lives into a readable constellation. For that and many other reasons, everyone and everything who has moulded me in some way shares the credit for the existence of this work.

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Thank you for making me who I am, and this thesis what it is.

Chapter 1: Introduction—You Are Here

Over the past four years, my principal supervisor Jane Turner has often asked me to find my thesis' red thread. The metaphor is both apt and amusing, coming from my cultural understanding of red thread as a symbol of marriage. Indeed, this thesis is a wedding of many disciplinary domains, and one of its connective threads is its central research curiosity: how people who cannot meet face-to-face make places of shared living through networked technologies, and how design work can be bettered around such practices of mediated placemaking.

The omnipresent imagery of strings and weaving constitutes another throughline. From the webs and networks of human–computer interaction (HCI) studies to the "net[s] of human concern" (Tuan, 1979, p. 416) characterising places in geographical research, these entangled metaphors are enlisted to describe the messy, complex, intersubjective phenomena that produce places (physical, digital, hybrid, and more). Following Haraway (2016), entangled thinking challenges the compartmentalisation and "disciplining" of research studies, a crucial turn if we are to meet places and knowledges where they are: "relentlessly relational, sympoietic, and consequential" (Haraway, 2016, p. 49).

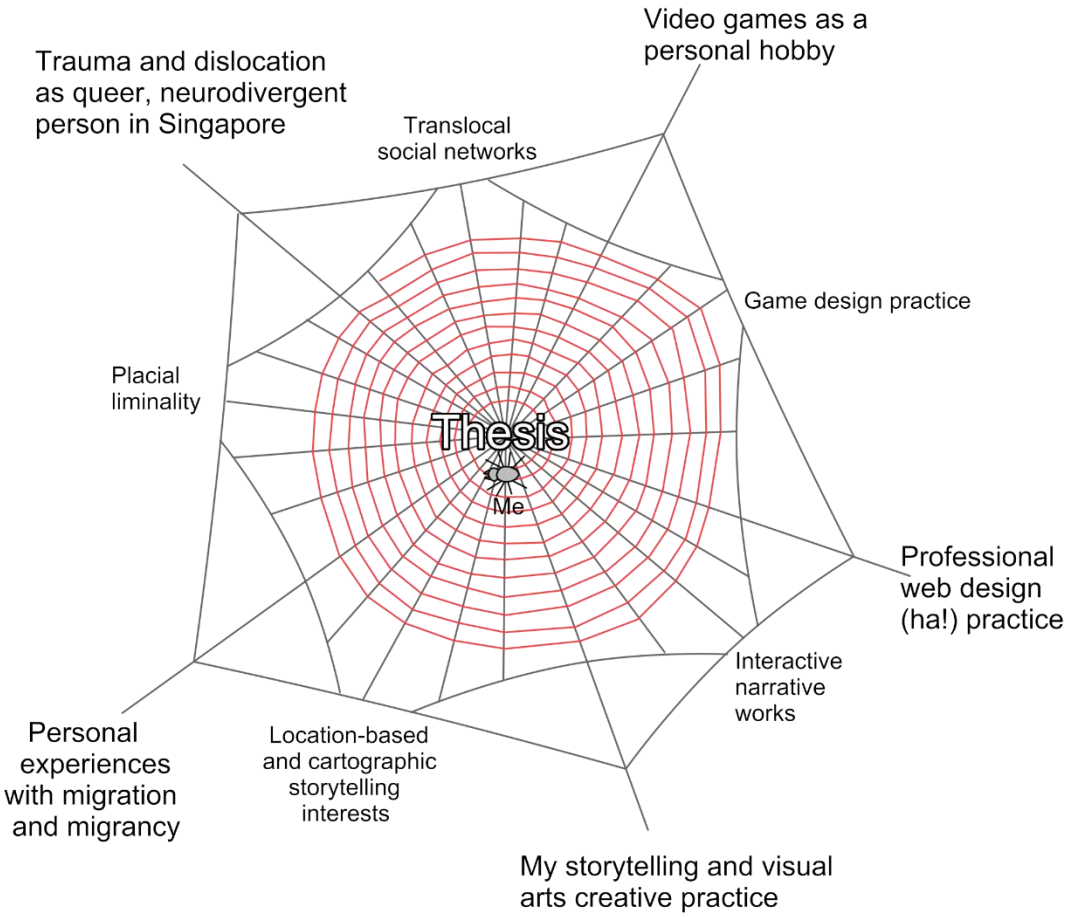
All that said, this thesis is about how people living apart still find ways to live together, and the crucial role of networked technologies in mediating these places of shared living. It is primarily an interaction design research undertaking, seeking to address the opportunity space of designing for networked relationality in translocal contexts. Design research theses are famously nonlinear: rather than inductively devising arguments from pre-established knowledge, they abductively (Timmermans & Tavory, 2012) construct novel knowledge that is grounded, at every stage, by immersion in both professional and community practices (Candy, 2006; W. Gaver et al., 2022).

As such, this thesis does not have a single linear thread from start to finish but draws together a dense web of interconnections (Figure 1.1), which intertwine around

a few key theories and concepts. Untangling the web of ideas spun over the course of research and all the ways that the strands intersect, the thesis begins with this introductory chapter, addressing each anchoring thematic thread to lay the context for the rest of the thesis.

Figure 1.1

A Map of Relevant Themes for This Thesis.



Note. The "red thread" of this thesis intersects with many threads in a web of complex interrelations.

Importantly, as a work with a practice-based methodology that takes a grounded view of knowledge, this thesis is constructed via my positionality with respect to the research topic (S. Bell, 2009)—particularly the fact that I am a migrant who has maintained relationships with family, romantic partners and friends over the internet for more than a decade. The immersion of this research in context and subjectivity, which would be seen as a problem in positivist schools of thought, is an asset when

constructing a holistic, decentralised understanding of a phenomenon as multifarious and contextual as translocal relationality (Candy, 2006).

As such, this Introduction sets out to contextualise the project in my personal experiences and creative practice, alongside the important works from the related academic *and* creative fields. Section 1.1 establishes the temporal context from which this project emerged. Then Sections 1.2 through 1.6 lay out the context of my place-based creative practice and the pertinent biographical anecdotes that have shaped my work. These sections consider place through several different lenses: Liminality, Memories, Displacement, and Technology. After contemplating how design has been deployed to address these themes in both personal and disciplinary contexts (Section 1.7), I then outline the research direction that this thesis charts (Section 1.8), the significance of this research (Section 1.10) and present a map of the chapters of this thesis document (Section 1.11).

1.1 TRANSLOCAL TIMES

Like a spider weaving a web, let me begin from the thesis' first anchor point. Shortly before embarking on my doctoral studies, I migrated to Australia during the COVID-19 pandemic. From 2020 through 2022, governments across the world closed their borders and confined citizens to their homes in sweeping lockdowns, in an effort to curb the virus' spread. By mid-2022, more than 564 million cases of COVID-19 had been reported in 227 states and territories. Alongside the highly visible health impacts, the large-scale isolation and separation of entire communities also taken a vast psychological toll (Acharya et al., 2021; Serafini et al., 2021; B. Smith & Lim, 2020). Migrants and travellers alike were stranded away from their home countries, including more than 45,000 Australians unable to return from abroad (ANU College of Health & Medicine, 2021).

But the dislocating impacts of the pandemic were also an opportunity to focus on how we connect without face-to-face co-location. Even while the pandemic disrupted the global air-travel network, the World Wide Web became a hub of celebrations, reunions, and funerals. With it came a wave of new interest and research into how humans re-establish place remotely in the midst of isolation (G. Bell, 2021; Boon, 2020; Clarke, 2020), and the inexorable part that computing technologies and virtual realities play in these efforts (Clarke, 2020; Foth et al., 2021; Kerdvibulvech, 2022; Rzeszewski & Evans, 2020). Concurrently, the pandemic increased awareness of the globalisation enmeshing our lives, as signified by the *Ever Given* incident, when

a large container vessel ran aground in the Suez Canal and brought a large portion of global trade to a halt (Schiffling & Valantasis Kanellos, 2021).

As such, this research project lives amid an upswell of interest in computer-mediated connection, in a cultural milieu that has been sensitised to the global phenomena entangling our localities, most recently with the looming economic uncertainty triggered by the United States' sweeping import tariffs (Partington, 2025).

I was among the individuals prevented from visiting home for two years by of the pandemic. These conditions acclimated me to a life where my family and my now-spouse were on opposite sides of the ocean. I have spent the last four years learning to live amid such geographical ambiguities, and to remediate my relational practices to new, liminal places that lie between territories, reliant on a growing range of information and communication technologies (ICTs). These practices involve both my family and my partner, but also a sprawling social network that already entangled multiple continents before I moved. Even now, I do not call myself a "permanent" migrant: there was no moment of rupture, as Diminescu (2008) says, but an ongoing continuum of renegotiations of self to bridge many localities at once, sometimes leaning more in one (geographical) direction than others—that is to say, always becoming.

The main motivational thrust of this thesis is thus a deep personal concern about places and sense-of-place that transcend conventional geographical localities. As someone who navigates webs of relationships along numerous mediating networks—the internet, postal services, and air travel—I am just one member of a distributed and oftentimes invisible community for whom such networks are the intangible sites of home, dwelling, and community.

The term **translocality**, which addresses flows of people, goods, and information that enmesh localities with globality (Appadurai, 1995), is central to these kinds of relationships. It is not only the public large-scale phenomena of economics and culture that can be translocal, but also—as this thesis contends—the private realms of interpersonal bonds. In my relationship with my family, we transmit ideas, exchange cultural practices, and sensorily experience each other's localities via the internet and snail mail. Our relationships and bodies become everyday microcosms of translocal flows, via the very same material networks through which locality and globality entangle on a grander scale.

These translocal relationships are founded upon interdependent collections of practices that together scaffold a sense of inhabiting a *somewhere* (Janning et al., 2018; Madianou, 2016). Like local physical neighbourhoods, technology-mediated relationships do not begin on *terra nullius*, but in spaces designed and structured by (property/software) developers. Where such top-down design practices meet the dwellers' everyday needs to anchor identity, closeness, and connection in space, they fashion a range of **placemaking** tactics. Whether the mediating space is physical or digital, these tactics are sensitive to their environments, exploratory, and transformative. They endeavour to cultivate meaning and anchor sentimental connections in *spaces*—and thereby create *places*.

Here, I refer to the dichotomy between space and place outlined by Tuan (1979), where "space" refers to the undifferentiated three-dimensional medium which we occupy and traverse, while "place" refers to nexuses of human attachments that enliven space with meaning. This view of space and place is central to the thesis, and the next section outlines it in much greater detail.

1.2 PLACE, SPACE, AND DISLOCATION

"Home is where the heart is." This apocryphal saying, often attributed to Pliny the Elder, complicates—in very few words—the idea of "home" as a discrete locality. In this saying, home is a place with no static, physical definition: it is identified by the way one relates to a locale and the meaning that one invests in a physical locality. The adage has endured in common parlance and became known to me, as a child in Singapore, through English-language television.

Humanistic approaches to geography and architecture have long striven to outline such experiential definitions for place. In contrast with space, the abstract three-dimensional medium in which we move and occupy positions, *place* is the human experience which organises space into sites of meaning (Norberg-Schulz, 1979; Seamon, 1993; Tuan, 1979). Place is how we make spaces meaningful to us: traversal and dwelling habits, and placial (place-related) associative memories. It signifies the physical anchors of one's evolving relationships with the isotropic and undifferentiated medium of space (Tuan, 1979). These conceptions tend to define place in terms of gradual, prolonged processes of habitation and dwelling in a physical locale, centring stable physical delineations of place.

Early migration studies spearheaded an understanding of human identity that transcended static locales as webs of interrelations between multiple distant localities. Even then, migrancy was previously defined in ways that bowed to that static understanding of place and belonging: as a permanent relocation of one's life from the Global South to a host country in Europe or North America (Lee, 1966). The term translocality was coined to describe this paradigm of thinking about place and identity: one that does not dichotomise between *home* and *away*, and instead considers geographically liminal communities—such as migrants and diasporas—as embodying interrelations and flows across multiple localities within their own lives (Bunchuay-Peth, 2014; Greiner & Sakdapolrak, 2013).

Research has long demonstrated the dislocating effects of being uprooted from one's social networks and cultural traditions, and resettling in a new locality rife with dehumanising xenophobia (Aziz, 2021; Diminescu, 2008; Gonsalves, Foth, Caldwell, et al., 2021; Sangaramoorthy & Carney, 2021). But scholars like Diminescu (2008) and Brah (1997) advocate a view of translocal life that centres multilocal bonds over dislocation and rupture—the tight-knit resilience of community connections in the face of separation, uprooting, and prohibitive distance. Indeed, even amid these conditions, studies have found that people cultivate a sense of shared place in their close interpersonal relationships, through creative recombination of networked technologies like social media and telephones (Alinejad, 2019; Madianou, 2016; Marino, 2015).

As the flow of people, information and goods across geographical borders grows in volume, and in the aftermath of a global pandemic that revealed how quickly our sense of place can be unsettled (G. Bell, 2021), it becomes increasingly pertinent to study how people living in translocal conditions, both migrants and otherwise, find ways to make shared places across distance. I assert the especial importance of thinking of translocal relationships *in terms of place*. In translocal relationship contexts, a sense of togetherness cannot be taken for granted, and places of dwelling are always being negotiated and constructed relationally through mediating technologies.

Because they dispense with the foundational assumption that orientation, distance, and extent are mapped in three dimensions, such mediated, socially constructed places are ontologically different from physical places, asking for different methods of inquiry. This is one of the key methodological curiosities of this thesis project.

However, to research technology-mediated place does not require us to reinvent place. This thesis looks to Yi-Fu Tuan's **fields of care** as an anchoring idea that can connect prior theories on place with these emerging digital, mental, and imagined places. Speaking from a phenomenological geographer's perspective, Tuan conceives of places as a web of intersubjective concerns, sentimental attachments, and habitual practices threaded slowly and carefully into the spatial medium. Importantly, place, when considered within this view, "does not require emotional anchoring in a particular locality for its strength" (Tuan, 1979, p. 417). As he rather poetically states, "[h]ome is wherever we happen to be, as all carefree young lovers know." Such places are always becoming via navigation and intersubjective negotiation, like Ingold's meshworks (2013) which weave our many physical, virtual, and imagined layers together in interpretatively rich ways. These places form a pluriverse—many ways of being in the world that may contradict each other, coming together in a heterogenous and experientially entangled fabric (Escobar, 2018).

Within that understanding, it is important to consider the impacts on place when the technologies that translocal communicators use to connect are designed around corporate interests of standardisation (Wong, 2021) and optimisation (Avram et al., 2019). Returning to the neighbourhood allegory, these infrastructural technologies function much like the standardised house designs found in American suburbia (Sabie et al., 2020)—experientially de-textured and antagonistic to the cultivation of networks of memory, identity, sentimental attachment, and ultimately a sense of place.

When space is designed against place, those who maintain relationships within these spaces must often reinvent the imposed infrastructure for unintended uses that meet their needs, in what has been likened to the "frugal innovation" tactics of jugaad (Rai, 2015; Ray & Gupta, 2024). These are playful tactics, showing irreverence to the "laws" that structure reality, whereby users create "desire lines" that sensitise space to unanticipated opportunities for movement (Malone, 2019). Such **vernacular reinvention** practices—affective tactics in which available resources are reimagined beyond their intended usage—are another crucial interest of this thesis, particularly wherever they work to foster togetherness and place without physical proximity.

Pursuing the above research trajectory, many researchers have explored networked technologies as places where relationships are deepened, considering both the reappropriation of existing technologies and the creation of new and "unconventional" artefacts to connect geographically separated loved ones (Alinejad

& Ponzanesi, 2020; Brereton et al., 2015; Hassenzahl et al., 2012; Kolozsvari, 2015; Li, 2019; Madianou, 2016). Migrant researchers have examined design interventions that empower migrants to be placemakers in spaces where they are marginalised (Gonsalves, Foth, Caldwell, et al., 2021; Sabie et al., 2020), while games researchers consider how placemaking occurs in, and is uniquely shaped by, virtual space (Quiring, 2015; Rzeszewski & Evans, 2020).

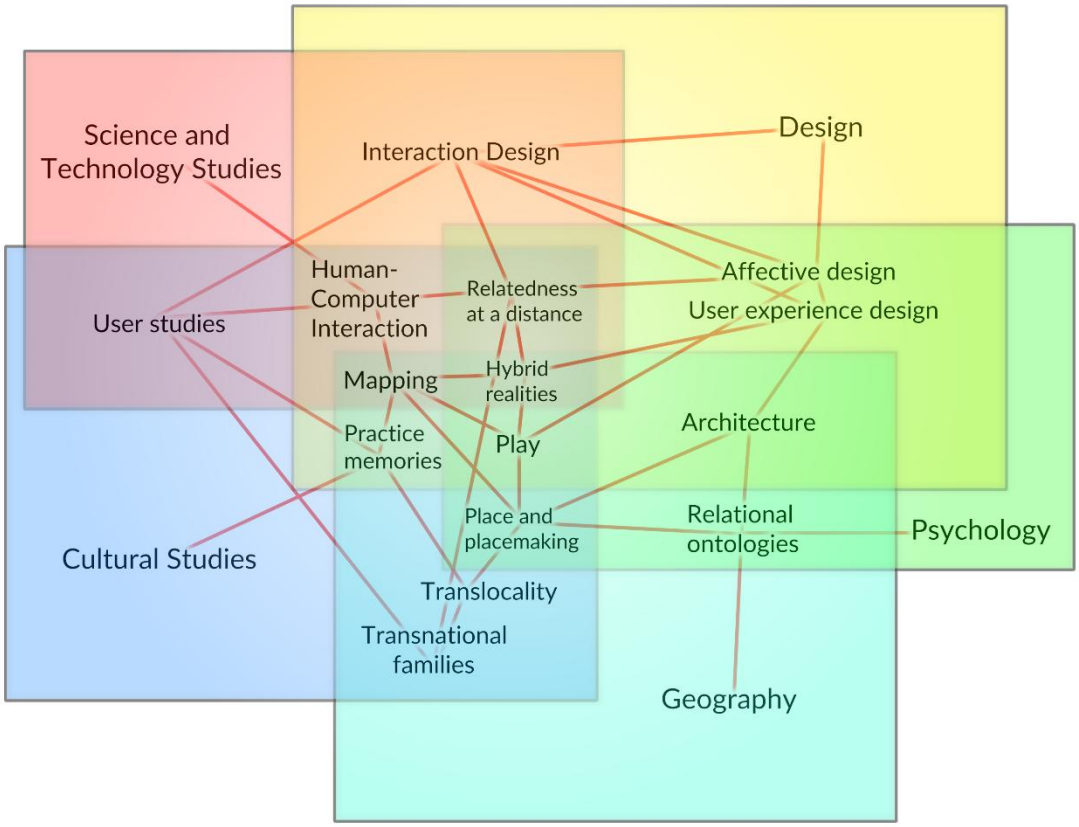
As can be seen in the above instances, research about translocal mediated places tends to be defined by demographic and technological divisions: between migrants and non-migrants, between migrants of different national backgrounds, between romantic partners and families, and between virtual and physical practices. These are all useful dichotomies when discussing the cultural specifics of each lived condition. But my thesis is interested in disrupting all of the above dichotomies, by *starting from* a translocal view. This is one of its main contributions to knowledge. There is ample research about how locality and cultural specifics inform one's sense of place both online and in physical space. Inquiry into a community from a specific locality only produces knowledge that centres that locality. Inquiry about how technologies shape relational activities produces knowledge about those technologies. But the relationships in question are all different, even among people from the same demographic background, and relationship practices are not solely informed by what is made possible by mediating technologies, but also by the priorities emerging from idiosyncratic needs and by the physical geographies that contextualise them.

There is less research that looks to understand virtual placemaking in relationships *as a translocal phenomenon*—informed by complex entanglements between the placemakers' places of origin, globalising forces shaping their interactions, the kaleidoscope of interpersonal lifeworlds (physical, virtual, imagined), and the technologies that host those lifeworlds, all interrelated and inter-influential. This research interest firmly eludes being boxed into a single disciplinary field. As Figure 1.2

Figure 1.2 aims to illustrate, mapping relations between the research areas relevant to this thesis reveals how they tend to blur boundaries rather than abide by them. My thesis thus considered all relevant study areas as an enmeshed whole, intersecting complementary lenses, epistemologies, and methods across them. It attended to the "work of translation" (Latour, 1993, p. 11)—hybridising rather than dividing—to meet the pluriversal realms of translocal placemaking where they are.

Figure 1.2

The Disciplinary Intersections of Translocal Technology-Mediated Placemaking



Through these "translational" encounters, the thesis' main contribution to knowledge was to construct a new translocal view of relational placemaking, embodied by the novel concept of **transplace** which is developed across the thesis' studies and conclusion (Chapters 5–10).

This "transplacial" view (perspective through the lens of transplace) also lives in dialogue with the many communities of research seeking to reinvent geographical thinking about place for the digital age. Many interrelated research areas—counter-cartographies, locative media, and digital placemaking, among others—re-envision space/place in ways that consider how technology is complicating and multilayering our experiences of orientation, dwelling, mobility, and attachment (Dourish, 2006b; Gordon & de Souza e Silva, 2011; Hardesty & Sheredos, 2019; Madianou, 2021). They diverge from the rationalist ideals of geographical science that assert mathematically accurate representations of space (Sletto, 2020; J. Turner & Taboada, 2020), towards developing a "view from everywhere" (Foth et al., 2007, p. 131) comprised of dwellers' tacit, lived knowledges of spaces and places. Many creative and design works in this field, too, aim to reconcile the placial view—of space being organised around the

anchors of human experiences and attachments—with the translocal view—of space as "practised place" (de Certeau, 1988, p. 117), mapped in dynamic networks of flows and movements (Abrams & Hall, 2006).

There is an opportunity for such place-oriented perspectives in HCI research to address how translocal people create a sense of place mediated through ICTs. This thesis explores that research curiosity through the lens of creative practice, encountering the experiences and practices of dwellers through "reflection in action" (Schön, 1984, p. 55) to begin constructing a kaleidoscopic view from everywhere. From here, Sections 1.3 to 1.7 position me within the research topic, to establish the direction from which I construct knowledge about space, place, and translocality through my practice.

Under the views outlined above, *places* are defined as networks of relationships, attachments and practices woven on space. When that is so, all the places one has known and made always live within oneself, regardless of one's physical location, and we bring those places with us wherever we go in the form of practice memories (Maller & Strengers, 2013). Below, I reflect on my personal encounters with translocality, practice memories, and place attachments, examining how my sense of every place I have experienced has been constructed by other places.

1.3 LIMINALITY: TO BE NOWHERE

> The roads are ledgers and the city is dense with the tales we have written upon it. And we will keep moving, and it will grow more tangled still, an understory of memories. The pavements are heavier with meaning every time we pass them—the corners where we pause, eat, kiss, sing, cry.[1]

On 14 February 2020, I boarded Flight TR6 to the Gold Coast, leaving Singapore behind in the overtures of the COVID-19 pandemic. I remember the silence that enveloped Coolangatta Airport as I landed in the morning, wearing my disposable face mask. The spectre of uncertainty hung over me and everyone who had flown with me—yet in Australia, there was little talk of the nascent pandemic, and whatever fears I voiced were quickly met with reassurances to the contrary.

[1] From my biographical short story "x marks the spot" (https://circlejourney.net/writing/xmarksthespot/).

Over the course of February, COVID-19 burgeoned from a regional concern into a global one. A growing list of countries closed their borders to the world in a bid to keep the virus outside. Inevitably, Australia joined that number on 20 March, closing its gates to foreign passport holders. I could no longer leave, or I would be barred from re-entry, and no end date had been set for these hardline measures.

As the first snap lockdowns of 2020 emptied Brisbane's streets, I did not personally witness the scale on which the virus was ravaging communities worldwide—the millions bereaved, and the millions more separated from their loved ones by border closures. Indeed, all I could perceive as the pandemic took hold was what occurred in my vicinity:

The four walls of the tiny room in South Brisbane that contained me for six hundred days, its walls gradually turning into a gallery of my life's visual memorabilia;

My parents' voices, distorted by the microphone, talking me out of suicidal thoughts at two o'clock in the morning, and;

The dust and paper collecting on my floor, a record of the days I spent trapped at my desk, a tableau of disarray mirroring the disorder outside.

Statistics indicate that my story is far from isolated: global migration rates have been on an upward trend for the past 30 years, with 281 million people in 2020—or 3.6 per cent of the world's population—living in a country they were not born in (International Organization for Migration, 2022). It follows that a number of relationships on a similar order of magnitude were implicated by border closures. The cross-sectional study by Ali et al. (2022) outlines the undeniable negative psychological impact of border closures, describing numerous scenarios like mine, in which immigrants forwent visits to loved ones in order to remain in Australia, or forfeited the new lives they had been building in Australia to be with their families.

For migrants like me, those struggles were exacerbated along the vectors of social and financial instability (Acharya et al., 2021; Ornelas et al., 2021; Serafini et al., 2021;) and racial discrimination (Cheng et al., 2021). That sociocultural marginalisation often translated to spatial marginalisation (Gonsalves et al., 2021): through the restriction of movement across borders, immigrants were divested of home, mobility, and a sense of place in a country where they faced discrimination and a lack of rights (Sangaramoorthy & Carney, 2021). The day I landed on the Gold Coast, strangers moved away from me, one making a show of hiding his face from me for the entirety

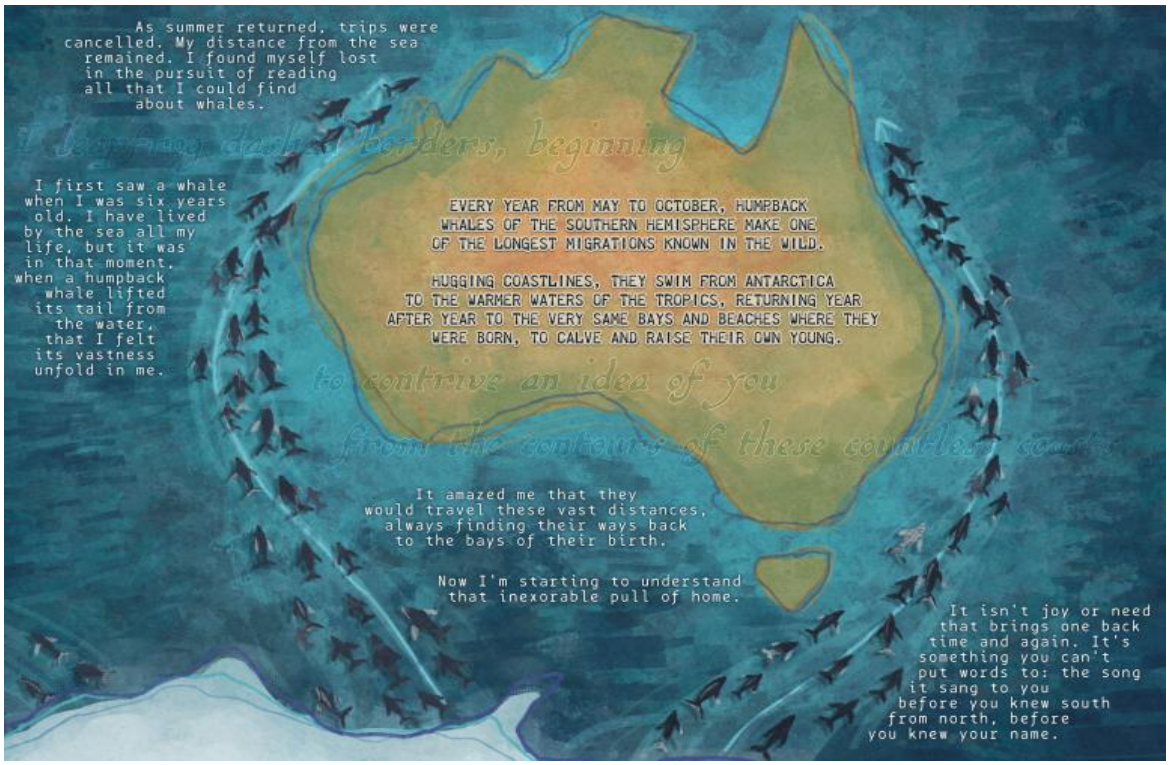
of the bus ride to the train station. News emerged of two Chinese women being murdered in hit-and-runs in Montreal (Olson, 2020), Korean spa-goers being gunned down in Atlanta (Fausset et al., 2021), and hundreds of incidents of anti-Asian hatred in Australia (Zhou, 2020), while Australian prime minister Scott Morrison asked international students to "go home" (Gibson & Moran, 2020). Each incident made it clearer: we had no place in the lands that we had chosen to call home.

In an attempt to make sense of my geographically liminal situation and the associated sense of alienation, I made *Atlas of Drifting*,[2] a book of maps telling the story of my pandemic-enforced isolation on both interpersonal and geographical levels. Creating it was a two-month process, in which I drew 14 maps by hand, based on original cartographic research and an investigation into how my internal frameworks for reckoning with grief and separation were always anchored to place. The maps featured a range of styles and subjects: one map shows the migration routes of humpback whales, depicting the borders of Australia as several indefinite, overlapping lines (Figure 1.3). Another map was rendered in neon colours on black, outlining my habitual walking routes to the supermarket, the library, and my favourite cafés at the peak of the lockdowns (Figure 1.4).

2 The book is available to read at https://circlejourney.itch.io/atlasofdrifting.

Figure 1.3

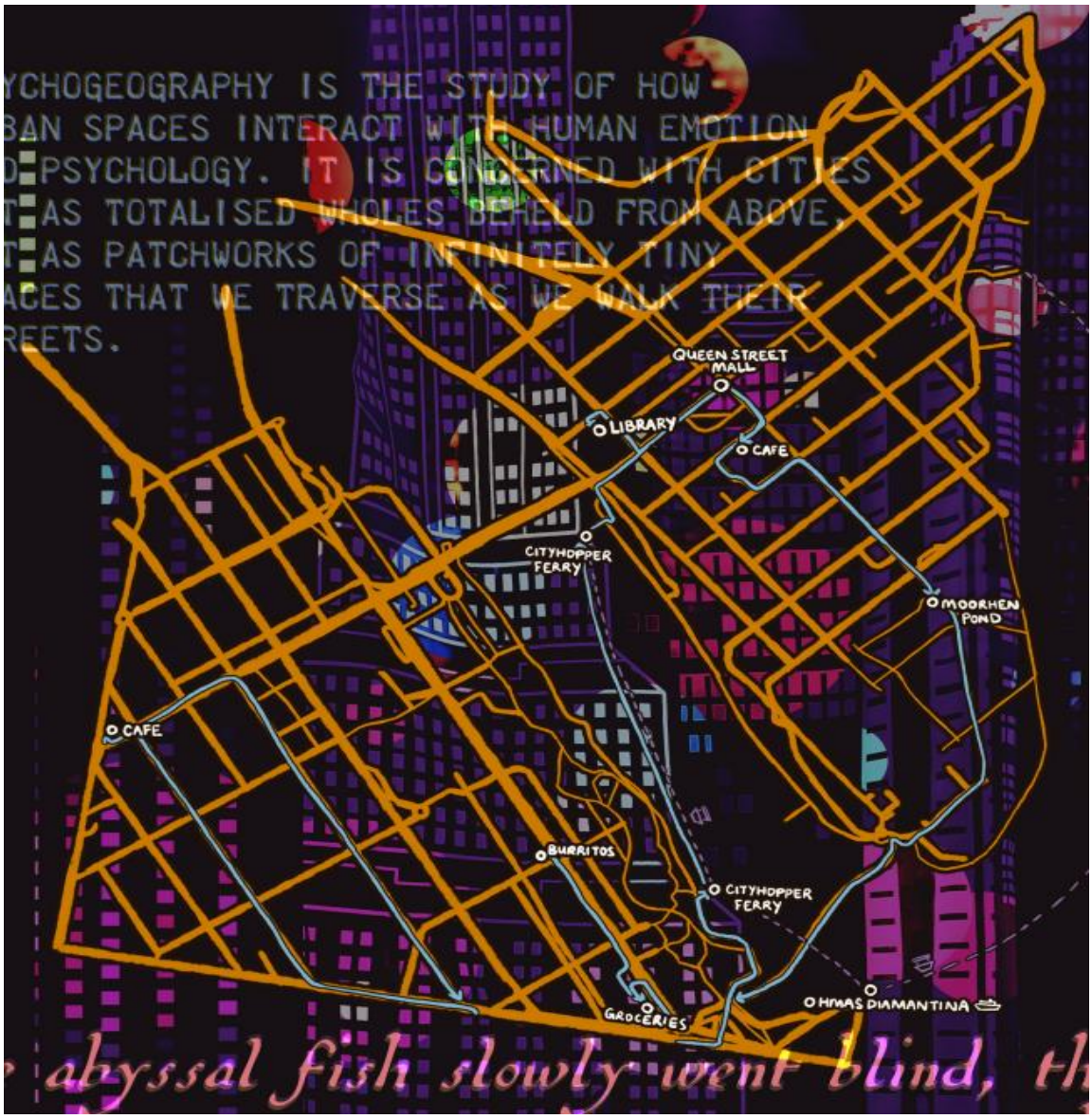
Whale Migration Map



Note. A map of the migration routes of the two Australian populations of humpback whales, from *Atlas of Drifting*. Image by the author.

Figure 1.4

Weekly Lockdown Traversals in Brisbane



Note. My cyclic walking routes through the streets of Brisbane City during the COVID-19 lockdowns, from *Atlas of Drifting*. Image by the author.

Atlas was, at its core, an effort to position the profound smallness of my space during the pandemic within the vastness of the distance separating me from my home, and the liminality of pandemic life, in which we seemed to be nowhere at all. Here, a series of 14 maps gradually deconstruct the conventional map form to capture passing time, contradictory sentimental attachments, and memories. Like all maps, these maps show as much through what they omit as what they depict (Harley, 1992), but the omissions here are of seemingly crucial information: routes mapped without borders, events mapped without time, and landmarks mapped without names. In this manner,

the erasure of key information establishes the book's thematic core of spatial alienation, attempting to capture both the sense of displacement and the perennial fluidity of space.

In "Space and Place: Humanistic Perspective", Yi-Fu Tuan (1979) details the distinctions of space and place, two concepts of location that are adjacent and intertwined. "Space" is marked in factual abstractions such as land area, shapes of borders, and other measurable geographical traits. "Place", on the other hand, is the meaning we inscribe in space, through sensations and experiences associated with it, and the "nets of human relations" (Tuan, 1979, p. 421) we develop across it. Tuan's formulation of place as memory incarnate—human relationships, habits and experiences anchored in a locality—resonates with my own. In the above essay, Tuan considers how the throughways between places are not places in themselves: a street is not a place, nor is a ship, to the one transiting through them. The liminal state of being in-between is uncomfortable, where the attrition of the old identity overlaps with the nascence of the new, in both spatial and temporal dimensions (Choi, 2010).

Migrants have long lived in various shades of liminality—in between places and identities. Even then, place continues to be axiomatic to how we reckon our relationships. Tuan, himself a migrant in his lifetime (Tuan, 2008), offers us the language with which to describe this liminal condition, and it is an idea that anchors this thesis project: how our sense of place—experiences, habits and nets of human bonds—can be dispersed geographically, destabilised or dislodged from physical space, yet persist anyway, wherever we are.

1.4 PLACE MEMORIES: GHOST STORIES

> For Brisbane, it is always the river: its shape is already etched in your mind. *There is my school*, you could say with confidence. *And there's the room in the house where I lived and hurt.* The whole world sprawls out from the new origin point of your universe, this new *axis mundi* sprouting from the earth of Brisbane like a great alien flower.[3]

On 11 August 2019, in a suburban waterfront house on the Gold Coast, my romantic relationship of two and a half years ended. I had moved to Australia in 2018

3 From my locative story collection *Ghost Under Bridges* (https://circlejourney.net/ghosts).

to close the distance between myself and my partner. Before then, we had shared a server on the messaging platform Discord, cultivating a virtual place for "ambient co-presence" (Madianou, 2016) where we had conversed during the course of our daily lives. Crucial as the internet had been in establishing our sense of co-presence, I knew that it alone would not solve our distance, motivating me to migrate to Brisbane.

Over the course of 2018 and 2019, my life recentred itself around Southeast Queensland, and my social sphere grew out from my partner's. I was inducted into the "field of care" (Tuan, 1979, p. 416) that was their family home, cultivating bonds with family and friends, anchored in space by shared acts of movement and maintenance. I did the laundry with them and arranged my houseplants on the windowsill beside theirs. Tuan (1979, p. 417) explains how "[t]he emotion felt among human beings . . . create[s] things and places to the extent that, in its glow, they acquire extra meaning". In such a manner, the net of my relationships grew outward across Brisbane and the Gold Coast, organising the space into meaning—and I came to refer to it as "home". When our relationship ended, I was torn from a sprawling network of spatial connections and found myself alone in a foreign house in a foreign land, with nothing to call my home.

That day crystallised to sharp clarity a feeling that had plagued me from the month I had arrived in Brisbane. I had long been haunted by my Singapore home—ghosts of sensory memory trying to fit themselves inside this radically alien landscape. In August 2018, I wrote a collection of three locative short stories which I titled *Ghosts Under Bridges*.[4] Inspired by *Pokémon Go*—the locative AR game by which I first familiarised myself with Brisbane's geography—*Ghosts* re-envisioned locations across Brisbane from the points-of-view of a migrant and a suicide victim. Attaching story nodes to physical locations through global positioning system (GPS) markers, it explored how those locations might be seen through the eyes of the alienated, likening it to "becoming a ghost".

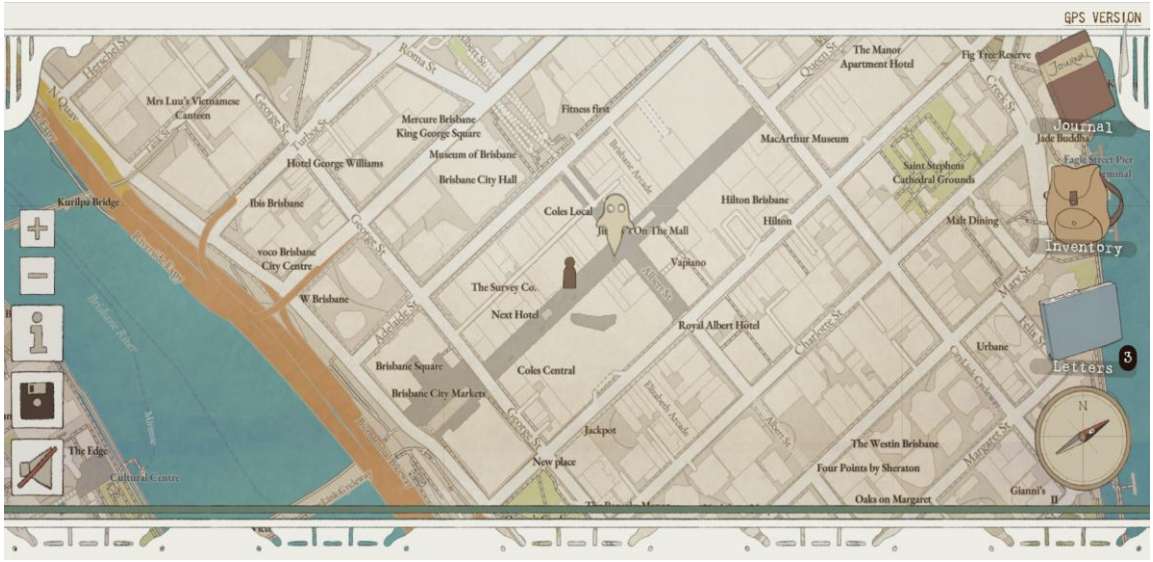
My Master's thesis project began in the wake of that separation. There, I picked up the loose threads of those spatio-psychological hauntings of *Ghosts Under Bridges* and conceptualised *The Spectral Carta* (Figure 1.5). It is a narrative game inviting players to discover a network of ghost stories situated across Meanjin (Brisbane), each

4 https://circlejourney.net/ghosts

exploring the forgotten or erased history of a building.[5] Each character haunts one of these locales, embodying the "unauthorised" history of a place lost to urban redevelopment. Through *The Spectral Carta*, I reencountered the city on my own terms, bringing our histories together via the themes of marginalisation and violence threaded through it. For me, it established an awareness that this city, too, is many places at once.

Figure 1.5

The Spectral Carta



Note. Screen capture from *The Spectral Carta*, showing the player beside the ghost (story) at the junction of Queen Street Mall and Albert Street.

The reason for my attraction to ghost stories did not clarify itself until it was illuminated by Michel de Certeau's writing on place and memory:

> There is no place that is not haunted by many different spirits hidden there in silence, spirits one can "invoke" or not. Haunted places are the only ones people can live in—and this inverts the schema of the Panopticon. But like the gothic sculptures of kings and queens that once adorned Notre-Dame and have been buried for two centuries in the basement of a building in the Rue de la Chaussée-d'Antin, these "spirits", themselves broken into pieces in like manner, do not speak any more than they see. This is a sort of knowledge that remains silent. Only

5 https://circlejourney.net/spectralcarta

> hints of what is known but unrevealed are passed on "just between you and me". (de Certeau, 1988, p. 108)

Ghosts, to de Certeau, are the accumulation of human experience anchored in space, perhaps Tuan's "networks of human concern" (Tuan, 1979, p. 418) hanging over locations as memory, secretive in their irresolvable plurality. These uncomfortable histories are often at odds with the authorities that police these spaces, who often, then, seek to erase them (Fong, 2015). In ghosts, I saw myself—a migrant drifting through the passageways of this city, leaving no mark, with all my relationships floating in a virtual ether. In stories of ghosts, I found solace from the struggle of piecing together a fragmentary history of aspiration, grief and trauma and re-locating them in my new home—memories torn from place with nowhere to go.

Like ghosts, migrants live at the margins of space, conditionally acknowledged as people when it suits hegemonic priorities, and otherwise treated as unwelcome interlopers. This is signified most clearly by recent legislation (O'Neil, 2025) banning temporary residents from buying property in Australia and gaining a permanent foothold here.

Australia expected me to be a carte blanche: an empty slate on which to inscribe the values of Australia. It wanted me to forget the languages and inflections of home—to become anglophone only and never show the parts that do not belong here. In a world that did not want my history, asserting these stories became an act of rebellion. Digital media, by allowing one to situate "unauthorised" narratives in policed spaces, provided precisely that instrument for meaningful placemaking which top-down infrastructure would not afford to marginalised individuals (Gonsalves, Foth, & Caldwell, 2021). In the same way, the technologies by which places were being made had never been designed for the inhabitants to feel close together or loved, but to serve interests like funding and profit.

That subversion of infrastructural power dynamics is a key reason that this thesis focuses on digital media and the internet, which has allowed for a foothold among individuals and antihegemonic movements (Beck, 2016). The available digital technologies afford a uniquely malleable means of emplacing lives and experiences without authorisation—be they places of remote co-presence, as with my server with my ex-partner, or geographically anchored place narratives like those found in a locative game.

1.5 DISPLACEMENT: HOW WORLDS DISAPPEAR

> The universe isn't a constant thing… We don't all live in the same one, did you know? I don't hear the same things you do, nor do you see the same colours as I. You make your own universe in your head…[6]

On 10 July 2013, I watched my mother's car pull into the taxi bay at Buona Vista MRT Station in Singapore. My three sisters and brother were all in the car with her: that was my first inkling that something had changed. These were the circumstances in which I received the news that my father had been diagnosed with Stage 4 colon cancer. That day marked a breakpoint in my life: thereafter came a gruelling year where he did not once return home, and visiting his ward in the Singapore General Hospital became part of my daily routine. It was as if overnight, the world had been demolished and replaced with a new one; looking out the window onto the street, I saw not my home but an unfamiliar dreamscape, what Tuan (1979, p. 418) once described as "the dissolution of the human bond" causing "the loss of meaning in the material environment".

"Memory, like geography," in the words of Stephen Hall (1996), "is associative." My home and city became haunted by many such ghosts of memory: of personal habits, events both joyful and traumatic, interpersonal connections, and patterns of traversal (which I captured in a shape poem in 2014; see Figure 1.6). Marginalised in Singapore as a queer, autistic person, I reconstructed my sense of place online as a matter of survival, seeking friends across the world, and crafting virtual dwellings with them. Because it was unsafe in my familial and social environment to actualise my identity, I turned to internet-mediated communities and relationships for support.

The seeking of safety and validation in online places is far from isolated to me: the importance of online safe spaces among young queer people living in unsafe contexts has been noted in the scholarship (Llewellyn, 2022; Lucero, 2017). The same marginalisations that had pushed me into the world of online sociality then moved me to remain in Australia.

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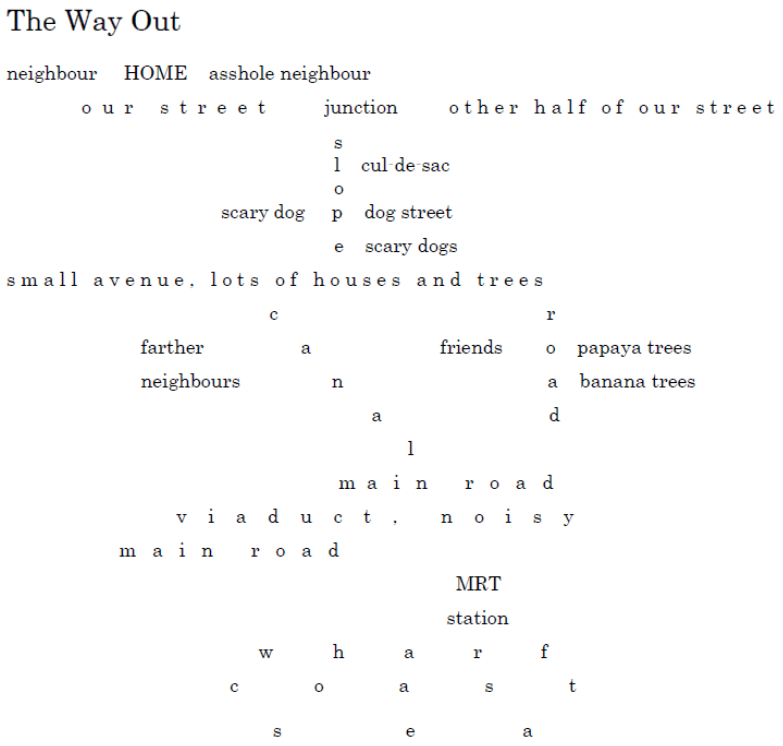
6 From my short story "Collapse", written in 2013 and first published in 2016 (https://circlejourney.medium.com/death-12bd0a52111a).

Figure 1.6

"The Way Out"



Note. A poem in the form of a map of my neighbourhood, written in 2014.

But the hauntings are not only found in my home. Place is woven in attachments and practice memories, and those memories, we bring wherever we go—so I am haunted, too. My place-based research emerges from that nest of hauntings: my cultural background as a Singaporean living in Australia, the overlapping liminalities that enfold my life, and the fact that I am a *voluntary* migrant, choosing to relocate and largely able to return home. Coming from a constructivist stance, this thesis takes lived context as its starting point—holding it as a valuable source of knowledge on hidden and highly contextual phenomena (S. Bell, 2009) that can only be understood as part of an ecology of lives and practices.

1.6 PLACE AND TECHNOLOGY: MY PERSONAL PRACTICE

Since migrating to Brisbane during the COVID-19 pandemic, the above themes of place, liminality and geographical memory have shaped my creative output. Some of these have been outlined in the preceding sections of this chapter: in 2019, I created *Ghosts Under Bridges*, then my practice-led Master's thesis project, *The Spectral Carta* (Low, 2020), elaborated on its themes through a web of locative ghost stories set in

Meanjin. Both projects are location-based narratives that concern hauntings; they outline a "narrative architecture" (Naliuka et al., 2010) that renders the exploration of story paths as physical movement via the inscriptive interface of a smartphone. In *Ghosts Under Bridges*, for instance, an uphill climb towards Story Bridge is mirrored in a narrative passage about ascending towards the boundary between life and death. Visualising the geographical entanglements in a more direct way, *The Spectral Carta* uses a map interface as its medium for telling its story. Upon it, interactive story nodes fade in and out of view, like ghosts, and the streets are rendered in the style of an old cartographic work. But unlike paper maps¸ which capture a fleeting representation of the landscape at a fixed point in time, the dynamic web medium allows for a shifting depiction of space that changes with the player's physical location, time of day, and interactive gestures.

This interest in maps and urban space resurfaces in my creative outputs across time, from *Atlas of Drifting* which captures the fragmented sense of place that emerged during the COVID-19 pandemic (Figure 1.3 and Figure 1.4), to both fiction and non-fiction writing about how humans, the more-than-human, histories, and speculative futures entangle in the city.[7] My thesis project extends an interest in affective space and place that I first engaged with as a creative practitioner.

My interest in representing the latent narratives embedded in geography persists into this thesis project, and its usefulness is reiterated by many scholars besides myself (Crow et al., 2009; Gonsalves, Foth, & Caldwell, 2021; Innocent, 2018; Lehtinen & Vihanninjoki, 2020; Ozkul et al., 2014).

But coming from my lifelong experience of making community in internet places (in what Wellman (2001, p. 228) refers to as "cyberplaces"), I am also interested in considering technology whose placial anchors are less direct or literal, but no less important; this comes from everyday knowledge as both a migrant in Australia and a person marginalised in Singapore. Diminescu (2008) reminds us that migrants are pioneers of connection at a distance: though we are loosened from the conventional spatial anchors of "home", we still make places with our families and communities, in sets of practices rather than physical proximity (Alinejad & Ponzanesi, 2021). The Discord server I shared with my ex-partner, the conversational WhatsApp group that

[7] These can be read at https://circlejourney.net/writing/blog/works/.

my parents and I customised together, and the online community forums where I once befriended similarly isolated teens across the world are just a few of the translocal places that are being made every day, by people whose togetherness necessarily transcends physical co-location.

1.7 EMERGENCE IN DESIGN RESEARCH

As the sections of this Introduction chapter have illustrated so far, my creative practice often functioned to rehabilitate a sense of place amid experiences of displacement. I staked a claim on my story and my lived experiences through cathartic creative expression, much as others before myself have done (Mattheis, 2021; L. Smith et al., 2011).

This thesis project extends and elaborates on my creative practice and research intersecting technology and place, not least because it was my Master's supervisor Prof. Jason Nelson who set me along the doctoral path, and his work (Nelson, n.d.) that introduced me to the catharsis of interactive art. The first study of this thesis, presented as Publication 1 (Chapter 4), functioned as a bridge from my Master's-level research to my doctoral research. Where my past work looked at how maps and locative media can convey a sense of displacement, "Pla(y)cemaking with Care" considers how networked technologies and play can (re-)emplace and situate virtual experiences. Mapping to its research curiosity, the thesis' *practice* curiosity is the question of how we can design interactive artefacts to support the cultivation of sense of place in interpersonal relationships even without physical co-location.

As is well understood, one rarely embarks on a design research project with complete certainty about its end, and such a project must remain open to new directions revealed by the emergent findings of intermediate stages. The strength of design research is that it is a kind of "night science" (W. Gaver et al., 2022, 517): letting the research take unexpected turns paves the way towards surprising insights which an adherence to a static model from start to end would not have allowed for. It is an abductive mode of inquiry (Timmermans & Tavory, 2012) that develops novel theory from the data.

As is the nature of such research, this project took a winding path through its chapters. But coming from a constructivist view, these emergent elements are a key dimension of the knowledge produced by this research project. The evolution of methodology to respond sensitively to each successive set of findings was anticipated,

and indeed the very idea of a "research problem" (which embeds a solutionist view in the research) became increasingly problematised by the evolving findings. The research subject changed from a problem space to an *opportunity* space (Hornecker et al., 2006), and the inquiry correspondingly shifted from a solving mode to a reinventive one. Like an on-the-ground navigator charting a course through an unknown place, I present this thesis not as a static map, but as a "tour"—in de Certeau's (1988, p. 118) parlance—of the research undertaking, mentioning in brief where there were U-turns and reroutes that were crucial to understanding the knowledge produced.

1.8 PROBLEM STATEMENT

This thesis set out to explore people's practices of mediated connection at a distance as placemaking, producing a new theoretical lens for characterising the pluralistic conditions that produce the needs and priorities of these relational contexts. To develop this theoretical lens, this thesis intersected concepts from the disparate fields of geography, architectural studies, and interaction design. It applied the findings through a Design phase with participatory elements, grounding the developed frameworks in design practice and community interaction.

1.9 RESEARCH QUESTIONS

Building upon the above problem statement, this thesis project was framed around the following two overarching research questions:

1. How do families and romantic partners living far apart establish a technology-mediated sense of place in their relationships?
2. How can we reimagine interaction design to be more sensitive and hospitable towards placemaking in translocal relationships?

1.10 SIGNIFICANCE AND SCOPE

The significance of this thesis is as a design research project that considers long-distance technology-mediated placemaking through a translocal lens. It viewed everyday lived experiences as crucial in designing for the very experiences it aimed to address, approaching my personal perspective as a starting point that framed engagements with members of the community.

This thesis undertook a transdisciplinary enquiry, enlisting disciplinary knowledge and instruments towards a transformation design practice led by the

communities of interest. It intersected research on translocal placemaking, playful cyber practices, and interaction design, aimed at developing novel design practices that support placemaking in long-distance technology-mediated contexts. It was elaborated through immersion in translocal playful practices, whose outcomes were drawn into a Design phase where the design work would ideate upon the findings of the prior investigation.

1.11 HOW TO READ THIS THESIS

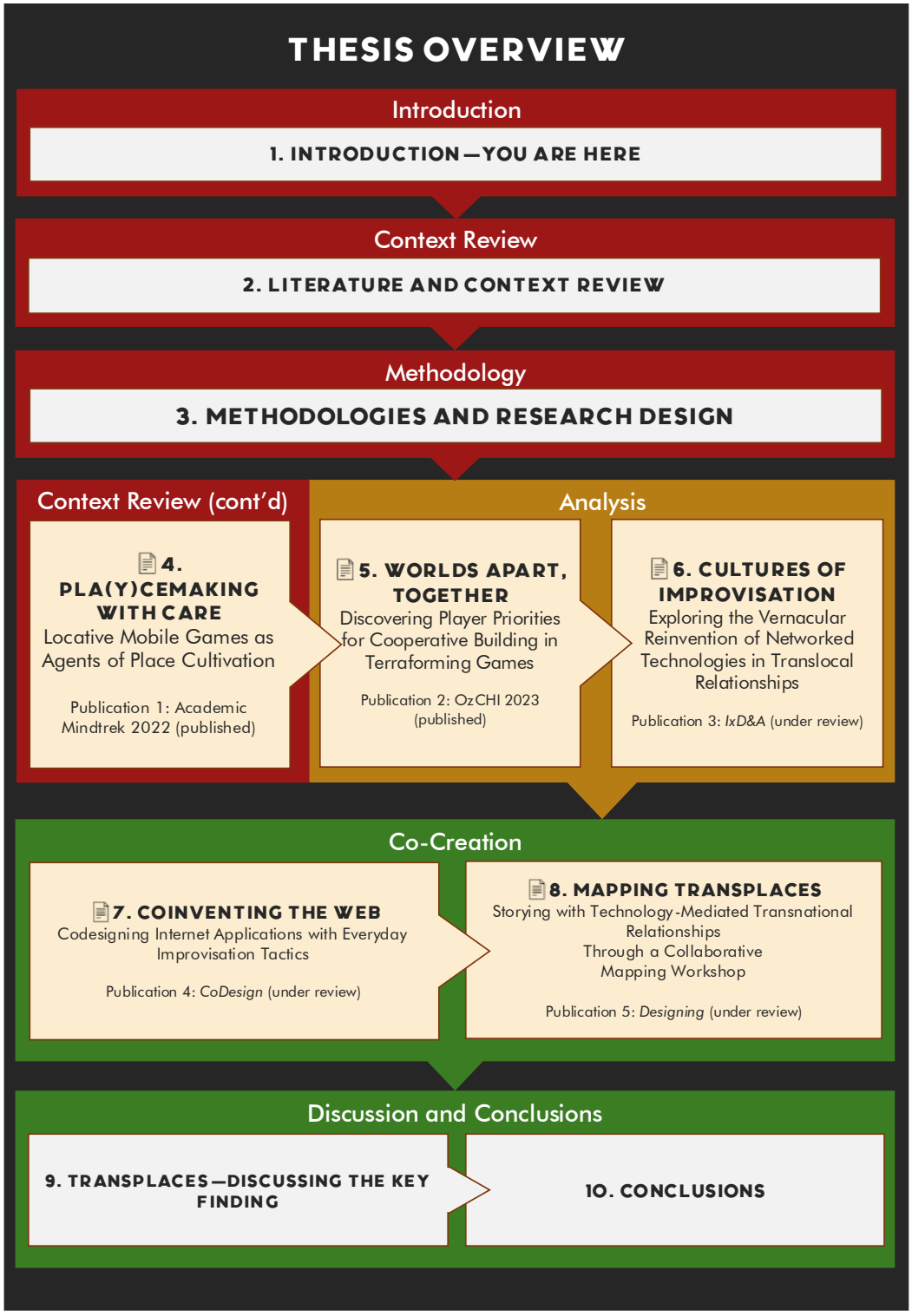
Imagine this thesis document as if it were a city. Its street plan was devised and laid out by the governance (QUT) in a schema developed across centuries of Western institutional inquiry. It began from a contextualising introduction (Chapter 1, You Are Here) and a review of the literature and creative context (Chapter 2), leading to the identification of a research gap to be answered through its methodology and research plan (Chapter 3). That research plan was then executed in a succession of data-collection stages (Chapters 4–8) whose findings were discussed and analysed (Chapter 9) to form the conclusions underscoring the thesis' contributions to knowledge (Chapter 10).

I have lived in this document for a year, and the city grid that was the thesis template (from the QUT School of Education, no less) became crisscrossed by backroads, shortcuts, and desire paths while I dwelled in it. Within the organising structure of the thesis, some sections diverge from what is typically expected of a research document, taking inquiry along an iterative sense-making process that resembles the capture spiral of a spider's web (Figure 1.1). I step back to consider the full net of relations formed by these threads in the Conclusions chapter.

The overall structure of this thesis document and the position of the publications within it is presented in the thesis map on the next page (Figure 1.7). Each phase of research is colour coded in red (Context Review), amber (Preparatory phase) and green (Design phase). This colour coding system is used throughout the thesis document to aid readers in locating each chapter within the thesis structure.

Figure 1.7

A Map of Thesis Chapters



Note. An overview of thesis sections and publications.

Being a Thesis by Publication, this document includes the five academic articles of the publication plan, each as a chapter in the thesis. These are included as chapters

rather than in appendices to illustrate how the findings from each one inform subsequent phases.

In the next nine chapters of this document, the context laid out in this introduction will be intersected with prior work in the relevant academic and creative fields. The current order of chapters is a compromise between the structure of a traditional thesis and a coherent presentation of the sequential development of ideas. However, as is often the case with theses by publication, its chapters were written in nonlinear order. Certain readers may find it useful to read the thesis chapters in a different order, depending on their interests. Following in the tradition of choose-your-own-adventure novels and hypertext fiction (Aarseth, 1997), I present a few possible reading paths in Table 1.1.

Table 1.1

Three Possible Reading Paths for This Thesis Document

Focus: Chronological evolution of ideas across the span of the research project	**Focus: Progressive development of theoretical concepts from the ground up**	**Focus: Contributions to knowledge**
Chapter 2: Literature and Context Review	Chapter 4: Pla(y)cemaking with Care: Locative Mobile Games as Agents of Place Cultivation (Publication 1)	Chapter 4: Pla(y)cemaking with Care: Locative Mobile Games as Agents of Place Cultivation (Publication 1)
Chapter 3: Methodologies and Research Design	Chapter 2: Literature and Context Review	Chapter 2: Literature and Context Review
Chapter 4: Pla(y)cemaking with Care: Locative Mobile Games as Agents of Place Cultivation (Publication 1)	Chapter 3: Methodologies and Research Design	Chapter 5: Worlds Apart, Together: Discovering Players' Placemaking Priorities in Cooperative Terraforming Games (Publication 2)
Chapter 5: Worlds Apart, Together: Discovering Players' Placemaking Priorities in Cooperative	Chapter 5: Worlds Apart, Together: Discovering Players' Placemaking Priorities in Cooperative	Chapter 6: Cultures of Improvisation: Exploring the Vernacular Reinvention of Networked Technologies in

Focus: Chronological evolution of ideas across the span of the research project	**Focus: Progressive development of theoretical concepts from the ground up**	**Focus: Contributions to knowledge**
Terraforming Games (Publication 2)	Terraforming Games (Publication 2)	Translocal Relationships (Publication 3)
Chapter 6: Cultures of Improvisation: Exploring the Vernacular Reinvention of Networked Technologies in Translocal Relationships (Publication 3)	Chapter 6: Cultures of Improvisation: Exploring the Vernacular Reinvention of Networked Technologies in Translocal Relationships (Publication 3)	Chapter 7: Unfinished by Design: Inviting Vernacular Improvisation through Provotyping Practices (Publication 4)
Chapter 7: Unfinished by Design: Inviting Vernacular Improvisation through Provotyping Practices (Publication 4)	Chapter 7: Unfinished by Design: Inviting Vernacular Improvisation through Provotyping Practices (Publication 4)	Chapter 8: Mapping Transplaces: Placemaking through Storying in Technology-Mediated Transnational Relationships (Publication 5)
Chapter 9: Transplaces—Discussing the Key Finding	Chapter 8: Mapping Transplaces: Placemaking through Storying in Technology-Mediated Transnational Relationships (Publication 5)	Chapter 9: Transplaces—Discussing the Key Finding
Chapter 8: Mapping Transplaces: Placemaking through Storying in Technology-Mediated Transnational Relationships (Publication 5)	Chapter 9: Transplaces—Discussing the Key Finding	Chapter 10: Conclusions

Focus: Chronological evolution of ideas across the span of the research project	Focus: Progressive development of theoretical concepts from the ground up	Focus: Contributions to knowledge
Chapter 10: Conclusions	Chapter 10: Conclusions	

The Literature and Context Review (Chapter 2) grounds the project in the pre-existing academic and creative-practice contexts. It highlights the research gap around considering mediated relationship practices and polymedia through a place lens, proposing to research this subject in a way that transcends locality- and demographic-based dichotomies.

Chapter 3: Methodologies and Research Design develops the gap identified in the context review into two research questions, then outlines the research plan devised to address them. In particular, it considers how practice-based design research was enacted to sensitise disciplinary knowledge and instruments to diverse community practices. Under that practice-based methodology, this chapter outlines the idiosyncrasies of researching virtual subjects and outlines the design and virtual-ethnography methods deployed in this project.

The methodological lenses explored in Chapter 3 were applied in the data-collection phases, reported on in Chapters 4 through 8. Each of these chapters constitutes one of the five publications of the research, each progressively bridging disciplinary knowledge into design practice and applying it towards researching the lived contexts of translocal relationships.

Chapter 4 (Publication 1: "Pla(y)cemaking with Care") is an extension of the Literature and Context Review of Chapter 2. It enriches the theoretical research context with empirical findings through an autoethnographic study on locative mobile games—technologies where the key theories of space/place, translocality, technology, mapping, and play are all highly prominent. This study refines a theoretical framework on slow placemaking and networked play, paving the path forward for the subsequent research.

Chapter 5 (Publication 2: "Worlds Apart, Together") begins by extending prior physical place theories to a virtual space context, through an in situ observation and analysis of house building in a sandbox game. Chapter 6 (Publication 3: "Cultures of

Improvisation") resituates those theories in the everyday lived experiences of adults maintaining translocal relationships through a qualitative survey and thematic analysis. The results of this study detail vernacular reinvention as an important everyday placemaking tactic in translocal relationships.

Chapter 7 (Publication 4: "Unfinished by Design") applies earlier lessons about translocal vernacular reinvention towards reimagining design practices. It does so through a series of four design provocations, each playfully reinventing interaction design practices around an improvisatory and decentralised ethos, to better attune them to vernacular reinvention. The chapter concludes that designing for place requires one to design in creative complicity with users, approaching "hacking" behaviours as indications of desires and priorities, rather than as problems to be patched away. Through the findings of this study, I first contemplated the idea of transplace to characterise a pluralistic, rhizomatic view of translocal placemaking, where a multiplicity of places—physical, virtual, imaginary, public, private, and more—are drawn into complex interrelated wholes.

In Chapter 8 (Publication 5: "Mapping Transplaces"), this concept of transplace is refined via the culminative co-creation study of the thesis. Through a co-creation workshop study, I explored the diverse life stories and virtual placemaking practices of participants maintaining translocal relationships. In addition to the stories being shared, this study used an adaptive virtual whiteboard developed in the previous study to explore placemaking in situ via adaptive infrastructure. The outcomes of the study are presented and extended into an interactive feral map of transplaces that can be altered by members of the public (Creative Work: *Mapping Transplaces*).

In the Discussion chapter (Chapter 9), I analyse the findings of all studies to clarify the main contribution of this thesis: a theory of transplace, a new way of understanding translocal placemaking that recognises its heterogenous and pluriversal nature. It then positions vernacular reinvention (reframed as *transplacial* reinvention) as a characterisation of the tactics that give rise to transplace-making and a contemplation of how to design for transplace.

Finally, the Conclusions chapter (Chapter 10) revisits the thesis as a whole, its key contributions to knowledge, and reconnects the thesis' findings with the lived contexts that it speaks to.

Chapter 2: Literature and Context Review

The personal introduction in the previous chapter laid the personal context for my interest in translocal experiences, and why the subject is pertinent for research—particularly practice-based design research. This research project sought to contemplate the rich entanglements of interaction design, translocality, and efforts towards placemaking "between places" in translocal contexts.

Because translocal placemaking and network-mediated relationship maintenance are highly contextualised in lived experiences, useful knowledge about them is often found outside of institutions of research. Speaking to this fact, this thesis approached everyday practices and creative output from members of this community as useful knowledge of such translocal experiences, as valuable as academic research publications. To support this constructive, practice-oriented view of knowledge, the current chapter is not a conventional Literature Review, but a broader Literature and Context Review.

In this chapter, I begin by outlining the conceptual framework behind the context review, considering how it underscores the practice-oriented framework of this thesis—where practice refers not only to my creative practice, but also to the everyday practices of navigators of translocal spaces and places. Then, I lay out definitions and key theories in the following areas: space and place (Section 2.2), migrancy and translocality (Section 2.3), and the ways that media and technologies shape the phenomena of place (Section 2.4). I more closely examine how humans' spatial capabilities and relational practices have evolved on a communal scale along with developments in networked technologies (Section 2.5).

Bridging disciplinary literature and design practice, I consider maps and mapping as sites of convergence and contention between top-down and bottom-up place knowledges, and how mapping becomes an instrument of both spatial control and bottom-up knowledge creation and social change (Section 2.6). In Section 2.7, I explore play as a transformative approach to spatial practice and placemaking, as well

as its entanglements with both mapping practices and subversive tactics of marginalised communities living in liminal conditions.

The threads of these ideas reveal the gap in current research (Section 2.8), which has so far defined by divides between familial and romantic, physical and virtual, separation and co-location; the hegemony of national borders; the preeminence of physical co-location; and other such ruptures. I argue that everyday dwellers of translocal relationships are making places that bridge across all these divides, emphasising the necessity of research—particularly design research—about translocal intimacy and placemaking that intersect these diverse areas, considering the real, enduring, rich, and pervasive nature of translocal lived experiences.

2.1 CONTEXT REVIEWS

To situate this work within the many disciplines of research that it overlapped, this chapter includes, in part, a literature review examining the body of related academic work. Additionally, because the enaction of practitioner knowledge and the production of creative outputs were crucial to this project's methods and contributions to knowledge, it was useful to situate the research in its creative and design contexts. As such, this chapter also reviews related creative and design works in a spectrum of media, combining these with a review of the literature under the structure of a *context review*.

Context reviews are described by Barnes and Melles (2007, p. 6) as "an active engagement with a community of practice" surrounding the research area. As documents, they seek to bring together academic knowledge (in the form of scholarly literature), and vocational knowledge (in the form of creative outputs, methods and tools). Context reviews locate the knowledge in its applied context, supporting research outputs that develop insights for both lay and professional communities, in addition to the relevant research disciplines.

Because this project sought to research the kinds of grassroots knowledge encoded in communal practices and thereby produce new design practices, the current chapter lays the groundwork by reviewing both disciplinary-academic and the professional-creative contexts. This chapter presents a review of both the relevant literature and a diverse body of relevant creative works, with the aim of laying out its academic and creative precedents, and to address the opportunities and knowledge gaps it addresses in both areas.

2.2 SPACE AND PLACE

The subjects of *space* and *place*, and views that connect and differentiate them, are the key philosophical lenses through which this thesis and this context review have been constructed. This section contemplates established and seminal theories on space and place from fields such as humanist geography and architectural studies, looking at location, mobility, and dwelling in terms of rationalist and then phenomenological thought. This section establishes that historical groundwork in order to contextualise subsequent evolutions of ideas about space and place.

2.2.1. Place and Dwelling

From the incipient years of humanist geography, scholars have set out to define and distinguish the concepts of *space* and *place*. Prior Western scientific thought tended to focus on *space*, a three-dimensional medium described by rationalist abstractions such as direction and distance, through which (human and celestial) bodies move (Cresswell, 2008). Responding to this, a humanist view of geography was developed by Kevin Lynch (1964), Yi-Fu Tuan (1979), Edward Relph (1976), and Christian Norberg-Schulz (1979), who proposed to emphasise *place:* cumulative networks of subjective meanings and sentimental attachments that anchor human experiences in space.

It is Lynch's (1964) work that lays the ground for much subsequent research in the field of humanist geography. Lynch outlines the "image-ability" (p. 101) of urban space as a quality of space that emerges from its physical idiosyncrasies. These, in turn, activate space as a receptacle for mnemonic and spiritual associations. Relph (1976) reiterates this as a formal theory of place, describing the identity of a place as a gestalt of histories, meanings and practices which, through a negotiation of the interrelation of these traits, "[constitute] the identity of that place" (48). Also following from Lynch's work, Norberg-Schulz's (1979) phenomenology underscores the human perception of space as a series of "enclosures" through which we bring place into existence: boundaries are what distinguish a place from its undifferentiated backdrop. Importantly, Norberg-Schulz notes that places have a character (or "spirit", a genius loci) engendered by a holistic experience of a space's interrelated parts, such as the character of a house forming from the relationships between its rooms and passageways.

It is hard, also, to proceed in this space without mentioning Martin Heidegger (1971), despite his political affiliations. He established a phenomenology of

architecture and landscape in his work “Building Dwelling Thinking”, suggesting that humans build because we are dwellers: building is how humans keep their place on earth, with built structures “gathering” the earth and sky and things in the environment into places of meaning. This notion is sustained by how the term “habit”—practices reinforced through repetition—embeds the concept of habitation, or the fact that the infinitive “to dwell” is embedded in the noun “dwelling”, which means “home”. This, Heidegger states, is achieved through two modes: the construction of landmarks, and the cultivation of places.

As Norberg-Schulz (1979, p. 17) also describes, placemaking functions to “make the natural structure more precise . . . ‘expressing’ the existential foothold [humanity] has gained”. In more recent migrant research, it has been found that such placemaking also consolidates the “needs, memory reconstruction, and identity” (Sabie et al., 2020, p. 507) of migrants and others seeking to establish cultural anchorage in an unfamiliar land.

Among the earlier phenomenological thinkers, one finds a common theme: the invisible predicate of fixed systems of locality. To the scholars mentioned above, boundaries and enclosures identify places as definite entities, and the literature strives to define what constitutes those boundaries and enclosures. The scholar Yi-Fu Tuan argues in a different, inverse direction. Tuan (1979, p. 412) considers place in terms of geographical “centre[s] of meaning” out of which radiate one’s apprehension of one’s relationship with the world.

To Tuan, there exist not formal enclosures and boundaries but nuclei of meaning which gather space into places. He describes a taxonomy of two kinds of places, each of which forms in different ways: the first, *public symbols*, develop Lynch’s image-ability and Norberg-Schulz’s genius loci into the idea of spaces that become places through the top-down construction of conspicuous landmarks that gather their surrounds into a place.

The second kind are *fields of care* (Tuan, 1979, p. 416), which come to be through bottom-up practices by which inhabitants cultivate places through everyday actions. Tuan cites residential neighbourhoods as an instance of these, shaped over time through the habitual action of independent inhabitants and thereby becoming nets of interwoven relations and associations. These *place attachments* are identified by their

slow, careful creation, in which actors do not operate with any conscious top-down design:

> The functional pattern of our lives is capable of establishing a sense of place. In carrying out the daily routines we go regularly from one point to another, following established paths, so that in time a web of nodes and their links is imprinted in our perceptual systems and affects our bodily expectations. (Tuan, 1979, p. 418)

Tuan's thinking importantly highlights place as more than just the domain of urban planners and property developers, but also as something that everyday dwellers make and establish by the simple fact of being and relating to their material environments, "wherever we happen to be" (Tuan, 1979, p. 417).

Public symbols are imposed, constructed, recognisable and easily identified, like the Story Bridge on the Brisbane River: they are localities that are selected to become a place, upon which a monument is constructed which gathers the surrounds into a "sacred" site. Fields of care, on the other hand, *emerge* from the grassroots. These places are not conspicuously named as places, but become cultivated through networks of repeated practice and sociality that Tuan (1979, p. 418) calls "habit fields", rarely projecting themselves visibly. As with the neighbourhood south of the Story Bridge, whose parks and pathways are traversed daily by students, dog walkers, and workers, it is the networks of relationships and habits of day-to-day denizens that organise the space into a place.

One important turn in the "placial" argument of Tuan and of his contemporary, Edward Relph (1976), is the introduction of an interpersonal relationality to the nature of place, particularly the kind that emerge slowly. Not only is place experienced, it is also fostered in networks of social ties—with locality, with other people, and with cultural ties.

While deeply entangled with affective qualities, places are not purely mental phenomena: they are complemented by physical processes of configuration and cultivation. Public symbols are built through the investment of capital, and fields of care are incrementally and granularly configured by dwellers, by which their physical spaces "learn" (Brand, 1995), accumulate, and embody the inhabitants' place-attachments. Public symbols have long been the focus of research, while fields of care are increasingly being emphasised as a vector of dweller-led participation in the development of urban space (Foth, 2017).

One may then consider public symbols and fields of care in terms of how quickly they form. The former are designated from the top down, constructed rapidly through the impositions of power and capital. The latter, however, are created slowly, through the dwelling of citizens (Knox, 2005). This thesis is primarily interested in such dwelling(s). Here, "dwelling" is meant in both intertwining senses—(i) of inhabiting, and (ii) of slowing down or lingering. Slowness is care-fulness (Foth and Guaralda, 2015). Slowness "[fosters] respect for seasonality and traditional rhythms of community life [which] propagates recurring and interlocking patterns of events that make for cultural transactions and public sociability" (Knox, 2005, p. 8). The care-ful weaving of relational networks through the interchange of personal knowledges is what makes place *place*, and they fundamentally challenge the premise of eternal, rapid expansion that underpins the panoptic, profit-oriented, big-data-driven Capitalocene (Haraway, 2016).

2.2.2. Moving as Interpretation

In the previous section, I have outlined how "space" and "place" have been set into contrast based on how they are constructed: the former rationally, and the latter subjectively. Another scholar, Michel de Certeau (1988), offers another characterisation in *The Practice of Everyday Life*. While Tuan and contemporaries present an ontological description—that place is (inter)subjective relationality organising space into meaning—de Certeau instead characterises the difference between place and space hermeneutically, using the allegory of the map and the tour. Place, like a map, is a static collective of material, and space, like a tour, is "practiced place"—the phenomenon of navigating and interpreting place from the ground level. To de Certeau, movement—or "walking in the city" (de Certeau, 1988, p. 91) as the chapter is titled—is an interpretative act by which place becomes actualised. The walker of the streets reads the city's text where the viewer of a map only sees inscriptions: the street's "streetness", and space's "spaceness", are only understood through traversal. Here, "movement" has a literal meaning—traversing, circumnavigating, pacing around, exploring, getting lost in, and dwelling in space.

This parallelism between spatial navigation and textual interpretation was first plied in writings on the hermeneutic circle, where the allegory of the circular path is used to illustrate a cyclic traversal of a text. Gadamer (1977) considers how a text's meaning is only apprehended with successive revisitations, each time bringing different presuppositions. As Schleiermacher (1998, p. 24) notes on the same subject,

"nothing which is to be explicated can be understood all at once, but that it is only each reading which makes us capable of better understanding by enriching that previous knowledge." Schleiermacher invokes the meandering, cyclic path between the specific and the general, or the whole and the parts, each cycle elaborating on the knowledge of, and challenging or extending presuppositions of, the last one.

Discussing the hermeneutics of prior scholars, Ricoeur (1981) advocates that cycles of interpretation must remain in dialogue with the intersubjective, or the "excess of meaning" (Gadamer, 1977, p. 102) coming from a world of complex problems and contrasting interpretations. He achieves this by extending the circle metaphor into a spiral. Rather than a circular path that repeats upon itself and maintains isolating distance from the world, the spiral path of interpretation draws intersubjectivity into the interpretative loop, to advance it beyond the historic and traditional precedent of the text and bring it into dialogue with the world.

In his writing, de Certeau reciprocates the navigational metaphors of hermeneutics by analogising the city as a text. Much like reading a text is the only way to know it, walking in the city is how we know urban space because it invokes its tacit and essential nature: the street is known through walking. There is knowledge being enacted by the people moving on their feet, even if it is not seen as knowledge in the factual, institutional sense—an understanding of how to travel from Point A to Point B does not exist as a static fact but is negotiated every time one moves, and it is a knowledge that changes over time. In Brisbane, I know two walking paths from home to my nearest supermarket, the shorter of which includes a staircase and the longer involving a detour up a slope. Which route I take depends on the day, the weather, and how I feel. In this way, the traversal of space demonstrates a kind of *knowing in action*, a practice knowledge. As Ingold (2013, p. 41) notes:

> Inhabitants, in short, know as they go, as they journey through the world along a path of travel. Far from being ancillary to the point-to-point collection of data to be passed up for subsequent processing into knowledge, movement is itself the inhabitant's way of knowing.

Usefully hermeneutics, too, describes knowledge as being formed through an active practice of interpretation (Gadamer, 1977), which is recreated with every interpretative act and is always reliant on one's presuppositions and contextual frame. But in the tradition of Ricoeur, such knowledge is re-known or redescribed in a spiralling path that advances over time, as knowledges intersect and sometimes come

into friction. Space, too, like a text, is repeatedly re-known in myriad ways by its residents, and those different ways of knowing may conflict among themselves: they are "contradictory movements that counterbalance and combine themselves outside the reach of panoptic power" (de Certeau, 1988, p. 95).

2.2.3. Careful Meshworking

Tuan's ontological typology of space/place and de Certeau's hermeneutic reading of space/place are not incompatible but can be seen to intersect in this way: space is a medium mapped in forces, flows and mobilities; places are collective, accumulative nuclei of meaning enmeshed in space. I will use the terms "space" and "place" as such throughout the rest of this thesis document. But in practice, trying to distinguish whether *somewhere* is a space or a place is not very useful, as there are no categorical distinctions between the locations where we dwell (places) and where we traverse (spaces), or between the acts of moving and dwelling themselves. One's being is not series of movement paths connecting the static nodes of dwellings: one's path *becomes* dwelling, which is also a kind of moving, and vice versa. As a result, the moment when a space becomes a place or vice versa is also ambiguous. Ingold (2013, p. 32) illustrates this as:

> we tend to identify traces of the circumambulatory movements that bring a place into being as boundaries that demarcate the place from its surrounding space. Whether on paper or on the ground, the pathways or trails along which movement proceeds are perceived as limits within which it is contained. Both cases exemplify the logic of inversion at work, turning the "way through" of the trail into the containment of the place-in-space.

In the case of my routes between home and the supermarket, space/place is the tacit knowledge that develops as I move between and around them. That moving—which is also dwelling—weaves a net of habits and attachments, entangling my body and memories with the physical layout of the neighbourhood. But whereas my home and the supermarket are bounded by walls and doors, space/place does not necessarily refer to what is enclosed by those boundaries. Rather, it permeates them and beyond, drawing the mediating space within, between, and around them together into an interwoven whole.

But space/place does not exist solely in *my* mind: it is always intersecting with the practices of others who navigate those spaces with me, intertwining and always

altering each other's apprehensions of the world—such as when I spill coffee on the pavement in front of a stranger, or when I stop to pet a neighbour's dog. Every person is an expert in moving and dwelling, but each person *knows* and *does* space/place differently. Space/place, then, is the network of these knowledges.

Such views challenge the notion of human places as standing apart from nature and the world through the marking of enclosures, an idea first presented by the likes of Heidegger (1971) and Norberg-Schulz (1979). Speaking to this, Schutz and Luckmann (1973, p. 5) posit the idea of the lifeworld: a world that is intersubjectively understood and negotiated as a social web of relations. Specifically, they contemplate how "nature" is enmeshed with the socio-cultural world through experience and interpretative layers of meaning, so there is no exceptionalism to the places built by human hands.

In a lifeworld, knowledge of a space/place emerges from the multiplicative entirety of all experiences that intersect it. Such a spectrum of tacit knowledges has been referred to as a **view from everywhere** (Foth et al., 2007). This is not the static and dispassionate kind of knowledge espoused by a "view from nowhere" (Nagel, 1989, p. 70), but knowledge "embedded in networks of relationships—rather than only residing in individuals—and . . . culturally mediated" (Foth et al., 2007, p. 6). Such knowledges, which are always enacted dynamically, do not exist in a single, abstract, monolithic form: they are by definition fully contextualised by space/place and always in the process of becoming.

2.2.4. Place as Relationality

Many of the above scholars, particularly at the inception of humanist geography, worked from a Western institutional frame, and their work describes place in terms of producing a sense-of-being in space. Within the core inquiry of this thesis project, the past disciplinary scholarship is importantly enriched and challenged by Aboriginal views of Place (as a living subject, departing from "place") and inquiry. Mary Graham (2009) asserts the importance of viewing Place as more than an object of study: it is the very ontological basis for all inquiry. The way that we go about studying phenomena must always attend to placial context, because they always *come from* placial context.

This ontology puts a challenge to the pattern in Western scholarship of striving to understand phenomena in the abstract—to view them "from nowhere" (Nagel, 1989, p. 70), before place or context, separating humans from the natural world. For Graham,

the relation should be inverted: “place precedes inquiry” (Graham, 2009, p. 4), and knowledge is always emplaced, not just geographically but also relationally.

This is a relational ontology which understands that human autonomy in the world is identified by “not rationality, nor our cerebral faculty alone, but rather the autonomy of affect as a virtual force that gets actualized through relational bonds” (Braidotti, 2019, p. 27). As Donna Haraway (2016) explains, we live enmeshed in relational webs with all other things in the world; this includes both interpersonal relations and relations with the nonhuman and the non-living. Such webs of relational entanglements *are* places, and places themselves have voice and agency through the sympoiesis of their dwellers. As such, against Nagel’s abstraction of knowledge away from human subjectivity to an uncontested “nowhere”, Haraway asserts all knowledge as perceived, constructed and dialogued with through the body—be that body “Man and White” or “female and colonized” (Haraway, 1988, p. 576-581). In that way, knowledge is situated within one’s web of relations with the world—becoming *knowledges*. An inquiry into phenomena of the world is incomplete until we locate the inquiry among those relations.

There is a useful dialogue between the relational place ontologies of Graham, Tuan and Haraway. Place is the very matter of how we orient ourselves and reckon meaning in relation to the world. The view that has been outlined in this section—of space/place not merely as an artefact of matter, but as the embodiment of how we make sense of and relate with the world—laid the groundwork for this thesis project’s focus.

The thinking discussed here offered a useful basis for researching places which exist in complex configurations with respect to physical locality. This research work was less *about* place and more *with* place: it centred the complications of place in long-distance interpersonal relationships, provoking an interrogation of what place *is* when it cannot be presumed to be co-extensive with corporeal three-dimensional space.

The communities and experiences under consideration are continually evolving as technological, geopolitical and trade conditions change—a fact summarily demonstrated by the COVID-19 pandemic. The next section explores a timeline of scholarship about subjects under the umbrella of translocality and transnationalism. These contributions consider how places are reckoned and cultivated when the

medium of dwelling does not map directly to the ideas of space that prior research was founded on.

2.3 TRANSLOCALITY AND COMPLICATIONS OF PLACIAL IDENTITIES

In the previous section, I considered how intersubjectivity and practice knowledges give rise to spaces and places. This brings us to the subject of Section 2.3: the links between place, culture, and sense of self, how people anchor identities and relationships in their physical locations and renegotiate them as they are unsettled. Tuan, who was a migrant in his lifetime, preempts this discussion by noting how places provide us anchorage for our sense of self and history; they are "locations in which people have long memories, reaching back beyond the indelible impressions of their own individual childhoods to the common lores of bygone generations" (Tuan, 1979, p. 421).

Throughout the rest of this section, I consider how multilocal communities interrogate the relationship between identity and location, then highlight the lens of *translocality*, a view that sees human phenomena like economy, culture, and society as being both enmeshed in global flows and manifested in localised ways. Through the lens of translocality I then explore the importance of creative engagements for people living in such spatially liminal contexts in order to emplace their lives—that is, to re-situate their translocal realities in a sense of place.

2.3.1. Migrancy

The earliest scholarly understanding of multilocal identity centred around migrants, and for this thesis, migrant scholarship constitutes one of the richest bodies of knowledge from which it draws. Humans have migrated as long as they have existed, although the spatial and temporal scales of migration have grown massively (Diminescu, 2008). Prior to 1500 B.C.E., Austronesian migration spanned several continents, attested by the shared cultural and linguistic history of lands as distant as Madagascar and Easter Island (Bellwood, 2014, p. 199).

In early academic literature, the idea of migration was reliant on colonial precepts of state borders, whose policing invented the notion that movement across them was transgressive (Ahmed, 1999). As such, the migrant was first formulated in the scholarship as one who had permanently relocated from a home country to a host country (Lee, 1966). Such views usually conceived of migration Eurocentrically—that

is, as an influx to a European centre from its periphery (Greiner & Sakdapolrak, 2013; Massey, 1999; Peth, 2018). As it came to be understood ethnographically, migrancy was discussed as a placeless existence, in which individuals were dislocated, existing "in-between" states both literal and metaphorical (Diminescu, 2008; Greiner & Sakdapolrak, 2013). In this framework, migration was de-territorialisation, a spatial uprooting (Appadurai, 1995). Literature also frequently addressed migration in the past tense: a migrant is one who *has migrated*, and their relationships with past and present localities are only to be understood in terms how those relationships have ruptured.

The work of Appadurai (1995), Doreen Massey (1999), and Sara Ahmed (1999) proposed to trouble the centrality of the migrant's place of origin, which "binds the self to a given place" (Ahmed, 1999, p. 331), and reconfigured migrancy away from the notion of a European centre. What constitutes home is often ambiguous for those who have relocated during their lifetime. Using myself as an example, each place that I identify with—Singapore and Brisbane—feels like home when I am there, and attesting to this, I refer to both of these places as "home" and experience homesickness towards both localities. The literature reiterates this, with Ahmed et al. (2003), Ralph (2009), and Zulueta (2020) noting that the migrant often finds that "home" has ambiguous or overlapping definitions, or recognises a multiplicity of homes.

Migrant scholar Dana Diminescu (2008) argued an understanding in which the migrant is instead "connected". Rather than occupying a liminal state defined by ruptures, disconnection, and uprooting, she described migrants as mobile—in and of many places at once, maintaining continuities between their home and host localities. For Diminescu, migration was not simply a series of ruptures; it was also mapped in the *cultures of bonds* that crossed those ruptures: "Yesterday the motto was: immigrate and cut your roots; today it would be: circulate and keep in touch" (p. 568).

Diminescu's words were prescient of later shifts in inquiry about multilocal identities. As national borders grew increasingly permeable to interchanges of people, media, and goods, scholars have begun to contextualise migrancy in a broader global milieu of networks and flows: people, information and goods are always moving across distant localities. The umbrella term coined to describe these related phenomena is ***translocality***: that is, being identified with more than one locality at once. The next section outlines the core concepts of translocality, and its usefulness to the research interests and epistemologies of this thesis project.

2.3.2. Translocality

Translocality as a concept has its roots in the thinking of Arjun Appadurai, addressing the flows of people, goods, and information that manifest locally but are enmeshed within globality (Appadurai, 1995). Challenging the precepts of bounded populations and localities that had underpinned research and thought thus far, Appadurai proposed to recognise how locality is actively produced, rather than being inherent in the nature of space/place. Although the invention of national borders formalised the migrant as a demographic category, migration does not depend on their existence.

Avtar Brah develops this thinking into an understanding of multilocal lives which sees beyond the hegemony of national borders and discrete acts of transgression across them. Brah asserts that migrants and diaspora are "at once local and global" (1997, p. 196)—"local" in multiple places at once, and in constant transition across localities.

More recently, Greiner & Sakdapolrak (2013) have proposed that the "translocal" terminology supports a shift in our view of global phenomena away from the hegemony of national borders. It troubles dichotomies between the local and the global, and between home and host countries, bringing together the study of migration (transnational, intranational, rural–urban, and more), social-ecological systems, cultural moments, and other areas. Instead, translocality apprehends geography as interconnected, cross-influencing nodes, rather than in terms of boundaries or hierarchies.

Importantly, the term translocality describes not a static identity, but a host of interrelated phenomena where national borders and political institutions of citizenship are decentralised. There are no translocal *people*, but people can embody translocal dynamics in their lives, relationships, and practices. This is a useful framing instrument: translocality gives us a way to contemplate a spectrum of relational experiences that exist in complicated or ambiguous associations with locality, even when they do not include anyone permanently relocating to a different nation-state (as in past formulations of migrancy). For example, translocal inquiry would be interested in close relationships where geographical distance was not created by any member migrating (that is, they met and bonded online) because these relationships intersect distant cultures and embody a flow of ideas between different localities. The research can then focus on liminal, translocal conditions while remaining in dialogue with locality.

2.3.3. Translocal Relationships

The culture of bonds described by Diminescu (Section 2.3.1) can be seen as a first, early picture of translocal interpersonal relationality that does not erase the preeminence of place. Literature has noted a resonance between the idea of culture of bonds and the view of relationships-as-practice developed by David Morgan (1996). Morgan suggests that families may be conceptualised as suites of active maintenance and deepening practices, rather than static entities: that is, family is *done* as an active practice, rather simply *being*. When relationality is thought of as practice, it is released from the predicate of physical togetherness: a family can be sustained even when its members do not live together (Alinejad & Ponzanesi, 2020; Madianou, 2016).

Earlier, Appadurai (1995) has noted the role of technology in challenging and destabilising rigid notions of locality: advances in telecommunications, trade, and travel are facilitating greater flows people, capital, goods, and media across local borders, so that everyday social and cultural practices are increasingly imbricated by transnational influences. Such a coupling of technology with translocality is especially important when thinking about interpersonal relationships. Because we understand that the places we call home can be scaffolded by social, cognitive, and virtual fabrics (Section 2.2.1), relationships are also free to be defined in ecologies of long-distance technology-mediated practices (Janning et al., 2018). Tuan presciently notes that "the net of human concern does not require emotional anchoring in a particular locality for its strength" (Tuan, 1979, p. 417), raising the example of nomadic communities whose sense of home is anchored in portable possessions. This view is a useful starting point for contemplating themes of place in those relationships where placial anchorage and a sense of shared living (Neustaedter & Greenberg, 2013) are established through networked technologies.

In this research project, I was curious about precisely those networked relationship practices, as sites of emplacement where most others conventionally perceive placelessness, and as microcosms of translocal flows between distant localities. Through a translocal view of space/place, there was an opportunity to consider the role of digital technologies in the spatial practices and action knowledges that produce translocal places. Just as de Certeau's walker knows the city by navigating its streets, one who practices placemaking over a distance does so by traversing hybrid spaces formed out of physical, mental, digital, and other layers. Whether that "moving" involves physical transits (as with a migrant), or reciprocal

mental and emotional translocation via networked technologies, each translocal dweller enacts a knowledge of place spanning multiple cultural contexts and histories. At the same time, they negotiate the internal laws defining the realities within which they dwell and deepen their relationships.

2.3.4. The Enduring Importance of Locality

While translocality promises a framework for inquiring into places that transcend physically bounded localities—this is the *trans-* part of the term—it also emphasises the importance of *-locality*. That locality is produced does not render it meaningless; the nature of our relational existence within our corporeal societies is that locality is inscribed on our bodies (Appadurai, 1995) in the form of names, language, cultural memory, and so on. People who relocate from one locality to another bring those inscriptions with them in the form of practice memories—embodied memories of everyday action and sociocultural norms—entangling with their host culture's own localising forces. These people have been seen to configure their new living spaces to resolve or reconcile the incongruous cultural realities within their lives (Maller & Strengers, 2013; Sabie et al., 2020), their bodies themselves becoming the sites of translocal confluence.

Following Sara Ahmed (1999), it is important to remember that living translocally is not the same as migrancy, as the latter is mapped in historical precedent rather than theoretical work. Locality, in practice, continues to be produced through stable, discrete frameworks by political entities and societies. In Australia, for instance, it is common to refer to members of the naturalised Chinese diaspora as "Chinese-Australian" to distinguish them from the Chinese people living in Australia on a (legally and bureaucratically) temporary basis, delineating concentric circles of inclusion. Translocal lives lie at odd angles with border laws, which police the passage of individuals based on country of citizenship—a fact distinctly highlighted by the mass displacement of internationals due to Australia's COVID-19 border controls (Ali et al., 2022) and Scott Morrison's declaration that they should "go home" (Gibson & Moran, 2020). The local public, too, often considers migrants and naturalised diaspora as a homogenously foreign other, as illustrated by racial hate crimes enacted on individuals based on their racial(ised) features (Cheng et al., 2021, p. 629).

Therefore, while traditional conceptions of home and locality are challenged by the translocal lens, locality and the ways it is produced and policed still scaffold our relations with translocal phenomena and places. Even thinking translocally, inquiry

should not too hastily dissolve the local subject, nor equate the displacement of translocal relationality with physical and cultural uprooting and re-grounding.

As new means of mediated placemaking and relationship maintenance emerge, translocality becomes an increasingly useful concept for contemplating how place is unsettled and renegotiated in mediated relational situations, even for those who have not physically relocated. This includes not only migrants, but also their families, and people physically separated in other ways. In that sense, "translocal spaces are constantly co-produced by mobile and immobile populations" (Greiner & Sakdapolrak, 2013, p. 376): the migration of a child, partner, or parent away from one also, to some degree, dislocates oneself. Additionally, it considers those whose relationships *began* in a state of physical distance (such as partners who met online) to have salient experiences. For this thesis' design work, the causes of physical separation are less central than the relational impacts and the practices of translocal bonding that emerge within such contexts.

Approaching locality, dislocation, and "home" through a view where places can relate across geographically distant locales paves the way for this research project's focus on creative practices as tactics for negotiating a translocal sense of place. The following section explores the scholarship to paint a picture of how creative works have supported—and continue to support—translocal communities in making sense of the complications of place in which they live.

2.3.5. Creative Engagements with Translocality

The literature has extensively recognised that the arts form an important set of strategies among translocal communities for negotiating their identities within the intersections of the localities and cultures that they occupy (Mattheis, 2021; L. Smith et al., 2011). Boon (2020) explores how a translocal approach to understanding the arts recognises that one's locality can be "the locus of global movements and worldwide networks" (p. 4), and that local art and cultural movements may be oriented beyond their localities without being dislodged from them. Art can be identified as being of the locality where it was made while also engaging with international dynamics and the interplay of relations between the local and the global. Translocal communities create and perform art as an "active and adaptive force" (L. Smith et al., 2011, p. 2) by which to continuously locate and re(-)locate their relationships amidst the range of cultures and places to which they "are local".

Here, it becomes useful to contextualise my personal practice—which engages with migrancy and translocality—in the existing body of art on the same subjects. The following works often speak to similar conditions to those in which I live, and form core creative influences for my creative practice. Among those most fundamentally influential is scholar Maxine Hong-Kingston's (1976) "No Name Woman", an essay from her collection *The Woman Warrior* which explores her experiences as a Chinese-American immigrant caught in the turbulence of cultural transition. She compares how her dishonoured aunt's name was stripped from her to how Chinese immigrants changed their names when they migrated to the United States, both intentionally and inadvertently obscuring their past selves in nameless anonymity. In that way, Hong-Kingston examines names and language as the anchors of one's place and history, and the loss of one's name as a form of dislocation, connecting these ideas as she describes here:

> The emigrants confused the gods by diverting their curses, misleading them with crooked streets and false names. They must try to confuse their offspring as well, who, I suppose, threaten them in similar ways—always trying to get things straight, always trying to name the unspeakable. The Chinese I know hide their names; sojourners take new names when their lives change and guard their real names with silence. (Hong-Kingston, 1976, p. 3)

Hong-Kingston's writing visualises the grief of those displaced: more than simply leaving a familiar geographical place, one is also dislodged from one's *social* place—from known to unknown, at least at the moment of severance. When I moved to Australia, my Chinese name, too, disappeared from use. Hong-Kingston draws out a parallelism between ghosts and the unnamed: the haunting of her displaced aunt is likened to the dislocated histories of Chinese immigrants fighting to find their place in an estranging, xenophobic society.

There is resonance between this work and another that has been influential to my practice: Shaun Tan's graphic novel, *The Arrival* (2007). This graphic novel follows the life of a migrant who departs his homeland for an unfamiliar country whose native language he does not speak. Tan draws the reader into the protagonist's disorientation by rendering all text in this novel as unintelligible characters, instead conveying the story entirely in imagery and gestures (Figure 2.1). But the thematic ostinato of *The Arrival*, whose Australia-based author is the son of Malaysian and Irish immigrants

(AustLit, 2021), is that all residents of Australia who are not Indigenous came to these lands from somewhere else. Tan consolidates Australian cities' identities as patchworks of cultures, despite efforts to distance them from their immigrant histories.

Figure 2.1

Street Life, *from* The Arrival

Note. From *The Arrival* (Illustrated edition), by S. Tan, 2007, pp. 44–45, Arthur A. Levine Books.

Using language as an anchor-point for one's sense of place, this novel depicts how the dislocation of migrancy confounds one's comprehension of the world in tacit ways. The term "disorientation" itself indicates an analogy between physical and psychological displacement: to be removed from one's geographical markers and sense of place is also to be removed from one's social orientation, which was formed from birth (Tuan, 1979). When that is lost, one must reorient oneself within the world from the ground up.

In relation to the themes explored by the above works, Tuan weaves an intricate thread throughout *Space and Place*, establishing self and place as concentric: self is the centre of one's sense of place, and place the centre of one's sense of self. Tuan draws

an analogy between one's physical and social location: one's "place" is not simply where one is in three dimensions, but also who one is in relation to society:

> The infant's place is the crib; the child's place is the playroom; the social distance between the chairman of the board and myself is as evident in the places we sit at the banquet table as in the places we domicile; the Jones's live on the wrong side of the tracks because of their low socio-economic position; prestige industries requiring skilled workers are located at different places from lowly industries manned by unskilled labour. (Tuan, 1979, p. 409)

Tuan writes of homesickness, correspondingly, as the unsettling of one's sense of self through the loss of one's sense of place. It is not reckoned through rationalist qualities of space, but instead known and felt: "that earth is our place in the universe is a simple fact of observation to homesick astronauts" (Tuan, 1979, p. 421). It is a "simple" attestation that we can intuitively sense when we are out of place. Like the practice knowledge of the wayfarer who knows space/place through the act of moving, homesickness is also a tacit way of knowing place and displacement.

As noted in Chapter 2.3.3, technology has had a crucial role in sustaining such translocal lives and relationships—and indeed in making them possible at all. Today, relationships implicated by distance have access to a much wider suite of technologies than two decades ago (Madianou, 2014). In this regard, research about migrant experiences offers important precedent for extending such thinking towards other kinds of translocal sociality. The next section explores literature on technology and relationality in more detail.

2.4 MEDIA AND TECHNOLOGY—DEFINITIONS

As previously noted, Appadurai (1995) has underscored the foundational role of trade, travel, and communications technologies in rendering local borders increasingly permeable to translocal phenomena. Far from being neutral ground, technologies are instruments contrived and designed with intent. This fact reiterates my thesis project's focus on interaction design research, which can stand to greatly improve the lived realities of translocal communicators.

I have so far discussed technology in relationships in a general sense. In this section, I clarify the term technology, outlining the kinds of technologies relevant to this thesis which are themselves determined by the epistemological lenses I

contemplate them through. Here, I refine the scope of the research with definitions of technology, mediation, and networks. I also consider how technologies mediate and transform experiences and practices—not just in terms of altering the available tools, but in shaping the very nature of being and dwelling in cyberspace by setting up internal laws and logics.

2.4.1. Technology

The term "technology", which comes from the Greek *tekhnologia*, once referred to the study of mechanical arts, including spinning, weaving, and metalworking (D. Harper, n.d.). In common, modern use, "technology" often refers to the practical application of scientific knowledge towards invention, and the products of such invention. In the context of mediated translocal spaces, technology may include inventions as old as the letter and the postal system, the most widely used mediators of long-distance relationships well into the late twentieth century (Haggis & Holmes, 2011).

Yet the distinction between the letter and the text message is marked by a drastically altered time scale on which communication is transmitted and received, which in turn has shaped the nature of the message's content. Letters, whose construction and delivery combined often take weeks, would strive to capture as much information as possible, while the ephemerality and ubiquity of text messaging have resulted in far briefer messages and, sometimes, the "obligation" of an immediate response (Haggis & Holmes, 2011, p. 174).

This thesis project is interested in the technologies that can mediate the cultivation of places in the course of a relationship's practices, through which we can contrive some kind of *mediated placemaking*. While this project takes a primary interest in virtual technologies—where my design practice is centred—it is important to emphasise that the use of "slower" communication technologies, like letter writing, is often intertwined with instantaneous communication practices (Alinejad, 2019). In the next few sections, I define the scope of technologies of interest to this project and examine related terminology.

2.4.2. Media and Mediation

The term "mediation", as described by Bruno Latour (1994), aims to deconstruct Heidegger's (2013, p. 19) idea that humans are "set upon" by technology to construct things with little agency or mastery in the relation. Latour outlines mediation as

"translation" (1994, p. 32)—the creation of connections between agents that alters the valency of every participant to the situation: a gun in the hands of a person may alter their intention from injury to murder, and the human applies their will to the latent affordances of the gun, altering it into an enactor of murder. The term "mediation" refers to this very alteration of the relationship between human and nonhuman actors, which gathers the two into a "hybrid actor".

To understand translocal placemaking, it is useful to study the kinds of hybrid actors gathered by the construction of space/place, comprised of both users and networked technologies. When we examine mediated relationship practices, we understand that the medium is as much an active participant in the relation as the human actors. It is not supreme, nor merely a tool that perfectly brings forth a user's will.

Broadly, technology-mediated relationship practices can invoke a range of practices as different as sending physical letters through the postal system and meeting in VR via the embodiment of avatars. What these have in common is that the physical technologies mediating these practices—the artefacts—are contrived through intentional design. Where there are relationship practices there must be places (Section 2.2.1); for *this* research, I am interested in how relationship practices (space/place constituted relationally as intimate, secret nodes of attachment and familiarity) intersect with translocality (space/place as an entanglement of local and global phenomena), which gather both humans and the mediating technologies into hybrid actors.

To define the kinds of technologies this thesis is interested in, I return to the idea of space/place as practices. Space comes into being through movement; to become space, the technology must permit moving through and across the medium. *Physical* translocation is not required in that sense of "movement". The interpretation of text is characterised as movement, threaded between text and context across many iterations (Section 2.2.2). Conversely, the scientist who takes an airplane ride between isolated sites across a continent is not traversing the continent so much as being "dropped down" at fixed points across it, despite their body having moved (Ingold, 2013, p. 40).

Place comes about through dwelling and bottom-up spatial practices. To allow for placemaking, the technology needs to provide a spatial medium that supports configuration and anchorage. After all, placemaking is (phenomenologically speaking)

the interweaving of physical artefacts in a habit field, or a field of care (Tuan, 1979). Those artefacts need to lend themselves to cultivation in intersubjective ways—namely, to be perceptible, to persist, and to be alterable, for more than one person at once—so that they may anchor networks of relational attachments. These are the kinds of technologies that this thesis is interested in: navigable, co-configurable, and thereby allow for the cultivation of place. A single text message may not be enough to host a place, but a history of text messages, where ideas and configurative alterations can be co-developed, may serve that function.

2.4.3. Networked Technologies

It is useful here to define and distinguish a few terms that refer to different subsets of technologies. So far, I have referred to the technologies of interest as "networked technologies" as well as, occasionally, "ICTs".

The term ICT (information and communication technologies) extends the pre-existing "information technologies" to describe the unification of telephone, cable, and computer networks into architectures where all three may intercommunicate (Murray, 2017). By a literal reading, ICTs have also been described as "a combination of technological tools and resources that are used to manipulate and [communicate] information" (Kaware & Sain, 2015, p. 27) or as "all technical means used to handle information and aid communication" (Eurostat, n.d.).

The exact boundaries for what are considered to be ICTs differ across various fields, but they often include phones, pagers, tablets, computers, wireless devices, computer network devices, cell towers, and satellites (Zuppo, 2012). In some cases, ICTs are considered not to include AM/FM radio (Girard, 2003; Zuppo, 2012), while in others, the telegraph has been referred to as an ICT (Juhász & Steinwender, 2018). Beyond technical classifications, ICTs have also been described in terms of their aptness to redefine community networks beyond geographical boundaries (Nassanga et al., 2013). At least in some incarnations, "ICT" seems to denote a reciprocity in communications: they make available the bidirectional interchange of information through data transmissions, which excludes AM/FM radio and includes the telegraph.

However, for the purposes of this research, I will proceed to refine that scope further. As discussed in the previous section, for there to be space and place, there must be something resembling movement, as well as some persistent, co-configurable anchorage that may embody networks of relational attachments. This project is therefore interested in ICTs as mediators of space/place, especially in contexts where

they are the only available means for relationship deepening. This does not include nor exclude any *specific* technologies but describes how they matter to this project. This scope also asks for a view of ICTs that is less focused on the action of individual technologies, and more on the meshwork of spatial, placial, social, and cultural contexts in which they are situated. As later sections of this thesis (Chapter 6) will explore, both a polymedia view (Madianou & Miller, 2013) and a communicative ecology view (Hearn & Foth, 2007) are useful ways of thinking about technology-mediated placemaking as interdependent, contextualised practices overlapping many spaces and places, both mediated and physical.

From the above concerns, I derive the term "networked technologies" to speak to the network view that connects my approaches to space/place, translocality, relationship practices, and ICTs. It superimposes the conceptual networks of sociality and place-attachments on the physical and structural networks of ICTs via the theme of mediated translocal placemaking.

Finally, the term "virtual", as in "virtual placemaking", is also intertwined with networked technologies. Rather than the narrower typologies of virtual *worlds*, which specify realistic representations of space and users' explicit embodiment within them (Girvan, 2018), "virtual" is used in the more conventional sense of "done using computer technology over the internet [and other networked technologies], and not involving people physically going somewhere" (Cambridge University Press & Assessment, 2025). *Virtual mediation* then encompasses not only the kinds of spaces, places, and relationships that are enacted "within" networked technologies (as in VR video games), but also those fundamentally structured and transformed by the mediating networks.

Having defined and scoped the key concepts living in the intersections of space/place and technology, the next section outlines some key theories relating to technology mediated places from a range of fields, locating this project in the relevant academic and techno-cultural contexts.

2.5 NETWORKED PLACENESS

More than metaphor, there is a spatiality encoded in the structures, interfaces, and interactional nature by which we engage with the internet. This has been particularly so as the Open Systems Interconnection (OSI) standard and hypertext markup language (HTML) have become adopted worldwide, proliferating a nodal

structure resembling the network of relations that make up geographical space. From the first instance, the network devices that carry data across the internet are dispersed across physical geography, each located via a unique "address". This lends to the oft-used analogy of the postal system to describe the transmission of data across internetworks (Odom, 2020, p. 269).

But this spatiality does not have to rely on physical geography: we see a parallel structure among websites which, unlike servers, are not mapped to single geographical locations—Google's operations are hosted by 33 data centres across the world (Google, n.d.). Website domain names are also called *addresses*, and clicking on a hyperlink to *navigate* from one page to another involves looking up the resource denoted by the address, then transferring the user to the new *site*, which updates the view in their *browser*, effectively enacting a traversal between locations. Even the webpage itself, as well as many cloud-based phone applications, are typically scrolled in two dimensions, with the page not all visible at once. Even browsing a singular webpage in the network often takes on a navigational quality.

Traversal between webpages does not usually involve translocation of the body, only the actions needed to manipulate the computing device. Even then, like the reading of a text, these transits are often characterised in motional terms—"browsing", "surfing", "hopping" (movement of a data packet between routers), and so on. We find congruence between these actions and the nature of movement when considering movement phenomenologically—as the practice of threading paths across a medium among experiential nodes.

Aarseth (1997) theorised on a hermeneutics of cyberliterature and -games that draws out the movement-like nature of exploring the internet. He describes *cybertexts* as ergodic literature—in which traversing the text requires effort from the reader, and where the effort of traversal forms part of its interpretative richness. Hypertext or hyperlink-based interfaces, proliferating in tandem with the HTML standard across the internet, allow for the creation of narrative media that, like some mazes, have multiple paths of traversal. These works contain multiple mutually exclusive routes of traversal and therefore can only be explored in full through multiple readings or a repeated retracing of steps.

Aarseth is not the only scholar who has considered hypertext through parallels between physical space and the paradigms of the web medium. Scott McCloud (2000, p. 222) notes the potential for the webpage to house a storytelling artefact that

stretches “as wide as Europe or as tall as a mountain” owing to the fact that a webpage may be functionally limitless in size. The viewer’s monitor becomes a window through which this “infinite canvas” (McCloud, 2000, p. 222) is viewed.

The above examples illustrate just a few ways that internet technologies mediate a space-like experience of material artefacts. Whereas the physical city is built upon a natural terrain and constituted by buildings containing rooms connected by streets, virtual space is made up of servers housing webpages and rich media files (such as images and video) connected by hyperlinks. Both are navigated from the ground by denizens who do not perceive the entirety of the network at any one time. Taken in combination with my earlier consideration of mediated space/place (Section 2.4.2), there is a rich opportunity to explore how space/place is practised in the hypertext realm, not only in the abstract but in apprehensions of discrete actions and practices.

2.5.1. Together Online: How Technology Makes Place

Since as early as 2001, research has recognised the “place-ness” of social networks mediated by the internet. Barry Wellman’s (2001) “Physical Place and Cyberplace” acknowledges that the communities formed in “cyberplaces” are analogous to physical communities, stitched together by practices of gathering, belonging, and relationship maintenance. Yet Wellman also notes how cyberplaces have evolved their own internal logics, mediated by the growing capabilities of the underlying technology. Improving networking standards and increasing bandwidth have led to ever-higher fidelity in long-distance communications, which in turn afford a wider and richer range of communication methods. Previously centred around telephonic voice communication, the introduction of the internet has added text, images, video communications, and even narrative and ludic gestures to mediated relationship practices, as seen in postcards in *Pokémon Go* and geotagged narratives in Snapchat (Cramer et al., 2011).

In 2001, Wellman suggested that online social networks took on a “place-to-place” structure—as ad hoc connections between physical spaces, in particular “the home or the office” (Wellman, 2001, p. 236). In this formulation, physical places were preeminent, and internet connections served as channels for maintaining interpersonal relationships that had already existed outside it.

In the 2020s, this is no longer the case. At the time of writing, over 5.28 billion people own smartphones (A. Turner, 2025), and almost two-thirds of the global population have access to the internet (Petrosyan, 2024). It is common for

relationships and communities to be established across internet-mediated connections, without any face-to-face contact (Oksanen et al., 2024). In tandem with the above evolutions, there is increasing critical interest in how human communities are being shaped by this always-connected paradigm of wireless networks (Gordon & de Souza e Silva, 2011), from critiques of our loss of agency over our biodata (Y. Rogers, 2006) to observations on ad hoc social organisation scaffolded by such technologies (Rheingold, 2003).

Condensing physical and geographical barriers in long-distance communication, technologies connected via the internet continue to change our perception and experience of space in mediated relationships (Clarke, 2020), allowing us to communicate with spatially and temporally distant people as if in the same room (Farman, 2020; Willis et al., 2007). In the "always-on" paradigm of ubiquitous computing, ICTs can act as persistent spaces shared by social groups, creating a sense of "ambient co-presence" amongst distant communicators (Madianou, 2016, p. 198). As networked communication technologies have advanced, that sense of mediated co-presence has grown richer: whereas we once communicated through text and voice alone, we can now participate in group audiovisual livestreams of physical settings, with devices acting as tunnels between distant physical spaces.

Within a singular locality, too, the advances of GPS and portable mapping technologies have supported a sense of co-presence amid *temporal* distance. Through a persistent alterable map interface, places can be tagged with experiences fixed in time. This happens in the game *Ingress* (Niantic, Inc., 2013), where one can see years-old geotagged photographs of landmarks as one walks past while playing the game, some of them containing objects that have since been removed. Increasingly, it seems we are always in many places and times at once: mentally and sensorily, we experience distant localities through data streams and instantaneous communications, while physically, we navigate space as a layered fabric of physical and virtual materialities.

It is the technological re-constitutions of movement and communication described above that have produced a fertile ground for translocal flows of people, information, and consequently relationships (Section 2.3.3). Such virtually mediated relationship practices were first experienced by migrant families, who sustained bonds with each other and negotiated connections with their host countries through ICTs (Alinejad, 2019; Diminescu, 2008; Katz, 2010). Though previously studied as a migrant concern, virtually mediated relationships have become a subject of interest among an

ever-broadening community, with friends, romantic partners, and separated families initiating their bonds online (Hassenzahl et al., 2012; Janning et al., 2018; Kolozsvari, 2015).

Herein, there emerges an opportunity to research interpersonal relationships scaffolded by technologies in a translocal pattern. Doing so allows for a finer understanding of the places being made, and of how the logics of virtual mediation alter the spaces and places being formed.

2.5.2. Virtual Spaces as Cities

In past research, virtual places and spaces—particularly video games—have been observed to be similar to cities: both are designed, ecosystemic spaces that mediate daily practices of living and interactions among a diversity of people (Álvarez & Duarte, 2018). The parallel can be extended: both cities and virtual spaces/places play host to the traversals of many people in proximity to each other. The two bring into contact, entangle, and often generate friction between the contradictory practices and knowledges that guide the dwellers' navigational and spatial behaviours.

In effect, these places form a pluriverse—many ways of being in virtual space that may be foundationally different, even contradicting one another, together forming a heterogenous fabric of experiences that are nevertheless entangled with each other (Escobar, 2018). Importantly, experiences of space and place are always being intersubjectively negotiated with other dwellers with whom we share those spaces, whether physical or virtual (Section 2.2.3). Although virtual placemaking practices can take place in spaces ranging from completely public to intimately private, these practices are never isolated, but cross-influence each other, both by occupying related or shared spaces, and through the linkages of communal and cultural learning.

Considered in this way, translocal places resemble cities in a ground-level social and experiential sense. Urban studies thus bring many salient frameworks and techniques for approaching the study of virtual space and place, as emphasised by Publication 5: "Mapping Transplaces" (Chapter 8).

Most importantly to this research, we can understand both urban space and virtual space as being structured by interactions and frictions between the top-down hegemonic interests of (urban/web) developers and the bottom-up priorities of the dwellers (denizens/netizens). This is not just allegorical: with the proliferous corporatisation of web applications by Google, Meta, and Amazon et al. under platform

capitalism (Srnicek, 2017) and the enactment of governmental legal control over the internet via censorship policies, hegemonic bodies are harnessing the rhizomatic internet as "a striated space determined by corporate and State interests" (Beck, 2016, p. 346). This mirrors the ways that geography, not subdivided in its primordial fact, has been parcelled and controlled under government ordained property law (D. Rogers, 2024).

It is the above counterpoint of interests that Tuan gestures at with his typology of public symbols (locations that are made into places through top-down imposition of landmarks) and fields of care (places developed from the bottom-up through the everyday practices of dweller communities). Public symbols and fields of care are also apt to describe the structure of the internet, following on Beck's (2016) view: there are cyberplaces cultivated by dwellers, and there are those established by hegemonic bodies; both often exist in close quarters or intersect.

2.5.3. The (Post)Phenomenology of Virtual Worlds

Despite the structural congruencies of physical and virtual spaces, there are elements of virtual mediation that fundamentally transform the nature of space and the experience of place. The clearest and most obtrusive distinction is that technology-mediated places do not map one-to-one with one's corporeal existence. Being in virtual space—argue Hardesty and Sheredos (2019)—entails multilayered and multilocal ways of being: one can be present in a corporeal location while sensorily or attentionally inhabiting multiple others, from a video-game world to concurrent layers of text-based or voice-based interaction with others. The authors emphasise how a continuous sense of self must be negotiated across different virtual worlds as well as in the corporeal world, revealing the mutual porosity of these worldly layers.

Beyond considering technologies as sites of subjective phenomena, which is the phenomenological view, Hardesty and Sheredos invoke a *post*phenomenology of virtual worlds: recentring the relation between bodies and technologies as co-producers of the experience of place (Ihde, 1993; Richardson & Wilken, 2012). Technologies are more than passive channels: the intersect the senses of the body in ways that differ across time, space and culture.

Madianou (2018) studies the social complications of such technology-mediated togetherness among families that meet and bond in virtual environments. She notes that in migrant family life, virtual media becomes the experiential location of family practices, and one's digital presence also becomes one's tangible form to distant family

members, constituted from one's digital traces such as message threads and social media posts (Madianou, 2018, p. 17). Madianou's view emphasises the persistence and tangibility of those digital traces: much like the memory and configurability of physical dwellings (Brand, 1995; Sabie et al., 2020), the persisting trail of interactions is the substrate on which digital dwellings form.

2.5.4. A Pandemic Interlude

During the COVID-19 pandemic, the logics of virtual space and place became well-known to the broader public. In lieu of physical interaction, the internet played host to sites of co-presence and relationship practices (Akarturk, 2020; Kerdvibulvech, 2022; Pearce et al., 2022), while ICTs became a connective tissue that supported remote work, retail interactions, and socialising in the absence of face-to-face interactions (Akarturk, 2020; Feldmann et al., 2021; Nguyen, Armoogum et al., 2021; Nguyen, Gruber et al., 2020). In effect, social interactions were being re-emplaced in virtual spaces (Rzeszewski & Evans, 2020).

For migrants and travellers rendered immobile by border closures, virtual space became their central connective space with family, partners, and friends. Virtual connection in the midst of dislocation became a shared experience, regardless of migrancy status, and "trust, connection, engagement and care" (G. Bell, 2021, p. 82) emerged as strident themes in media related to surmounting the crisis. One project, *Covid Connect* (Collins et al., 2022), aimed to foster connectivity amid isolation by presenting a canvas of anonymous user-submitted stories about the pandemic and inviting users to tell their stories and respond to those already shared. Yet other works strove not to replace the physical, but to augment physical spaces through a digital layer, and thereby support placial connection without physical contact: Libby Clarke (2020) surveys three works of location-based "collaborative cartography", each intertwining biographical stories with the landscape of various Australian towns through GPS-capable smartphones (described in greater detail in Section 2.7.1).

The pandemic was, in effect, a cultural moment of translocality during isolation, wherein many individuals embodied cross-border information flows—following global news updates, communicating with those near and far through networked technologies, and participating in global activist movements online (Gallicano et al., 2023; Langdon, 2022; Silverstein, 2021). The ongoing digital revolution, as it was touted in a 2018 *Nature* supplement (Hodson, 2018), was accelerated by these pandemic conditions.

While the COVID-19 pandemic lockdowns are long past at the time of writing, the event brought about a revitalisation of research into mediated space and place, which has long been—and will continue to be—an area of critical importance to those who are physically distant from their social networks and who continue to sustain relationships translocally. This thesis project signifies an effort to bring that growing interest in internet-mediated communication to researching the prevailing concerns of translocal relationality.

2.6 MAPPING: VISUALISING SPACE AND PLACE

Having outlined several views of space, place and technology in the context of this thesis' research interest, this section considers diverse traditions in the representation of, and communication about, place and (trans)locality. In doing so, it reconnects the theoretical frameworks of the past few theoretical discussions with the practical context of the disciplines of visual arts and interaction design, via the diverse, transdisciplinary traditions of mapping.

2.6.1. Mapping—Definitions

In 1961, Jasper Johns painted *Map* (Figure 2.2), a work that aims to facilitate viewers in "knowing" the map of the United States rather than simply "seeing it out of the corner of [one's] eye" (MoMA, 2007). Rendering the 48 contiguous states in expressive strokes that blend borders and merge land into sea, *Map* disrupts familiarity and challenges the viewer to critically reinspect the static, habituated icon of the United States map.

Figure 2.2

Map *by Jasper Johns*

Note. From Johns, J. (1961). *Map.* [Encaustic, oil, and collage.] https://en.wikipedia.org/wiki/File:Jasper_Johns%27s_%27Map%27,_1961.jpg.

Broadly speaking, mapping is the practice of representing large, complex organisations of things in readable formats that can be more easily grasped. Most commonly, mapping is applied to the representation of physical geography, where landforms, settlements, and bodies of water are condensed into visual diagrams so that their locations and relations to each other may be more easily understood.

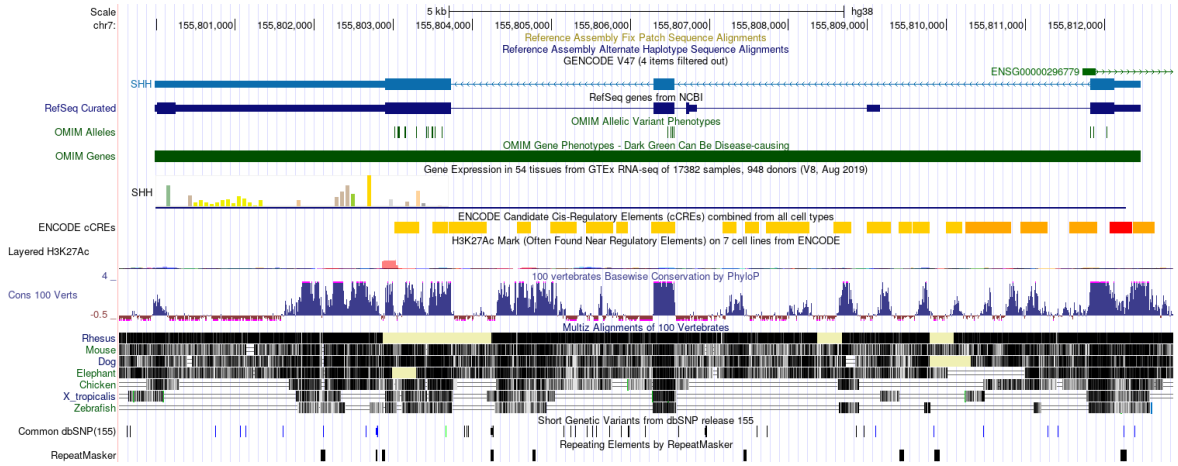
In the short story "Of Exactitude in Science", Borges (1975, p. 131) describes a map of an empire "that was of the same Scale as the Empire and that coincided with it point for point." Because it exactly represented the empire, the map was uselessly cumbersome and was discarded, along with the science of geography. In the interest of brevity and usability, most maps must favour some information while omitting other data, and favour some accuracies at the expense of others. Because they must always omit something, maps come to embody projections not only of space, but also of ways of seeing the world—ways of orientating oneself in geographical, relational, and sociocultural dimensions.

Although most widely referring to geographical maps, the term "map" and its derivatives do not refer only to methods of representing geography. In the broadest definition, the verb "to map" can refer to representing how the parts of something relate to each other—whether physically arranged like landforms, interconnected by data channels like routers on a network, or conceptually interlinked like ideas and concepts. A map is a representational document that results from mapping. Often,

these are visual diagrams. In others—especially with complex arrangements of elements, like the genes in a genome (Figure 2.3)—the thing being mapped must be represented in more than three dimensions, demanding an interactive representation.

Figure 2.3

A Gene Map from the Human Genome Browser



Note. Screen capture by the author, from http://genome.ucsc.edu.

In all these instances, mapping is the representation of networks of interlinked things. Even a genome is a network of interactions and synergies (Van Steen, 2012), and its genes are implicated in genealogies of analogous sequences across different species. The genome is a kind of space, interlinked by biological relations and recording a history of mutations. Like space, its true nature is practised, interpreted by the body's enzymes into manufacturing the machinery of the cell.

I explore the above anecdote to underscore that "mapping", "maps", and even "spaces" are not shackled to the geographical senses of the terms, even in common parlance. Mapping is apt to describe the mapping of the genome and other systems, too: it is the static projection of a dynamic system into a manageable, approachable form, by simplifying it to what is salient to the mapper and the map's intended viewer.

2.6.2. Mapping the Self

Beyond the material facets, mapping is a practice of comprehension, thematic connection, and retelling. To Stephen Hall (2003), these mapping processes occur wholly in the mind, needing no tangible form. He describes "personal atlas[es]" of internal maps that capture "landscapes of memory and experience and knowledge . . . coloured according to a personal legend corresponding to the elevation and

depressions of . . . private humours" (Hall, 2003, pp. 8–9). As the discussion of place and experience in Section 2.2.1 has underscored, the mapping of experience and the mapping of geographies are extensions of the same practice. Tuan (1979, p. 409) draws a direct connection between these interpretations of self and space:

> A central theme in this survey of space is the bond between space and the human existential: body implicates space; spatial measures are derived from dimensions of the body; spatial qualities characterised as static, dynamic and affective, patent and latent, high and low, near and far are clearly called into being by the human presence; depth and distance are a function of the human sense of purpose and adequacy; "crowdedness" is less an expression of density than a psychological condition.

All mapping, then, is about clarifying the subjective valencies of spaces and places—of ways of perceiving them and being in them, whether intentionally or not (J. Turner & Taboada, 2020). In discerning what to reveal and what to omit, the cartographer consolidates the self in the map (Abrams & Hall, 2006), manifesting their paradigms for apprehending space/place, and what is important or relevant about it.

For instance, the *Mappa Mundi* by Fra Mauro (1459) which documents the part of the world known to Western Europeans at the time (Ziereis Faksimiles, n.d.), shows Europe in precise detail while compressing Africa and East Asia (Figure 2.4). Because Africa had not yet been circumnavigated by Europeans, the continent was drawn with an imaginary coastline truncating it south of the Horn of Africa. Likewise, in maps depicting Ming Dynasty China (Figure 2.5), the cities of China were drawn and labelled, while neighbouring nations such as Japan and Korea were shrunk and condensed in red. Along with their depictions of space, these maps also depicted frames of view: what is important enough to render in detail or insignificant enough to be omitted.

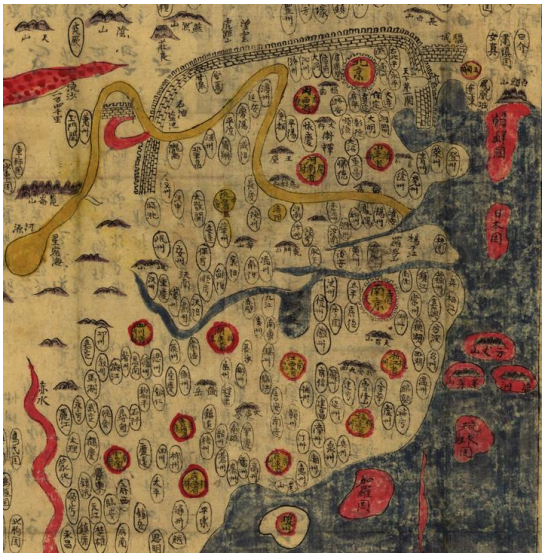
Figure 2.4

The Fra Mauro Mappa Mundi

Note. From Fra Mauro. (1459). *Mappa Mundi*. [Paint on vellum.] https://en.wikipedia.org/wiki/Fra_Mauro#/media/File:FraMauroDetailedMapInverted.jpg

Figure 2.5

Map of Ming Dynasty China and Neighbours, Circa 1800



Note. From *Cheonhado [Map of All Under Heaven]* (1800). [Pen and ink, watercolour.] https://lccn.loc.gov/93684246.

In Europe, when colonial expeditions saw ships sailing out of sight of land in great numbers (Vis, 2018), maps devised with mathematically projections superseded earlier cartographic traditions. By "exactly" representing space, these maps purported objective, rationalist factuality (Tuan, 1979, p. 387), yet they were no less produced

by the frameworks of reality that the cartographers operated in. The Mercator projection, first devised in 1569, allowed navigators to chart a single unchanging bearing to sail on by drawing a straight line between origin and destination (Vis, 2018). This simplified and expedited voyages from Europe to colonised lands across oceans.

Literally speaking, the Mercator projection distorts space in a way that exaggerates the size of landmasses near the poles and contracts those near the equator, making countries in Europe and North America appear much larger than ones in South Asia and Africa (Dourish, 2006b). The Mercator map became widely used *because* it expedited transport to and from colonised lands, and the sacrifice of proportional accuracy allowed for colonial projects to proceed with as little navigational impedance as possible. Similar mathematics-based maps by European surveyors have been implicated in the apportioning and selling of colonised land under a property-centred view (Sletto, 2020).

Traditions of mapping have evolved along with technology, as have the ways citizens relate to visual representations of space. As cartographic computing programmes have become accessible to the public, viewing, interacting with, and creating personal maps have become common in daily life (Caquard et al., 2009). Yet such maps have also propagated mathematically based spatial representation in a way that now informs geographical perceptions on a larger scale. Most GPS and web-based maps use the Web Mercator projection because it preserves directional consistency when panning across the map, thereby reproducing the Mercator's distortions on popular platforms like Google Maps and OpenStreetMaps (Battersby et al., 2014).

Those risks persist even among more subversive forms of mapping. In a bio-mapping project titled *Emotional Cartography*, Christian Nold (2009) combined GPS with body tracking devices worn on walkers' bodies to create "emotion maps" of neighbourhoods. This project revealed the diversity of ways in which participants experienced and interpreted emotional "spikes" along their walking routes, from stressful events to emotional associations. When interpreting meaning in the data, notes Nold in a book reflecting on the project, the depths and nuances of walkers' experiences while moving were opaque to the researcher, and interpretation necessarily had to centre the participants' interpretations of their own biodata. Authors within the edited volume caution about the potential for these bio-mapping instruments to be appropriated as tools of control, risking turning the body into "a territory, the mapping of which would be the first step in its governance, and in the

subjugation of its boundaries to regulation and control" (Raqs Media Collective, 2009, p. 16). Even while subverting mapping tools for interpretivist aims, emotional mapping illustrates the importance of on-the-ground perspective that essentially cannot be signified by the map-form.

Altogether, maps—like other forms of data—are at risk of becoming what de Certeau (1988, p. 119) refers to as "plane projection[s] totalising observations" of space: rather than being objective or "from nowhere", such data often tacitly reflects the agendas and worldviews of their producers.

2.6.3. Mapping as Resistance

As we have become increasingly habituated to maps, their semiotics for geography have also become familiar. They have established iconographic systems for communicating space without words, denoting terrain and human structures with word, line, shape, and pattern. Recognising maps as sign systems, some strands of cultural geography have sought to deconstruct cartography beyond rationalist projects of objective representation. To thinkers like Brian Harley (1992), maps become nonrepresentational, interpretative constructions of geographical imagination that are both "material object[s] and . . . active agent[s] in social relations" (Cosgrove, 2008, p. 162).

By freeing maps to visualise, verbalise, and otherwise signify intersubjective visions of space, cultural-geographic views allow us to contemplate art practices that play with and subvert cartographic visual language to critique map-forms as purveyors of totalising visions of space/place (Moore & Garzón, 2010; Ribeiro & Caquard, 2018). Jasper Johns' *Map*, discussed at the start of Section 2.6, succinctly demonstrates how such critical views may manifest as technique: Johns imitates the colours of conventional state maps to assert the work's map-ness while emphasising where it subverts rational fact—blurring borders and ambiguating land and sea.

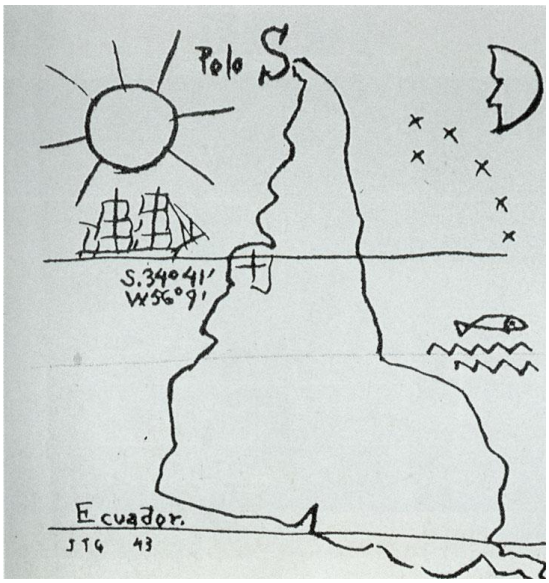
Answering to the map's long history as an instrument in colonialism, the map-form has often been interrogated as a challenge to invisible systems of power (Sletto et al., 2020). In 1943, Paraguayan artist Joaquín Torres García drew *América invertida [Inverted America]*, a map of South America rotated 180 degrees such that the continent's southernmost tip is at the top, inverting the European mapping convention (Figure 2.6). Torres García, whose work developed a contemporary visual language from Indigenous South American inspirations (Vicuña & Livon-Grosman, 2009),

discussed inverting expectation as a way of interrogating the convention of drawing Europe at the top and South America at the bottom of the world map:

> There must not be a north for us, except in opposition to our South. That is why we are now placing the map upside-down and have a precise idea of our position, as opposed to what the rest of the world expects. (Torres García, cited in Vicuña & Livon-Grosman, 2009, p. 107)

Figure 2.6

Torres García's América invertida



Note. Torres García, J. (1943.) América invertida. [*Inverted America*.] [Pen and ink.] https://en.wikipedia.org/wiki/File:Joaqu%C3%ADn_Torres_Garc%C3%ADa_-_Am%C3%A9rica_Invertida.jpg

Increasingly, cartographic semiotics have been applied in ways that subvert mathematical accuracy in favour of experiential truth, and indeed to illustrate space and place in ways that wholly depart from the conventional map form, even extending in more than two dimensions (such as Figure 2.7). New cartographic strands of thought seek to implode such assumptions about the map-form, to illustrate space and place as they are—dynamic, layered, and intersubjectively negotiated (Abrams & Hall, 2006). These movements are seeking "new cartographic worldviews, methods and projects to talk back to the colonial cartographies that helped to structure the worldviews, laws and governance systems of settler-colonial societies" (D. Rogers, 2024).

Figure 2.7

A Social Cartographic Work in the Form of an Apartment Block

Note. Artwork was photographed on display at Stedelijk Museum Schiedam by Alessandro Mirer, used with permission.

Dynamism and interpretativeness are especially foregrounded by the new cartographic practice of feral mapping (Choi et al., 2024). Subverting the rationalist ideals of mathematical representation and two-dimensional projection, feral maps aim to be multilayered and dynamic, "shapeshifting" with the geographical data they aim to represent. More than simply dynamic, however, these maps are *messy:* revealing incomplete data, "cross-pollinating" (Choi et al., 2024, p. 155) ways of seeing from diverse disciplines and worldviews, and responsive to those who interact with them, turning viewers into cartographers.

One instance of feral mapping, replete with incongruity and chaos, is the *Feral Atlas* (Tsing et al., 2020), a project mapping the entangled histories of invasive species and human industry across the world. *Feral Atlas* digitally collages the work of several creatives about how humans have shaped biodiversity in their local regions. Global forces transform local ecological contexts in localised ways, and those local phenomena in turn bleed into each other. *Feral Atlas* revels in incongruity, showcasing visual maps where landforms are illustrated disproportionately, a grid of word relations that narratively interlink different species and historical events, a library of scientific documents, and hyperlinks that transit the viewer unpredictably between many visually contrasting layers. Objects on the map move across the page and must be "caught", much like the insects whose life histories they explore. Links may lead the user unpredictably between these layers, despite following thematic

connections. It is a kind of hypermap, visualising time and space not linearly but in terms of relations across it. This mapping is messy, chameleonic, and always shifting, just like its subject. Through an ethos of entanglement, feral mappings critique and challenge the tenor of the current age of natural history, which Haraway (2016) calls the Capitalocene: the world seen through the eyes of profit and extraction, upheld by corporations, big data, extractivist operations, and surveillant governments. They assert pluralist visions of place that refuse to essentialise, systematise or optimise it.

All that said, "new cartography" is in some ways a misnomer, considering that Western schools of cartography and map forms are themselves a relatively new contrivance. One may look to the songlines of Australian Aboriginal Communities to recognise mapping traditions that are founded in relational paradigms rather than those of geopolitical power and rationalist accuracy, and these far pre-date colonialism. Songlines consist of memorised, recitational "oral maps" (Norris & Harney, 2014, p. 147) that document travel routes through different series of landmarks, boundaries, sources of food and water, histories, and protocols for visitors to Countries other than their own. They signify connections between Communities, sometimes living thousands of kilometres apart. Instead of distilling Place to a totalising view from above, songlines underscore ontologies in which humans do not stand apart from the natural world—where identity, Community, and Place are a continuous living whole (Graham, 2009). In other words, the "reinvention" of mapping away from rationality towards relationality follows in a rich and far older tradition than what I have so far referred to as "conventional" mapping.

From the outset, this thesis project has been interested in interrogating how space/place is reckoned and represented through new permutations of the relationship between place and interaction design. Within that thematic intersection, practices of mapping imbricate many of the related design subfields: locative media, geotagging, virtual placemaking, and more. As seen in the collaborative mapping project in Figure 2.7, the map form itself does not have to visually resemble mathematical cartography to be a map of space. Indeed, the idea of *mapping* is far from unique to the context of surveying or navigation; maps can be of ideas, of experiences, genes, deaths, lives, and more, and they can be as diverse as artwork in both form and intent, towards expressively conveying multitudinous views of space and place.

2.6.4. Mapping Together

The technological advances in everyday computer-assisted mapping have distributed the ability to create and label geographical maps to a growing range of people. Social and collaborative mapping are increasingly being used to mediate the connections between physical places and the pluralistic experiences that constitute them. In one instance, Sinker et al. (2013) explored how participatory digital maps could facilitate audiences of artwork to become makers by annotating art with personal narrative and geographic connections. These maps become crowdsourced, socially constructed cartographies that reveal space/place as diverse networks of interpersonal relations.

Such forms of social cartography have also been referred to, evocatively, as social polygraphy—a pluralist rendering of space done by many people that strives to transgress the authority signified by the map form (Velasco Álvarez, 2020). Social polygraphy signifies participatory modes of cartography that crystallise the (inter)subjective cultural and experiential perspectives that constitute places as socially negotiated phenomena (Dovey, 2017; Mekdjian & Olmedo, 2016; Sinker et al., 2013). It does so by making cartographic tools available and alterable to viewers, uplifting bottom-up perspectives in the mapping of places.

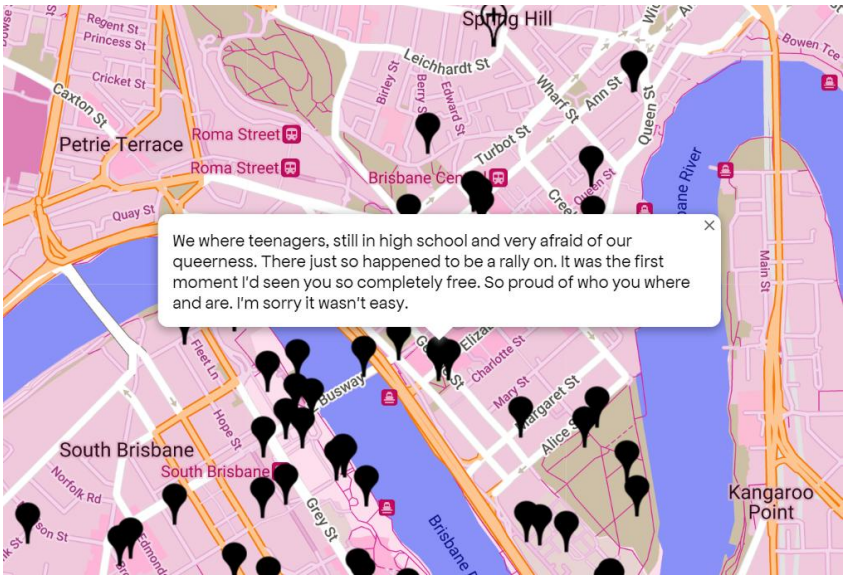
Applying such techniques of social mapping and polygraphy in their work, Mekdjian and Olmedo (2016) examined how mapping can act as a shared expressive language bridging the experiences of French immigrants of different national backgrounds. Immigrants from different countries rely on distinct vocabularies to discuss their migration experiences—echoing, in turn, the differences in the social drivers of migration. For the above study, a system of cartographic symbols was devised, employing a language of colours, shapes, and direction as a meeting point between discourses otherwise fragmented by a lack of mutual intelligibility. In this way, cartographic symbols can highlight thematic and emotional parallels across diverse life stories, becoming a communicative meeting point for the many lives that inhabit space and make place as a social act.

Revisiting de Certeau's contentions about maps within the context of social cartography, it is evident that even "conventional" maps are not *prescribed* by their material form to be tools of totalising power. Crafted by the hands of many to represent not a unitary vision of space but a multilayered one, constructed from the perspectives of many, a map can also reveal a view from everywhere (Foth et al., 2007).

Increasingly, participatory web technologies and open-source mapping libraries make such collaborative maps easier to enact with minimal resources. In my web-development practice, I have produced a few such projects.[8] One may look to two social cartography works—*Colonial Frontline Massacres* (Ryan et al., 2024) and *Queering the Map* (LaRochelle, 2018)—to see the participatory capabilities afforded by these online resources. *Colonial Frontline Massacres* maps oral histories of the violence enacted by colonial authorities on Aboriginal Communities following the European "settlement" of Australia. This work surfaces and foregrounds the distributed knowledge of First Nations Communities that has been historically suppressed, working to disrupt the authorised colonial narrative of Australian history (Dovey, 2017). *Queering the Map* (Figure 2.8) is an international geotagged map of stories contributed by people of marginalised orientations and genders. It captures anonymous spatial micronarratives about queer experiences that may otherwise remain hidden due to marginalisation and persecution.

Figure 2.8

A Geotagged Queer Micronarrative Set in Brisbane



Note. Screen capture from L. LaRochelle, 2018, *Queering the Map*, https://www.queeringthemap.com/.

[8] Two instances of this are *Free Water*, a crowdsourced map of water fountains in Brisbane (http://circlejourney.net/water), and *Meanjin / Brisbane Streets*, a crowdsourced map of historical street photos (http://brisbanestreets.circlejourney.net/).

Colonial Frontline Massacres (Ryan et al., 2024) and *Queering the Map* (LaRochelle, 2018) demonstrate how cartographies augmented by the participatory structure of the internet may surface diverse, contradictory, and personal visions of geographical space. These works additionally exemplify some ways by which mapping can re-emplace marginalised lives and memories in the spaces they have historically been policed out of. When I open *Queering the Map* and locate stories tagged near my current location, a transient solidarity emerges via the knowledge that I share space with these "invisible" others, whose emplaced experiences are asserted through the interface. Such participatory mapping projects contest maps as tools of authority, reappropriating cartography to foreground marginalised lives and allow them to stake a claim on space.

Beyond digital interfaces, configurable social polygraphic works can also be physical and analogue, achieved with stationery, craft materials, and objects that can be moved around and reconfigured (Figure 2.9). Placed in public spaces, these social maps can reveal layers of knowledge and narratives over the present locality, alterable in the vision of those who are navigating it at the ground level.

Figure 2.9

An Analogue Social Polygraphy Work

Note. Photographed on display at Stedelijk Museum Schiedam by Alessandro Mirer, used with permission.

Within the research space outlined above, this thesis takes an interest in mapping translocal experiences and specifically translocal placemaking across borders, scaffolded by bricolages of networked technologies that bridge distant physical places. But as I have explored in Section 2.3.3, translocal issues such as migration, long-distance–relationship maintenance, and virtual placemaking are all fundamentally

implicated by geography, yet are not located in one place, at one time. They are threaded between localities by multilayered mediated spaces and are associated intimately with local, located cultural contexts while existing beyond them. As such, mapping them requires the act of mapping to be rethought beyond proportional, stable, one-to-one representations.

By engaging from the angle of translocality, problematising rigid ideas of locality, and understanding that contemporary translocal cultures are connections maintained across ruptures that more often than not live in cyberplaces, this research project situates its inquiry and interest in cartography among the above subversive and dynamic traditions of mapping.

When it comes to exploring subversions of conventional geographic thought, it becomes useful, also, to consider the ways that dwellers of places reimagine and reinvent the way they do place in their everyday lives. A central framework for contemplating this is play—not just as an act but as an ontology and an approach to placemaking. The next section contemplates how play and playfulness are both historically and currently implicated in the making and transformation of place, and their especial relevance in asserting a sense of place in translocal digitally mediated contexts.

2.7 PLAY

This section connects the reinventive acts that scaffold translocal placemaking with *play*, both as an ontological lens and as a characterisation of these acts. Those who undertake translocal placemaking in mediated spaces must often navigate liminality, both in physical space and in cyberspace. This means that their relational lives and dwellings appear to exist nebulously beyond defined physical locales, and that cyberspaces often tend towards placelessness and detexturing due to their prioritisation of corporate design objectives (Section 1.5).

In these contexts, those seeking to make places translocally must often rely on placemaking tactics that playfully subvert and reinvent the imposed infrastructure towards new and often unintended uses. These acts are characterised by an irreverence towards the “laws” that structure reality, approaching them as generative opportunities to explore and creatively reinvent. Here, playful acts perform the transformative function of sensitising space to the dwellers’ priorities and desires (Choi, 2010). Play, I argue in this section, is a key placemaking tactic; in liminal

translocal contexts, play describes the ontological condition of placemaking and dwelling.

2.7.1. Pla(y)ces in the Margins

For almost a century, scholars have proposed play as an intrinsic quality and necessity of human—and in many cases, more-than-human—lives. This position is put forward by Johan Huizinga (1938) and developed by Eugen Fink et al. (1968) in their ontology of play, suggesting that, because play behaviours are observed across human cultures and among non-human species, that play is an intrinsic psychological and spiritual need. Through play, instrumental, goal-driven tendency of human endeavour gives way to the self-sufficient pursuit of happiness.

Indeed, from Huizinga's (1938, p. 10) notion of the "magic circle" as spaces where game rules supplant the rules of reality, to Jenkins' (2003, p. 1) description of video games as "narrative architecture", research and thought surrounding play have long intertwined it with space and place. The magic circle is as much about space as it is about experience, being a spatiotemporal boundary outlining when and where the rules of play come into effect. By Huizinga's description, a festival space creates a magic circle: within that space, the rules of reality are superseded by these play rules.

One may then consider the playful placemaking practices that occur in liminal contexts as an important space-marking practice, and the key role of playful digital practices towards emplacement. Hardesty and Sheredos (2019) emphasise the role of play in supporting connection and co-presence among players in a virtual world, describing the case study of *Meadow*, a game where players can only communicate through emojis and nevertheless feel a sense of togetherness. They suggest that our everyday world of face-to-face communication is only one of many lifeworlds that players may inhabit, and as with *Meadow*'s emoji-based communication, each lifeworld entails its own laws. While inhabiting these lifeworlds, players take a lusory attitude (Suits, 2005, pp. 54–55), voluntarily accepting the temporary laws of the universe while playing.

However, recent scholars posit a view of play that does not confine it to demarcated spatial boundaries. Through interventions like playgrounds and mobile gameplay, Lammes (2008) proposes that play often transcends Huizinga's consciously circumscribed "circles" and may be woven through serious life in a structure more akin to a network of magic *nodes*. In this conceptualisation, play encompasses the very act of imaginatively negotiating the laws of game space, through which players *produce*

the play world, and the act of play gathers its vicinity into the imaginative lifeworld. Similarly, Choi (2010) asserts play as a transformative spatial practice: a way of "doing" space that resists a hegemonic order (Innocent, 2018; Lehtinen & Vihanninjoki, 2020) and creatively contests the presumed laws and conventions that structure serious life, both physical and virtual (Evans & Saker, 2019; Laato et al., 2023; Low et al., 2022).

Play is then a practice of imaginative world-making intertwined with "real-world" environments. Hardesty and Sheredos (2019) describe an ambient mode of play where players fluidly occupy multiple lifeworlds at once, including their corporeal world. Here, a sense of continuity between these worlds is threaded together by the playful modality of engagement, which reconciles the chameleonic and fluid nature of place and time.

As networked technologies become increasingly woven into everyday routines, it becomes increasingly common for one to transit between online and offline, and between playful and serious life, ambiguously (Hjorth & Richardson, 2014). In that way, play may scaffold a sense of ambient co-presence aligning the experiences of distant communicators through a background awareness of each other (Madianou, 2016).

The ambiguations of space and time described above bear a resonance with liminality as a concept. Liminality, a term first put forth by Arnold van Gennep (2019) and developed by Victor Turner (1975), refers to states of transition between phases, such as between childhood and adolescence or one agricultural year and the next. Within these liminal spaces, one is briefly located outside "regular" time and space, and such liminal conditions mark a transformation from one state to another. Sutton-Smith (2001) defines play around such ambiguities and liminalities, describing how it occupies a space between truth and pretence. To Sutton-Smith (2001, p. 127), "[p]lay, like dreams, is not a secondary state of reality as it is with us but has primacy as a form of knowing": it directs play of the mind (such as imagination) into practices of challenging and transforming the fixed meanings, rules, centres, and boundaries of "sober" reality. Furthering the parallel between play with liminality, Choi (2010, p. 182) emphasises the transformativity of play, "[leading] to open-ended innovation of the current arrangement of the player's world towards their desires".

Within the above views, translocal virtual placemaking can be characterised as playful space-marking practices. In translocal long-distance contexts, mediating technologies pose limits and rules of play ("you may only communicate in written text and images"; "you may only talk within range of an internet router"). Taking a playful

modality enables, the communicators innovate around those rules and catalyse transformative spatial practices, towards making these translocal places more liveable and relatable. In other words, making place translocally *often* entails a kind of play: liminal, exploratory, and irreverent of rules.

As such, I engage play as a key conceptual lens for the exploration of translocal virtual placemaking in this thesis. This lens of play is related to game studies, and many of the methods of game studies are relevant to this thesis (Section 3.5). However, *playful* does not necessarily mean *gameful*; beyond considering gaming technologies exclusively, this thesis takes an interest in the playful qualities and elements of all translocal technological practices, of which games are only a small slice. From the transformative reimagination of virtual platforms towards a rich sense of shared living to the creative reappropriation of technologies for uses other than their intended purpose, it considers the making of virtual places *as* play.

Within the above consideration of play, I next explore the theoretical background of two interconnected design-research areas that lie at the intersection of play and place. One, which appraises virtual worlds as "grounded" in the physical, is that of locative media: where the user's location is translated by a networked location-aware device into inscriptive gestures, enlivened with social meaning (Farman, 2020). The other is that of placemaking in virtual worlds, in which virtual technologies deploy analogies of physical spatial interactions such as building, customisation, and exploration to support novel practices of placemaking (Quiring, 2015; Rzeszewski & Evans, 2020).

2.7.2. Centring the Margins: Locative Placemaking and Collaborative Cartography

Global positioning system (GPS) technology was a military innovation that, when first made available to the general public, precipitated the invention of *Geocaching*, a game where players use GPS trackers to hide and retrieve caches of objects (Schlatter & Hurd, 2005). As GPS technology has grown increasingly accessible to the public through smartphones, viewing and interacting with live geographical information—from geotagged social media posts to locative games—has become increasingly commonplace in everyday life.

This is one of many ways that locative media intertwine physical space with virtual information, producing hybrid realities (de Souza e Silva, 2009) of layered virtual and embodied experiences. As one navigates the city while using a navigational

application like Google Maps or a game like *Ingress*, one may "see through walls" to perceive a building's contents[9] or asynchronously discover the experiences of others in the same locale. Other applications invite users to *create* locative information as they move (Clarke, 2020; Wakamiya et al., 2012): location-based social media applications like Foursquare and Snapchat afford citizens the tools to craft locative micronarratives (Hjorth & Richardson, 2014) that represent efforts of meaning-making in space. Yet others invite more tacit forms of experiential mapping: for instance, in *Pikmin Bloom* (Niantic, Inc., 2021), players create flower trails on a global map, inscribing communal walking patterns on the *Pikmin*-mediated hybrid fabric of the city (Low et al., 2022).

As these locative tools and applications have matured, scholarship has also come to recognise their ability to turn the user's body into an inscriptive tool (Farman, 2020). Translating positioning and movement into gestures, they allow users to unfold meaning and connect fragmentary experiential information with space in a bodily way (Caquard et al., 2009; Roth, 2021), democratising the tools by which we may re-render and conceive space. Such practices live in a paradox between fixed and unfixed: they turn mapping, and thereby spatial experience, into public performance, systematised through data and algorithms, yet in a way that "no sooner [is] a meaning interpreted than it [is] reneged and reinterpreted" (Wilmott, 2020, p. 30).

In these ways, locative media asks us to think postphenomenologically. The user does not merely experience or create a seamless virtual data layer over the physical present; such acts of inscription entangle the physical and virtual as new kinds of space and place. The frictions and serendipities between interface and environment become a part of placial experience, such as when the application demands a walking route that is obstructed by physical or social barriers—"a sense of discomfiture or ill fit" (Richardson & Wilken, 2012, p. 193) that produces sthe experience as much as the technology's intended use does.

Through the vectors of embodiment and re-visioning, collaborative mapping and locative media can reveal complex overlaps between social and spatial realms of lived experience, by layering relational dimensions directly upon space and presenting

[9] This is insofar as those places are mapped, which is itself driven by a range of motivators—most typically advertising—which can asymmetrically favour the discoverability of some places over others (Gordon & de Souza e Silva, 2011).

multitudinous alternate ways of seeing the world (Caquard et al., 2009; Cosgrove, 2005; Moro, 2022; Velasco Álvarez, 2020).

When mapping becomes touring in this way—that is, done through movement of the body on the street—it becomes more capable of sensing de Certeau's "haunted places": invisible, marginalised, and viewed from the grassroots. Developing this opportunity, marginalised creatives are appropriating locative tools to invite others into their spatial and placial knowledges (Clarke, 2020; Gonsalves, Foth, Caldwell, et al., 2021).

Past literature has related the kinds of spatial marginalisation experienced by migrants and refugees to themes of liminality (Mason, 2021; O'Reilly, 2018; Parker et al., 2012). Various social vectors—policing, xenophobia, racism, and limited access to resources (Sangaramoorthy & Carney, 2021)—relegate these communities to the margins of public spaces (Gonsalves, Foth, Caldwell, et al., 2021).[10] In the intersection of locative technology and play, a rich body of locative works seek to make visible these anti-hegemonic place perspectives.

The locative hypertext narrative work *TransHuman Saunter* (Narain et al., 2021) conveys the story of four migrants in Brisbane, centring around the Indian banyan figs in the City Botanic Gardens (a tree species imported to Brisbane by European botanists) as a metaphor for transplant into Australia. It contemplates several subjective valencies of the banyan trees, which function to ground these marginalised life stories in living beings literally rooted in the ground, as well as to entangle the diverse experiences in a shared stake in the urban space.

Pursuing a parallel trajectory in a different urban context, *64 Ways of Being* (Innocent, 2022) draws on Indigenous knowledge of the spaces in Naarm (Melbourne) and visualises fantastical, futuristic, and precolonial visions of the city streets through augmented reality overlays. These apply the mobile phone's AR capabilities in a direct, tangible re-visioning of urban space, opening windows "through" the concrete and stone of colonial and corporate infrastructure that reveal the living place and Country on which they stand. This work, much like some of those explored in Section 2.3.5,

[10] Here, one might consider the synonymity of "marginality" and "liminality"—to be at the edges of space.

uses language as a metaphoric touchstone for perspectives of place, but here, language conveys history and belonging rather than alienation and disjoint.

Although these works do not position themselves as games *per se*, there is a play element embedded in how they are structured, motivating exploration for its own sake, like geography-mediated jigsaw puzzles. In these works, traversal becomes a way of re-knowing place and perceiving new "ways of being" in it. Both works are locative, or location-based, so that the viewer is emplaced in physical space and invited to re-experience it through digital devices.

Such works represent some of the many possible design trajectories offered by computing devices as means of re-emplacement through play. As translocal people, addressing liminality is a strategic necessity throughout our lives. But with the COVID-19 pandemic, these liminal conditions became well known among the public, and with this has come a wealth of new research and creative work seeking to re-emplace the dislocated. In relation to this, Genevieve Bell describes the pandemic as a large-scale displacing event in which all were dislodged from routine and radically defamiliarised from space:

> I check into a hotel; the desk clerk tells me there are only three other guests—essential workers. The payment system does not work; it has not been used in a month. The place feels deserted, like the set of a horror movie. A familiar ritual is unexpectedly very unfamiliar. (G. Bell, 2021, p. 82)

Indeed, the pandemic served as a rich context in which locative ICTs were increasingly engaged to create places of "contactless" interchange and connection during periods of isolation. Libby Clarke (2020) explored three locative games developed during the pandemic—*Henry the Chicken*, *Epilepsy Mans Misadventures* and the *Bells Beach Project*—which leveraged smartphones to turn cities and towns into "playable cartographies" where emplaced connection and collaboration could occur among those "who share the same public space, without having to physically come into contact with one another" (Clarke, 2020, p. 79).

This last consideration—of virtual spaces acting as sites of connection without physical co-presence—flows into the final, crucial research interest of this project: how ICTs mediate our relationship practices in the absence of mobility and physical co-presence. The next section explores such virtual and hybrid placemaking opportunities in greater detail.

2.7.3. Spatialising the Virtual: Placemaking in Virtual Worlds

The term "cyberplaces" was coined by Wellman in 2001 to refer to the then-emerging idea that the communicative capabilities of internet technologies meant that cyberspace could mediate a network of cyber*places*. To Wellman, cyberplaces formed a village-like structure that could be navigated without physical traversal, reproducing the networks of sociality seen in emplaced communities. Yet his vision of cyberplace was predicated on the notion that it connected people and communities who had *already* met and mingled in the "real world".

While it is true that the internet is augmenting connections between people who regularly meet in person, it is increasingly common—especially today—for bona fide communities to be initiated and developed online without any of the members ever meeting face-to-face (Soukup, 2006).

Approaching these entanglements of digital technologies and placemaking involves understanding how people often and increasingly inhabit virtual space *as* places. When we define place experientially, without the requirement of a corporeal location, it becomes self-evident that places can also be mediated by any virtual space that supports dwelling and configuration (Quiring, 2015).

In cyberspaces, users often embody avatars who mediate a sense of self within the landscape (Klimmt et al., 2010), and render them legible through sentimental and mnemonic attachments, much like we do with physical spaces (Ash & Gallacher, 2011; Harrison & Dourish, 1996). Despite pre-existing literature suggesting that virtual platforms are homogeneous, reproducible, and therefore placeless (Odom et al., 2014), Halstead (2021) argues that virtual spaces are varied and differentiated by "distinctive geographies" (p. 2), often resting upon the dual qualities of being situated in cultures in the physical world and affording users creative agency to participate in shaping them.

Indeed, virtual spaces in which users are given the agency of customisation—whether directly analogous to physical spaces, as in a video game like *Minecraft*, or less so, as in social media platforms—have demonstrated that placemaking practices emerge in virtual worlds as an outcome of both solo and cooperative meaning-making, much like they do in physical ones (Halstead, 2021; Quiring, 2015). One phenomenon that came to the fore during the COVID-19 pandemic was that of families and friends taking to playful virtual spaces such as *Animal Crossing* and VRChat to socialise, bond and craft dwelling spaces when physical sites were inaccessible (Pearce et al., 2022;

Rzeszewski & Evans, 2020; Zhu, 2021). Many such virtual worlds appear to foster a sense of "placeness": they behave like physical spaces, built and persistently altered by inhabitants and inviting co-productive alteration (de Souza e Silva, 2009; Low et al., 2022; Quiring, 2015). Paul Dourish (2006b) elaborates on this position in "Re-Space-Ing Place", noting that virtual spaces do not simply act as a passive medium on which place becomes inscribed, but that they also mould the social and placial interactions of their users through their structure and design.

The importance of virtual placemaking among translocal people has been noted in the literature. McKay (2004) and Janning et al. (2018) have underscored that people in translocal relationships often strategically cultivate shared sociomental spaces in the absence of physical co-presence. Much design research has examined tangible artefacts that mediate a sense of shared place in long-distance relationships, such as Li's *Connected Candles* (2019), the *Messaging Kettle* by Brereton et al. (2015), and the *Family Window* by Judge et al. (2010). Through networked synchronisation of distant artefacts, these projects each foster a shared sense of place among users, by having remote paired artefacts tangibly transmit physical interactions to each other. Hassenzahl et al. (2012) explore 143 similar artefacts centred around mediating long-distance intimacy, and develop a taxonomy of material strategies taken by these interactive interventions to foster relational continuity.

The above research projects explored a few granular directions from which mediated placemaking in translocal relationships has been addressed as a problem space in design research. What HCI research has considered less is the ways that cultural contours and geographies shape the endemic specificities of different relationships—that is, that different relational contexts have different priorities and needs, informed by sociocultural contexts. This, I contend, is something that the lens of translocality can bring to the study of design for mediated intimacy and placemaking. The next and final section of this chapter explicates this research gap and positions the overall thesis project with respect to it.

2.8 SUMMARY AND RESEARCH GAP

Much scholarship has established the importance of place in reckoning human relationships (Tuan, 1979), and has documented the cultivation of shared sociomental spaces in long-distance relationships (Alinejad, 2019; Janning et al., 2018; Madianou, 2016). For decades, people in translocal relationships have been creating, inhabiting and playing in virtual spaces, with these practices becoming key anchors of a relational

sense-of-place. Such virtual spaces include customisable platforms that abstract spatiality, such as WhatsApp and Discord servers, as well as virtual game environments that use direct spatial analogies, like VRChat and the video game *Animal Crossing: New Horizons*. A subset of the latter group, notably *Minecraft*, VRChat, and *Second Life*, support literal placemaking by giving players the tools to build homes and design spaces within the game world (Foth et al., 2009; Quiring, 2015; Rzeszewski & Evans, 2020). Yet other virtual spaces mediated connective experiences situated in physical space through locative technologies, such as *Pikmin Bloom*, supporting opportunities for emplaced encounters and cooperation without physical contact. The popularity of these games and platforms during COVID-19 testifies to their importance as sites of re-emplacement at a time when most of the global population was immobile.

Yet, despite how important such designed technologies are to translocal placemaking, there is little interaction design research that accounts for these mediated placemaking practices in their design ethos. Instead, most design work elides the relevance of physical geography and culture, approaching cyberplaces as if isolated from each other, embodying universal needs among all related communicators, and unaffected by the particularities of their users' corporeal locations (Hassenzahl et al., 2012; Janning et al., 2018; Kolozsvari, 2015; Li, 2019; Mueller et al., 2005). These projects frequently deploy objects with localised meanings, such as candles and flowers, towards addressing a presumedly global formulation of long-distance relational needs.

What is missing is a consideration of technology mediated placemaking as a translocal phenomenon. Translocal relationships are not merely a network of localities connected by channels, nor are they *just* the connective tissue, completely detached from the communicators' localities. Different relational and cultural contexts produce different kinds of practices of connection and, thereby, different mediated places. *Both* the localised variations and the technology-mediated connective tissue hosting the places being made (Gielis, 2009) are important to consider in the broader picture of translocal relationality.

That is, there is a need for research about translocal relationality that (a) examines not only the physical nodes at the ends of connections, but also the mediating connective tissue as the sites of places; (b) considers how technology structures and mediates those relational connections while remaining sensitive to how the contours of physical and corporeal locality shape mediated experiences, and; (c)

respects that these mediated relational places do not exist in isolation, but are enmeshed with and cross-inform each other.

This was the gap in the research and the rich opportunity that this thesis set out to address: it embodied the view that research on translocal interpersonal connection could be enriched by the lens of place, as could research on virtual placemaking by the lens of translocality. After all, where there are relationships, there are places, and in these translocal contexts, networked technologies are not only the tools but also the very *space* where placemaking occurs.

This thesis project approached the above research gap by drawing on my practical experience with web development, and my personal interest in playful storytelling about place and dislocation. It investigated playful co-creation and interaction design aiming to centre community members' multivalent experiences of space and place. It sought, above all, to apply design practice to addressing the research gap in a way that honoured the "secret" nature of translocal places (transplaces), viewing the multitude of internet mediated dwellings as a broader geography bringing distant interactors experientially closer in interrelated ways.

Madianou (2016, p. 199) states that virtually mediated co-presence strategies do not "solve separation or other relationship problems". But rather than being a pessimistic outlook, this view asks us to hold translocal places as sites of a *different* kind of shared living from physical co-location—one that does not stand alone or self-sufficient. Rather, translocal places are inherently relational, many of them overlapping across virtual, physical, and imagined layers. The notion of translocal places has to be met on its own terms.

This chapter outlined key prior research from which this thesis emerges. The next chapter, "Methodologies and Research Design", translates the epistemological framings of the research into methodological frameworks, methods, and study design that scaffold this thesis project.

Chapter 3: Methodologies and Research Design

This research project set out to investigate, firstly, how people make places through networked technologies as a way to resituate a sense of shared living and co-presence in their translocal relationships. From there, it inquired into the design practices that produce those technologies and asked how design can be done differently to facilitate—rather than obstruct—everyday tactics of placemaking. The project aimed to bring design practice and a place-centred lenses to understand technology mediated relationship practices, thereby addressing the research gap identified in the Literature and Context Review.

As constituted by the research questions (Section 1.9), particularly RQ2, the project set out to address translocal placemaking concerns—both heavily structured and impacted by the mediating networked technologies—through interaction design work. This investigation began with the context review (Chapters 2 and 4) and thereafter was undertaken in a two-phase research plan, each phase primarily addressing one research question (Section 3.3).

Although focusing on design work, this research project was informed by an interdisciplinary frame. Rather than reifying the boundaries that aim to divide research activities into insular disciplines, I sought here to entangle my work across them: to "shuttle back and forth" by staking its knowledge contributions on the "work of translation" (Latour, 1993, p. 11) that creates hybrid ways of thinking and comprehending the world.

To this end, I draw together thinking and methods from diverse fields of geography, play, creative practice, and human–computer interaction (HCI). Across all these areas, my inquiry was threaded together by the idea of place as relational ontology—that is, that place predicates all experience, observation, and knowledge, and all knowledge production is inseparable from placial context (Section 3.1). Like de Certeau's (1988) tour, this networking of disciplines was an ad hoc and emergent

process, led by reflexive attention to the path of inquiry. Within that relational ontology, Sections 3.2 through 3.4 outline the thesis' approach to practice-based design research and the related participatory action research elements. Aside from design-research instruments, this thesis also undertook research with ethnographic methods, particularly in the first, theory-forming phase. Virtual ethnography, as it pertains to this project, is outlined in Section 3.5, connecting the thesis' various sources of knowledge together.

3.1 PRACTICE-BASED RESEARCH FOR INVESTIGATING RELATIONAL PLACE

In positivist traditions, knowledge tends to be constituted as abstract, universal truths, expected to hold true irrespective of location or context (Connelly & Clandinin, 1986). However, this thesis takes the view that all knowledge *comes from* place/Place and is always grounded in placial context (Graham, 2009). I have argued that network-mediated practices are not placeless but entail ecosystems of virtual, hybrid, and physical spaces, interwoven by relationship practices. As such, the phenomena I investigate are placial, grounded in context, and sometimes very different from each other depending on the relational context being investigated.

This not only asks for a constructivist view of knowledge—that every observed datum is useful, relevant, and serves to broaden a thematic understanding the subject (Connelly & Clandinin, 1986)—but also a view that remains open to contradiction across diverse ways-of-being. What one learns about one emplaced community may not speak for all places in all contexts. This does not mark lack of rigour, but rather of attention to realities that are themselves created and apprehended through experience (Denzin & Lincoln, 2018, p. 310).

To address place in a relational ontology and interrogate how interaction design shapes translocal placemaking experiences, this thesis project undertook a design-research investigation under a practice-based methodology. This sought to address both its adaptation of design practice and the application of design as a research instrument.

Practice-based methodologies support inquiry into professional practice and methods with pragmatic aims: in addition to producing empirical knowledge for the related academic discipline, they also produce practice knowledge intended to be reapplied in "lay" communities and professional fields (Barnes & Melles, 2007; Candy, 2006). Contextuality is especially crucial in researching design: inquiry must attend to

the systems of meanings and relations in which the design products are used (Koskinen et al., 2011), and to the postphenomenological understanding that these products are encountered differently by bodies across different situations and cultures (Ihde, 1993). In order to ground inquiry in those contexts, practice-based research usually begins with locating the project in its academic and professional context, paving the way towards the generation of "culturally novel apprehensions" (Candy, 2006, p. 2) for the professional field and communities of interest. Throughout fieldwork, that communal contextuality is sustained through the use of tangible prototypes "to create dialog with the people in the study" (Koskinen et al., 2011, p. 89); such an ethos of prototyping—as an instrument of user participation—informs the data collection phases of this research project.

However, it is not only design practice that is of interest to this thesis, but also the community practices of translocal communicators who possess habituated knowledge of how to navigate and configure cyberplaces. Useful to this are participatory strands of action research, which enlist not only the tacit knowledge of professional practitioners, but also everyday practices of citizens, which also constitute a kind of expertise (Cox et al., 2021) in familiar domains of their lives. Rather than studying participants, participatory action research aims to uplift everyday experts as co-producers of knowledge regarding their own practices and priorities, thus disrupting the hegemony of the researcher in the act of constructing knowledge (Carpentier, 2016). Through the formation of such relations, participatory design signifies an ethics of care where designing becomes a commitment to community, persisting beyond the temporal bounds of the design project (Light & Akama, 2014). By intersecting different ways-of-knowing among those who encounter the subject in everyday ground-level contexts, participatory action research sensitises inquiry to the view from everywhere.

In this framework, creative instruments and methods present rich opportunities for knowledge co-production. They invite doing rather than reporting, playing rather than solving, and exploration rather than replication, so that transformative visions of the world may be uncovered and expressed (Cox et al., 2021). In the case of this research project, a practice-based methodology was especially relevant as there is a long-standing relationship between translocal experiences and creative practices (Section 2.3.5). Therefore, this research project sought to direct creative modes of inquiry among participants to activate and learn from their tacit practice knowledges of translocal placemaking.

3.2 REFLECTIVE PRACTICE AND THE HERMENEUTIC SPIRAL

As outlined in Section 2.2.2, the hermeneutic view has a foundational relevance to both space/place and practice-based research. Much of what we know as practitioners is known through action (Candy, 2006; Schön, 1984): an artist may not be able to explain how many newtons of force to apply to a brush to create particular effects, but while holding their tools, they are capable of enacting techniques skilfully and without conscious deliberation. This is similar to the navigation of technology-mediated places: the everyday wayfarer may not know precisely how they choose their wander path through a series of hyperlinks, but they each establish a framework of practices within the context of the relationship practices mediated by the technologies they use.

Much methodological research has striven to develop methods of inquiry and meaning making that are sensitive to these kinds of action knowledge. This is precisely the focus of action research methodologies, which focus "more on what practitioners do, than on what they *say* they do" (Avison et al., 1999, p. 96). In his work inquiring into practice, Donald Schön (1979, p. 54) considers "actions, recognitions, and judgements which we know how to carry out spontaneously" such that we "do not have to think about them prior to or during their performance".

What sets such research apart from simply engaging in one's practice, to Schön, is cyclic reflection. This "can surface and criticize the tacit understandings that have grown up around the repetitive experiences of a specialized practice, and can make new sense of the situations of uncertainty or uniqueness which he may allow himself to practice" (Schön, 1984, p. 62). The knowledge produced is contextualised with respect to the practitioner's field and, through cycles of reflection, that knowledge may then be drawn back into the field as new insights for practice.

This cycle of reflective practice is usefully enriched through thinking with Ricoeur's hermeneutic spiral (Section 2.2.2). While Schön (1979, p. 15) characterises reflective work in terms of addressing "problematic situations", Jahnke (2012) contends that the cycle of reflection, when applied within the "open" space of design, needs to be broadened beyond solving problems to exploring opportunity spaces. Here, Jahnke offers Ricoeur's hermeneutic spiral as a model for bringing the design work into dialogue with the world, producing a reflective cycle that essentially "spirals through stages of appreciation, action, and reappreciation" (Schön, 1984, p. 132). Bringing reflective practice full circle to the relational ontology of place, a "spiralling"

reflective practice can enmesh the research with the intersubjectivities of translocal space and place, themselves intimately known through cyclic but evolving traversals.

3.3 DESIGN RESEARCH PLAN

Arising from the practice-based research methodology and reflective modes of inquiry outlined above, this project's research plan was designed around a phased structure, as shown in Figure 3.1. The overall structure aimed to support reflexivity and emergence, with the outcomes of each phase scaffolding the research design of the next and allowing room for the inquiry to follow directions indicated by each set of findings (W. Gaver et al., 2022).

Figure 3.1

The Incremental, Phased Structure of the Research Plan

Aligning the research with this methodology began before data collection, with the extension of the literature review into a **Context Review** complemented by a context-setting study (Chapter 4) that situates the research project in its academic and creative backgrounds. Thereafter, this research project was subdivided into two main data-collection phases (Table 3.1), corresponding to the preparatory work and the reflexive design cycle as outlined by Stephen Barrass (2008). The **Preparatory phase** constructed the theoretical basis for the design work, translating theory from physical place studies and reviewing the current needs and priorities of people sustaining translocal relationships. The **Design phase** then constituted the core design work, building on the outcomes of the Preparatory phase by playing with design practices, then applying those adapted methods back into making with the community.

Table 3.1

The Research Plan for This Thesis Project

Phase	Publication (Chapter)	Objective
Context Review	Publication 1 (Chapter 4)	Context-setting study extending context review, establish a framework for analysis
Preparatory	Publication 2 (Chapter 5)	Theory-forming observation and analysis
	Publication 3 (Chapter 6)	Community immersion survey and thematic analysis
Design	Publication 4 (Chapter 7)	Methodological synthesis—adapting codesign with vernacular reinvention
	Publication 5 (Chapter 8)	Co-creation workshop with people in translocal relationships

3.3.1. Preparatory Phase

Under the Preparatory phase, I undertook two studies constructing granular theoretical frameworks for bringing together knowledge from two distinct fields: (a) HCI research on technology-mediated placemaking and (b) sociological research about translocal relationship practices.

First, the theory-forming observation and analysis study addressed the former and is presented as Publication 2: "Worlds Apart, Together". I conducted in situ observations of playful placemaking practices in virtual and hybrid (virtual/physical, augmented) spaces to understand how existing theory derived from physical placemaking can inform our understanding of virtually mediated space and place. It produced **five virtual placemaking priorities** identifying experiential motivators of placemaking in virtual space.

Next, a study implementing a survey and thematic analysis addressed immersion in the sociological dimensions of translocal relationship practice, presented as Publication 3: "Cultures of Improvisation: Exploring the Vernacular Reinvention of Networked Technologies in Translocal Relationships". I deployed qualitative survey and thematic analysis methods to better understand the current needs and priorities

of adults who sustain translocal relationships through networked technologies. By using the theoretical framework from Publication 2 as a lens for thematic analysis, this phase enriched an understanding of cultural phenomena implicated by technology through intersecting sociological and HCI thought. This phase produced the key finding that translocal communicators resituate a sense of everyday ambient togetherness within the limitations of mediated communication through *cultures of vernacular reinvention*. It surfaced *five modes of spatial intervention* that structure such translocal vernacular reinvention.

3.3.2. Design Phase

The Design phase developed the findings of the Preparatory phase by applying them to adapt and reimagine design practice, bringing the "knowing" signified by disciplinary research to the "doing" implicated in a practice-based space. Whereas the Preparatory phase sought to inductively investigate current theory and lived realities to develop analytic frameworks and design implications, the Design phase was overall framed by a transformative approach to design practice.

The methodological synthesis centred on reimagining design practices around supporting reinvention using the design provocation method, a provocative, speculative prototyping method ("provotyping") that aims to interrogate and challenge dominant assumptions of design practice. This study is presented as Publication 4: "Chapter 7: Unfinished by Design: Inviting Vernacular Improvisation through Provotyping Practices". By provotyping playful web applications using the translocal modes of spatial intervention as the starting point, the theoretical outputs of the Preparatory phase were applied to refine alternative practices of design in the Design phase. The outcomes of this phase included devising alternative design practices that attend to translocal cultures of vernacular reinvention, as well as ideation on technical prototypes to be used in the Design phase.

Finally, the design practices refined with the design provocations were then deployed in a co-creation workshop study, presented as Publication 5: "Mapping Transplaces: Placemaking through Storying in Technology-Mediated Transnational Relationships". Through a social mapping workshop, 11 participants co-created a playful cartography of their experiences sustaining relationships with family and partners through networked technologies. This phase enacted a vernacular-improvisatory codesign workshop to enrich theoretical findings on translocal placemaking through co-production of a translocal feral map. It refined the idea of

transplaces to encapsulate the ways-of-being that characterise long-distance, technology-mediated translocal placemaking.

3.3.3. Cohort

This thesis project took an interest in adults who keep in touch translocally through networked technologies. The community of interest was identified by shared experiences and technological practices rather than demographic distinctions, in accordance with its translocal, phenomenological, and action research framings.

This cohort included the overlapping communities of migrants, international students, and people in long-distance relationships, all of whom are related by experiences of maintaining familial and romantic relationships—where cohabitation is often presumed—without physical co-location. Many of the studies within this research plan, outlined below, additionally focused on technology users, meaning that they were filtered by access to and experience with networked technologies, particularly ICTs.

3.3.4. Types of Knowledge Investigated

Within its practice-based framework, my thesis set out to connect three sources of knowledge: (a) disciplinary knowledge, (b) professional practice, and (c) everyday digital practices among community members.

Disciplinary knowledge. As a researcher, this thesis builds on academic scholarship about sense of place, HCI, and people maintaining close relationships in translocal conditions, such as migrants (temporary or permanent) and people in long-distance romantic relationships. It produces new disciplinary knowledge by intersecting the above disciplines.

Professional practice. As a creative practitioner and interaction designer whose works have long explored place-oriented senses of belonging, alienation, and grief, this thesis also extends my personal creative interests. I sought to engage with my practice to reimagine interaction design that could support a rich, mediated sense of place. As a practice-based project, it drew upon lessons from my applied practice as an interaction designer[11] as part of the constructivist approach to knowledge production (Candy, 2006).

[11] A collection of my creative works can be found at https://circlejourney.net.

Everyday community practices. Because lived experiences of translocal places are tacit, contextual, and intersubjective, any endeavour to research them must meet those experiences on their own terms and remain open to the deep contextuality that identifies a view from everywhere. This project engaged with the practices of communities that navigate translocality in their everyday lives.

3.4 WORKING WITH REFLEXIVITY AND EMERGENCE IN DESIGN

From the outset, this project was structured around an iterative process of development and reflection. This process was founded on the understanding of design research as a nonlinear, abductive process that often produces emergent outcomes not anticipated at the start of research (W. Gaver et al., 2022). It develops the notion of reflective practice as a hermeneutic spiral as well as my practice knowledge as a web development and interaction design practitioner, where iteration and testing are understood as ways of attuning design work to user needs.

In past research and design work, this iterative process has been formulated as a five-step framework called design thinking (Dam & Siang, 2020; Fisher et al., 2016). It consists of: (a) engaging with the target community, (b) defining the design problem or goal, (c) ideating on solutions, (d) prototyping a design response, and (e) testing the outcomes to support further development and refinement. Among design research projects, design thinking has often been adapted as a scaffold for the research process (Fisher et al., 2016; Genereux & Satterfield, 2022; Li, 2019), where its stages are aligned with Schön-esque "cycles of reflection" (Barrass, 2008, p. 33:2) and deployed with the aim of ensuring the inclusion of participants in the design work (Bosley et al., 2022; Moll et al., 2020). However, design thinking has over time drawn criticism as an approach that embeds a solutionist view of technology and research, presuming—and therefore only capable of addressing—singular problems with singular design solutions (Richterich, 2024). The above "problem space" framing made design thinking less useful to this research.

Nevertheless, design thinking is relevant for two reasons. First, this adaptive cyclic method, which mirrors the hermeneutic spiral and also signifies a kind of reflective practice (Jahnke, 2012), embodies the influence of my practitioner knowledge on this project's methodology. More than simply a deliberate inclusion in my methodology, cyclic reflection is an action knowledge I bring from my practice to

my research—that is, to prototype something, invite user-testers into the unfinished work, then continue developing it in dialogue with them.

Second, it is important to note the technologically solutionist assumptions entrenched in design thinking, as they initially impacted the framing of this research project until it was revised. In my initial draft, I intended to engage with the design-thinking method, scaffolded by ideation, prototyping, iterative design, release, and evaluation. However, the problem-oriented, solutionist mindset encoded in design thinking (Richterich, 2024) became a limitation as research proceeded and increasingly revealed the difficulty of framing the research interest as a problem space. The Preparatory phase findings showed that translocal relationship practices involved conditions and tactics so diverse that, while there were common themes across them, there was no single direction for design work to take that would address all the priorities revealed. In addition, it showed me that reinvention as a tactic was one that community members were *already* everyday experts in, and that these tactics crucially respond to their unique social and cultural contexts.

As a result, my approach to the opportunity space in translocal placemaking shifted from a "re-locative" stance towards a *reinventive* one. Rather than thinking of my design work as something that would help improve conditions, I instead considered how I could play with, foreground, and connect research with the diverse existing knowledge of translocal placemakers. This resulted in moving Publication 4, "Unfinished by Design", away from design thinking to design provocations (Raptis et al., 2017), undertaking a reflective prototyping-testing loop albeit without seeing the participants' exploitation of bugs as problems to solve away. In this way, the reflexivity encoded in the overall research plan allowed the methods and approaches of its different phases to develop fluidly with each set of findings, much like the design process can in professional contexts.

3.5 RESEARCHING THE ONLINE CONTEXT: VIRTUAL ETHNOGRAPHY AND GAME STUDIES METHODS

Although the project was scaffolded by a practice-based design methodology, the work was also enriched by mixed methods from fields of humanist geography, sociology, and virtual-world studies. In particular, methods such as autoethnography, focus groups, observation and analysis, questionnaires, and thematic analysis were engaged in the theory-forming phase towards constructing rich data about virtual places, communities, and relationships.

By framing virtual worlds and cyberplaces as place-anchored cultural geographies (Section 2.7.3), we can activate a range of sociological research methods that parse cultural data about transplaces. However, virtual geographies differ in key ways from physical ones, and necessitate the adaptation of conventional sociological instruments. For one, virtual phenomena are often distributed across multiple time zones, do not conform to isolated geographical localities, and change rapidly on a large scale. Cultural artefacts (such as websites, social media posts, and news articles) appear, update, and disappear in real time. To research such phenomena, investigative methods must often adapt existing instruments, which were designed for physical distribution and deployment.

Hine (2000) is an early proponent of virtual ethnography that attends to these different phenomenal qualities of virtual space, asking for ethnography to follow the phenomena in becoming "no longer bounded in particular [physical] places" (p. 71). Illustrating this, she observes how the negotiation of identity and trust manifest differently in virtual space, such as when one navigates gender bias in a deliberate way by choosing a gender-neutral screen name when contacting a stranger. The kind of data gathered, too—frequently hypertextual in nature and often including rich audiovisual and interactive media—can have different storage and presentation requirements from those of traditional ethnographic research. In summation, researching virtual worlds often asks for innovations in method and methodology.

Following in this, most of the methods used in this thesis project were adapted in some way to an online internet-mediated context. In the Publication 2 study, "Worlds Apart, Together", I applied the method of observation and analysis, an instrument in education research for capturing behavioural data in an "instructionless environment" (Shrager & Klahr, 1983, p. 226), to studying open-ended gameplay in a sandbox game. The findings were clarified by an asynchronous focus group, which surfaced the intentions, emotions, and meaning-making processes behind the behaviours observed (Gill et al., 2008). Here, I adapted pre-existing virtual focus-group methods (Turney & Pocknee, 2005) into an *asynchronous* format wherein the participants, located in different continents and time zones, did not have to be online at the same time to converse. For this, I used a forum space resembling Facebook to elicit asynchronous discussion.

The Publication 3 study, "Cultures of Improvisation", was my first in situ encounter with long-distance mediated placemaking. Through a survey study that

used a questionnaire instrument, it sought knowledge about current practices and priorities among adults who stay in touch with family members and romantic partners over a distance. A key challenge was recruiting participants with relevant experiences beyond my personal social networks. Adapting the survey to the online context, I leveraged the transmissibility of the survey hyperlink by prompting respondents to send it to people they knew with relevant experiences, thereby enacting a form of snowball sampling (Goodman, 1961) that activated interconnected community networks to reveal a hidden community (Noy, 2008). The findings of the survey were analysed using the thematic analysis method (Braun & Clarke, 2012), supporting systematic engagement with the themes found in the textual and narrative data. In addition to producing a rich picture of community conditions and practices, this stage grounded the study in community interests and priorities, allowing the research design in the subsequent Design phase to be revised and attuned to those priorities.

Under the Design phase, Publication 4 undertook a design provocations method (Boer et al., 2013; Mogensen, 1992) adapting interaction design practices in a way that leveraged the participatory co-productive capabilities of the internet environment. By distributing the provotypes online and engaging in conversation with participants, the provotyping process both became attuned to the computer-mediated community context and also took on a dialogic quality that could respond dynamically and reflexively to participants' vernacular reinvention acts.

Those "improvisatory" design methods were furthered in the workshop design in Publication 5's study, which involved reimagining the workshop method as an asynchronous, distributed field site hosted within a custom web application to meet research goals (Chapter 8). I employed social polygraphy and social tagging methods, both offering participants the tools to produce their own knowledge and apprehensions of places in a communal setting. Designing the workshop platform to support social polygraphy and social tagging meant allowing the workshop space itself to be configured by and respond to the participants' reinventive acts and cultures.

Overall, because of the locative ambiguity of the research subject, the methods of my research often called for me to imagine new ways of deploying traditional instruments of research in internet-mediated contexts. The choice to adapt methods to the virtual space was a deliberate one, as they embedded technology-mediated practices into the methodology of the research (useful in a hermeneutic sense) and created opportunities to research with people I could not otherwise meet in person.

The above research plan, as presented, was undertaken over the course of my Doctor of Philosophy candidature. The progression of studies listed in this research plan is presented as four publications, corresponding to Chapters 4 through 8. These next few chapters of this thesis present the content of the five publications, each with a preface and a postscript to situate it within the research plan above.

This begins with Chapter 4: Pla(y)cemaking with Care: Locative Mobile Games as Agents of Place Cultivation, which presents an autoethnographic study grounding the thesis' theoretical concepts in the situated contexts of communal networked play and slow placemaking.

Chapter 4: Pla(y)cemaking with Care: Locative Mobile Games as Agents of Place Cultivation

This chapter extends the context review begun in Chapter 2. Here, I undertook a context-setting study to understand how networked technologies and play shape placemaking in situated, on-the-ground contexts. This chapter presents Publication 1: "Pla(y)cemaking with Care"—an autoethnographic exploration of how playful digital technologies support slow, dweller-led placemaking. Although this study was conducted as part of the thesis' groundwork (concurrent with the Literature Review in Chapter 2), it is presented after the methodology (Chapter 3) in order to first situate the autoethnography method within the broader research plan.

4.1 PREFACE

As the culmination of this literature and contextual review, this preliminary research study laid the groundwork for the thesis' understanding of technology-mediated placemaking and play. An autoethnographic study, it looked at the capabilities and potential of playful technologies to transform bottom-up placemaking, focusing on one kind of playful artefact with a place element: locative mobile games. With this a focal lens, I explored some theories and frameworks relating to how play can activate tacit action knowledge about placemaking.

Location-based mobile games, also known as locative mobile games, were chosen because they offered a succinct way to address all the main theories of the Literature Review (Chapter 2) in one context-setting study: the phenomenology of space/place, play as a spatial practice, counter-cartographic practices, and evaluation of interaction design.

Because of the clear parallelism between digital artefacts and physical space, research about locative mobile games forms the preeminent body of work about how technology design translates into the vernacular transformative practices entailed by placemaking. This context-setting study sought to clarify the interconnections between

placemaking, design, technology, and play, producing both a theoretical and a practical basis for further research situated within the intersection of the above themes.

4.2 PUBLICATION

Publication 1, “Pla(y)cemaking with Care: Locative Mobile Games as Agents of Place Cultivation”, is presented starting on the next page, preceded by a statement of contribution of co-authors:

STATEMENT OF CONTRIBUTION OF CO-AUTHORS

The authors listed below have certified that:

1. they meet the criteria for authorship and that they have participated in the conception, execution, or interpretation, of at least that part of the publication in their field of expertise;
2. they take public responsibility for their part of the publication, except for the responsible author who accepts overall responsibility for the publication;
3. there are no other authors of the publication according to these criteria;
4. potential conflicts of interest have been disclosed to (a) granting bodies, (b) the editor or publisher of journals or other publications, and (c) the head of the responsible academic unit, and
5. they agree to the use of the publication in the student's thesis and its publication on the QUT's ePrints site consistent with any limitations set by publisher requirements.

In the case of this chapter: **Pla(y)cemaking with Care: Locative Mobile Games as Agents of Place Cultivation (published 16 November 2022)**

Contributor	Statement of Contribution
Amari Low	Conceptualization, methodology, data collection, data analysis, writing (original draft, review and editing)
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Pla(y)cemaking With Care

Locative Mobile Games as Agents of Place Cultivation

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ABSTRACT

There is growing academic interest in how people use ubiquitous computing devices—particularly smartphones—for cultivating liveable, enjoyable *places*, replete with layers of living meaning, memory, heritage and social connections. This is a trajectory embraced by two related paradigms of urban studies: slow cities and playable cities. In this paper we investigate how locative mobile games—alternately known as location-based games and pervasive games—can be vehicles of placemaking through play, enhancing the careful processes that form places out of layered networks of affection, habit, and social bonds in the playable city. We highlight carefulness as a latent theme not previously given a close treatment in locative game scholarship, applying it as a lens in our study of locative mobile games. Drawing on autoethnography, we investigate three locative mobile games—Niantic's *Ingress* and *Pikmin Bloom*, and Meyran Games' *Plant the World*—conducting a qualitative analysis of the findings using Dena's elements-behaviour-experiences (EBE) framework. We distil our findings into four design implications for developing locative mobile games that support pla(y)cemaking with care: physical anchorage, slow mechanics, ownership, and co-construction.

CCS CONCEPTS

• Software and its engineering → Software organization and properties → Contextual software domains → Virtual worlds software → Interactive games • Information systems → Information systems applications → Multimedia information systems → Massively multiplayer online games • Applied computing → Computers in other domains → Personal computers and PC applications → Computer games • Human-centered computing → Interaction design

KEYWORDS

Digital Placemaking, Locative Mobile Games, Location-Based Media, Slow Cities, Space and Place, Urban Informatics

1 INTRODUCTION

Smartphone adoption has led to a world where computing devices are everywhere, always online, and incorporated in everyday practices. Under the smart city techno-urban framework, these information systems have often been harnessed as tools of efficient control of space. Critics of smart cities have seen questioned their lack of participatory, bottom-up approaches fit to respond to the urban pluriverse [20,26,56]. There is, correspondingly, growing academic interest in how computing technologies can instead facilitate the cultivation of sustainable and liveable places, replete with layers of living meaning, heritage and social connections [5,35,74]. This is an axiom of slow cities and playable cities, two related movements which propose ways that information technologies may support the development of such rich, layered, and enjoyable places.

This autoethnographic study investigates how locative mobile games—alternately known as location-based games or pervasive games—can promote careful placemaking through play ("pla(y)cemaking") and enhance the careful processes that form places out of layered networks of affection, habit, and social bonds [82]. The locative mobile game genre encompasses such games as *BotFighters*, *Ingress* and *Pokémon Go*. They are characterised by a blurring of boundaries between play and serious life through the establishment of hybrid realities where virtual and physical worlds are experientially intertwined [76,78], and an "ambient" style of gameplay that is spontaneously interspersed through the player's everyday activities [42].

We recognise locative mobile games as key technologies of playable cities, interweaving play with life and inspiring affection for places through a reinvigoration of urban environments [32]. Based on past digital media and interaction design scholarship which proposes a renewed focus on care and kindness [5,35,74], our research explores carefulness as a guiding principle in appraising locative mobile game design, and answers the following research question: What design strategies can locative mobile games employ to support careful, cultivative placemaking through play?

This research contributes to a growing body of work on locative mobile games as placemaking agents, examining carefulness as a latent theme not previously given a detailed treatment in locative game scholarship. We focus on three locative mobile games: Niantic's *Ingress* [62] and *Pikmin Bloom* [63], and Meyran Games' *Plant the World* [57], reflecting on months-long autoethnographic studies which consider them as cultural phenomena to understand what gradual processes of careful placemaking they support.

The literature review in Section 2 lays the study's theoretical groundwork based on concepts of space and place, ubiquitous computing, and locative games. Section 3 reviews the suitability of autoethnographic methods in games research and Dena's elements-behaviours-experience (EBE) model [14] for qualitative analysis in games. Section 4 summarises the findings and analysis of our autoethnographic investigations of the three games. From these, we distil four implications for design that allow

locative game designers to support pla(y)cemaking; these are described in Section 5. Section 6 concludes the paper by discussing limitations and proposing further research work.

2 BACKGROUND

This section positions the paper in the scholarly literature and critically reviews relevant prior works across four domains: (i) Space and place; (ii) Ubiquitous computing and playable cities; (iii) Pervasive, locative games, and; (iv) Analytical methods in game analysis. This theoretical groundwork guides the formal analysis in Section 4.

2.1 Space and place

The relationship between space and place has been discussed in academic literature since the incipient years of humanist geography. The then-prevalent physical approach to geography focused on *space*, as composed of measurable physical dimensions such as area, borders and movement [82]. A humanistic perspective on geography was developed by thinkers such as Tuan Yi-Fu and Edward Relph, who proposed to emphasise *places* as associative nets of human perspectives, culture and relationships situated in space [70,82]. These layered place-attachments are characterised by their slow and careful creation. In Tuan Yi-Fu's words,

> "The functional pattern of our lives is capable of establishing a sense of place. In carrying out the daily routines we go regularly from one point to another, following established paths, so that in time a web of nodes and their links is imprinted in our perceptual systems and affects our bodily expectations." [82]

Many researchers have since redefined these ideas, considering evolutions in spatial apprehensions brought about by virtual worlds and mobile computing. Physical and virtual places are understood to be equally real, whether mediated by configurations of matter or data, both being created by traversals, habits, and social ties [4,39]. When a community forms in a café among its regular clientele, it becomes a place by virtue of being a nexus of habit and social activity. The same could be said of an internet platform that is routinely and habitually visited by the same people: social bonds, habit and culture are what render virtual space legible to humans [15]. Scholars have also started to study the impact of other digital technologies on placemaking, such as public displays and urban screens [81] and internet platforms like the peer-to-peer accommodation provider Airbnb [28].

Locative media—media that blur "the barrier between the physical and the virtual world" and "augment people's experiences in real places through relevant geo-tagged information" [8]—collapse these physical and virtual layers into one hybrid space. These media rely on "spatial similarity" to semantically link virtual and physical layers [1], such that inscriptive acts of movement propagate simultaneously in both layers [78]. Experienced in this space-like way, locative games support the "spatially-organized aspects of everyday sociality" [15], and the places created through locative media are themselves hybrid, threaded through both layers at once.

Despite technological advances that transform the way we experience space, historical notions of space and place continue to be relevant in digital and virtual realms. At the same time, these technologies, and the hybrid worlds they create, have scaffolded new capabilities and approaches in relation to space and place, and afforded us new ways of placemaking and civic engagement [7,27,36,55]. Section 2.2 explores some of these developmental trajectories.

2.2 Ubiquitous computing as a careful technology

Our world increasingly resembles what Weiser [86] once described as a ubiquitous computing world: one where computing devices are everywhere, always online, and incorporated unobtrusively in everyday practices. While the characteristics that Weiser commends such as calm and seamless have been critiqued [31,72], smartphones, which in 2021 were owned by 83.72 per cent of the world population [83], continue to be the epicentre of this evolving trend. Smartphones are each owned by one person, always carried on oneself, and always connected with other devices through wireless networks, communicating location and activity data [37,38].

In the prevailing "smart city" paradigm of urban strategy, these pervasive information technologies are administered top-down to optimise control of the city [6,46,85]. While smart city movements have largely focussed on improving productivity, mobility and sustainability outcomes, critics question the lack of participatory, bottom-up approaches fit to respond to the urban pluriverse [20,26,56]. Many countermovements, including the two of interest in this paper—slow cities and playable cities—are seeking to instead understand how ubiquitous technologies can act as accomplices to bottom-up placemaking [2,68]. Proponents of these movements have called for our ubiquitous computing milieu to develop along human-centred trajectories, recentring liveability over efficiency [29,33,84] and grassroots social change over administered social order [30,68].

The slow cities movement has sought to reimagine cities as layered fabrics of culture, habits, memories, and social connections amongst citizens [25,33]. They emphasise the careful and gradual processes that foster affection and culture in ordinary places [29,48], with technologies acting instead as "appendages" that enable and enhance human activity [72,79] and renew our approaches to and relationships with everyday spaces [15]. Through a combination of mobility, spatiality, and sociability, they have diversified and enriched our engagements with space and place [15,79,87]. Notions of where and when things can be done have expanded: for instance, work practices often occur at home, while in transit and in between other activities. Not only do smartphones enhance our capabilities, but they also augment space by layering the digital on the physical to form hybrid realities [3,8,78]. By remapping space and our spatial capabilities, smartphones "work in tandem with bodies and locales in a process of giving meaning to our contemporary social and spatial interactions" [23].

These notions overlap with the second of these urban frameworks: the playable city. Playable cities position

playfulness as a key placemaking strategy, seeking to "[turn] everyday experiences into play" [66] and thereby enhance not just the liveability and enjoyment of urban spaces [12,46,66] but also offer new opportunities for participation and civic engagement [30,36,68]. Play, as outlined by Huizinga [44] is primordially necessary, transcending extrinsic justification and value. In this contemporary milieu where play is often commodified [11], a playable city proposes to reinstate play as a foundational priority of living, to which technologies can act as accomplices, interspersing play in "serious" spaces and contexts.

We draw a connection here between play and the concept of care. Care emphasises well-being as a motive and framework for action, eschewing capitalistic priorities and top-down schemas of control [61]. The connection of care to place can be drawn via Tuan's [82] idea of "fields of care," conceiving of places as being created from the cultivation of culture, habits, and affection upon space. We propose that care can be a complementary guiding principle for placemaking through play—a strategy that resists hegemony and fosters the cultivative, bottom-up practices that craft a liveable city.

Playable cities call for us to reimagine how technology mediates people's relationships with the city, for citizen players to be the agents of pla(y)cemaking, and for technology to be our accomplices to that end. Particularly in locative games, the creation of places is player-led and play-driven: they allow us to reappropriate ubiquitous computing as technologies of carefulness, to answer to the technologies of control valorised by smart cities, they allow us to reappropriate ubiquitous computing as technologies of carefulness, to answer to the technologies of control valorised by the smart city, which in turn risk causing new "anxieties of control" [52]. Giving some control and agency back to the people, the next section explores how locative gaming can contribute to player-led playmaking in more detail.

2.3 Locative gaming and the fragmentation of the magic circle

In *Homo Ludens,* Johan Huizinga [44] describes the "magic circle" of play as the space in which "the laws and customs of ordinary life no longer count" and the rules of the game substitute them. Huizinga's magic circle is temporally, spatially, and spiritually delineated, separating player from non-player, and play from serious life. More recently, Fink et al. [24] contrast Huizinga's thinking in their ontology of play, suggesting that play does not only occur in clearly outlined times and spaces distinct from serious life, but rather as an intrinsic phenomenon of being, interwoven into everyday life.

This ontology is particularly sustained in the study of locative games and is recapitulated by de Souza e Silva's hybrid reality framework [78] and Hjorth and Richardson's concept of ambient play [42]. In locative gaming, there is no board or arena, and play is not deliberately demarcated or fore-planned: it is "dispersed" in everyday life and constitutes a continuous, ongoing pursuit.

Many researchers [23,51,59] have striven to formulate a definition of the field of locative mobile games. Adriana de Souza e Silva [78] consolidates one definition in three traits: mobility, sociability, and spatiality. Namely, she considers locative games as able to (a) enrich the act of movement with meaning through networked play; (b) create environments where multiple players may form ad hoc social networks of collective action motivated by common goals [71] and; (c) define a new hybrid logic of space, where play occurs in physical and virtual layers simultaneously.

Building on de Souza e Silva's work, Jason Farman outlines an activity-focused framework that defines locative games through a lens that is "less about the devices and more about an activity" [23]. As he states, many locative games predate the smartphone: *Geocaching*, a 2004 game in which players locate hidden caches with GPS coordinates, was originally played with GPS receivers [75]. The folk game that inspired *Geocaching*, letterboxing—in which verbal clues lead players to treasures hidden in letterboxes—was invented in the 1850s, before the first power grid [18,59]. To apprehend locative gaming, then, one must understand the game phenomenon as an inscription of the moving body in space, with the mobile device simply accessory to that inscription.

That said, the specific inscriptive capabilities of smartphones are of especial interest in the current zeitgeist of locative gaming. Hjorth and Richardson [42] describe the idea of ambient play, where gameplay intervenes in a "dispersed" and ambiguous fashion in the player's serious activities [43]—a mode of play that is becoming prevalent with the rise of ubiquitously personal smartphones. The idea of ambient play considers games as an inseparable part of the wider phenomenon of the player's life.

Locative games support a unique form of sociability: by semantically linking the virtual and physical layers, they support a sense of co-presence through features that allow players to leave "digital traces" on the virtual landscape [3]. This makes way for chance embodied, "in-person" encounters as well as a sense of serendipity, proximity and community [51,88], paving the way to place-attachments and careful placemaking. Sometimes, this takes the form of a participatory creative affordance, allowing users to reframe the experience of space through the lens of their personal place-attachments, and "have an impact upon how a location is recorded, experienced, and thus remembered" [42].

There is a rich body of knowledge about how locative mobile games afford citizen players the ability to shape spaces and make places, collaboratively and with care [17,53]. We seek to understand how locative mobile games can better support these potentialities, by analysing three games and discovering a series of design implications pertaining to pla(y)cemaking in locative mobile games. This is achieved through applied game analysis methods, which we outline in the following section.

3 METHODS: AUTOETHNOGRAPHY OF GAMES AS CULTURAL GEOGRAPHIES

Games can be understood through the lenses of geography and anthropology. Ash and Gallacher [4] state that games are at once "cultural geographies" and "geographic practices," where existing cultural and social phenomena manifest and are reproduced, and entirely

endemic cultural moments and phenomena emerge. Echoing the traits of locative games described in the previous section, Christine Hine [41] calls for adaptive ethnographic strategies which respond to virtual cultures as ambiguously bounded in time and space, "mobile" across multiple media, and interspersed with other activities. In a similar vein, Tom Boellstorff [9] suggests that anthropological approaches like ethnography can "contribute significantly to a game studies nimble enough to respond to the unanticipated, conjunctural, and above all rapidly changing cyberworlds" [9].

Within this understanding, we undertake a virtual autoethnographic investigation to study the chosen games as living cultural artefacts and geographies. The introduction of the "auto-" element addresses the paradox of the "participant observer," recognising the researcher's personal involvement with the research subject to understand how they inevitably play a role in shaping and constructing findings [19,41].

Guiding the analysis of our autoethnographic data is the qualitative formal analysis method, which is well-established in games research [50]. Mechanics-Dynamics-Aesthetics (MDA) is the pre-eminent analytic model of this method, bridging the developer's technical perspective and the player's experiential focus to understand the game as a whole [45]. More recently, the MDA model has been criticised for focusing on games as objects rather than phenomena that emerge from interaction between game artefact, player, and other elements beyond the game artefact. Christy Dena [14] adapts the MDA model into the Elements-Behaviours-Experience (EBE) model, focusing instead on the interplay of elements, behaviours, and experiences that emerge from play. These theoretical underpinnings reflect Jason Farman's emphasis on an activity-based approach to locative games research. It lends itself well to understanding games as "multidisciplinary" cultural forms, which Boellstorff suggests "cannot be reduced to…the rules and programming encoded in the game engine and the rules of the game" [9]. The EBE framework is thus the analytical model we adopt to analyse our data.

We then develop our ethnographic findings into a set of implications for design in locative mobile games. Dourish notes that design implications should go beyond simply documenting ethnographic findings, but supply models that renew understandings of the relationships between technology and people [16]. In Section 5, we explore the design implications of our findings by situating them not only in the technological context of locative gaming, but also—and particularly—in the social context of play as a placemaking vehicle.

4 AUTOETHNOGRAPHIC FINDINGS

In this section, we describe our autoethnographic investigation of three locative mobile games. To support interesting insights into placemaking through play, we chose to focus on games where players share a global virtual environment and can meaningfully and collaborative shape it. This was further limited to games that are free-to-play, playable in the authors' location, and where monetized elements do not affect player's success in the game. The following three games were selected: *Ingress, Pikmin Bloom,* and *Plant the World* (Table 3.1). Notably we exclude *Pokemon GO;* although it is often researched in the locative game literature [2,3,22,40,43,69], we have chosen not to examine it as it offers comparatively limited opportunities to persistently shape the global game space.

Table 4.1: The three games investigated in this paper, with information about developer, publication date and total downloads on the Google Play Store at the time of writing.

Title	Developer	Date published [a]	Downloads [b]
Ingress	Niantic, Inc.	14 December 2013	10,000,000+
Plant the World	Meyran Games	31 March 2021	50,000+
Pikmin Bloom	Niantic, Inc.	27 October 2021	1,000,000+

[a b] Application release dates and download data at the time of writing were retrieved from the Google Play Store [58,64,65].

The first author played the three games on an Android smartphone for at least eight months each (Table 3.2), in and around the city of Brisbane, Australia. Due to time constraints, all three games were played simultaneously. *Pikmin Bloom* was released during the period of the study and was deemed to be suitable for study; however, it has a comparatively small player community at the time of writing.

During the play periods, the author participated in the social communities surrounding each game, both online and in Brisbane. Due to the highly mobile and ambient nature of play, experiences were primarily documented through annotated screen captures.

Table 4.2: The play period for each game examined in this paper.

Game	Start Date	End Date	Days Played
Ingress	1 September 2021	13 July 2022	315
Plant the World	5 October 2021	14 July 2022	281
Pikmin Bloom	27 October 2021 [a]	15 July 2022	261

[a] Investigation of *Pikmin Bloom* commenced on the release date.

We conducted a qualitative formal analysis of the autoethnographic data via the EBE framework, situating the concepts drawn from the earlier literature review in their applied context. Through this analysis, we unpack how each game engages with and supports careful pla(y)cemaking.

4.1 Ingress

Ingress is a locative mobile game released by Niantic Inc. in 2012. A strategy game with a science-fiction narrative framing, *Ingress* builds on the tactical, competitive features of predecessors such as *BotFighters* [77] while introducing elements of collaboration and organisation. The first author began playing *Ingress* in September 2021 and continued to do so over a period of ten months. During play, they interacted with other members of the game's online community, joined an Enlightenment faction Discord server

on which players communicate and coordinate with other faction members, and participated in social gatherings with other players.

4.1.1 *Elements.*

The *Ingress* application presents itself as a "scanner," through which the player may detect Portals, virtual points-of-interest that are linked to structures of cultural significance such as public artwork and historical landmarks. On starting the game, players are prompted to join one of two opposing factions: the Resistance (colour-coded blue) or the Enlightenment (colour-coded green). Factions vie for control of territory, with players within a faction collaborating to capture Portals, link them up to create triangular fields, and attack enemy Portals with area-of-effect weapons to diminish their defences and release them from hostile control. When captured and incrementally "deployed," Portals generate useful items whose quality is determined by the Portal's deployment level. The map-based interface displays where nearby Portals are located, as well as their capture status (neutral, blue or green). It also reveals the locations of links and fields, likewise colour-coded by faction.

Ingress includes peripheral functions allowing the community to participate in the creation and maintenance of the game world. Most notable are the Portal suggestion feature, detailed by Sengupta et al. [76], and Missions, which are player-contributed walking routes that constellate several Portals. Outside of the game, the Mission Authoring tool, Niantic's Community Day events, and online social spaces that centre around *Ingress* such as the Brisbane Enlightenment Discord Server, also make up elements of the game phenomenon.

4.1.2 *Behaviours.*

The player's choice of faction determines their collaborators and opponents and constrains interaction possibilities for Portals depending on which team controls them—enemy Portals can be attacked; allied Portals can be upgraded. Colour-coding in the game allows the player to recognise immediately if the area in their vicinity is Enlightenment- or Resistance-dominated, guiding their approach to play—for instance, whether they take an offensive or defensive stance.

Many of *Ingress*' mechanics encourage tactical, collaborative gameplay. Eight players are required to deploy a Portal to its maximum level, necessitating social organisation for the obtainment of high-quality items. Links may be formed between allied Portals captured by different players, as can fields be formed of links made by different players. Portals do not remain captured indefinitely, but degrade over time, and must be routinely maintained through "recharging" by the controlling team.

These tactical traits scaffold the sociability of *Ingress*: the more members of a given faction commute regularly through a given area, the easier it becomes for them to maintain control over it. During the investigation, the first author found that it was common for players to create networks of interconnected fields making use of other players' links. They also participated in several "Portal Farms," where multiple players would meet to deploy target Portals to high levels and harvest items from them in large numbers. The attack mechanics of *Ingress* further encourage spatial strategy through real-time coordination of movement. One such behaviour, in which the first author has participated, is known as the "clown car": several players gather in a single vehicle, circling a target area and repeatedly attacking all nearby Portals. Clown cars and Portal farms signify the types of ad hoc units of social organisation that emerge from locative play, pointing at a unique capability of locative mobile games to elicit networking and collaboration.

The Missions feature encourages a host of behaviours distinct from those supported by the core gameplay. When a Mission is activated, the game enters an altered state where the player is prompted to move towards each subsequent Portal in the sequence until the entire route is completed. Visiting all Mission Portals (through the explicit gesture of "hacking") awards the player a badge that is displayed on their profile. The affiliated Mission Authoring Tool allows players at Level 7 and above to create their own Missions, which are published to the public Missions list for other players to experience. In effect, it is a participatory creative affordance that allows players to shape the experience of urban space for other players, thereby becoming an avenue of participation in urban knowledge creation and interchange.

4.1.3 *Experiences.*

As noted by past research into *Ingress* [32,76], feelings of attachment and territorialism often form among players over Portals, motivating them to invest effort into maintaining Portals that they see as theirs, and to develop routines around that sentimental imperative. During play, the first author experienced such a sense of attachment, incorporating recharges of the five Portals closest to their residence (their "Home Portals") into their daily commute. Similar emotional attachments were found to extend to entire neighbourhoods and suburbs. After a month of play, the first author had established routine Portal access routes through an area they saw as their "turf". At the same time, other geographical groupings of Portals became recognisable as the turf of other players. This sense of territorialism was reflected in conversation with other players: neighbourhoods in Brisbane were thought of as "green" or "blue" areas, referencing the respective factions' consistent control of those areas. Such a use of colour-based geographical referents mirrors the language that anchors many politically oriented social communities [73].

Such spatial sociability can foster a mediated sense of community. The first author came to recognise that specific players were regularly upgrading their home Portals and eventually made online contact with them to coordinate Portal deployments. Game space thereby becomes a record of habitual activity, and social recognition allows for a sense of familiarity through awareness of the habits and movements of fellow community members. A sense of asynchronous co-presence can slowly develop among the player and their social periphery through gameplay. These experiences are the very ones often implicated in the natural, gradual formation of place.

Ingress Missions represent a mode of play that is almost separate from that of the core game. Using the peripheral Mission Authoring application on the official *Ingress*

website, players may leverage their familiarity with local landmarks and personal place-attachments to create gameplay experiences for other players, and communally shape the game artefact. Most authored Missions have characteristics of quasi-tour guides, leading the player along a sequence of thematically related landmarks. Missions are often created in sets of six, such that when completed in sequence, their completion medals line up on the player's profile to form larger images.

The first author found that members of the community have taken to completing these community-created "Mission banners" due to the perceived cultural and aesthetic value of displaying them on their profiles. The first author completed a few such banners during play, and while doing so, they encountered several points of interest that they had not previously been aware of, including parks, public art installations and shops. Sengupta et al. explore this feature briefly in their research, observing that by according significance to places in the virtual layer, the game challenges players "to seek out culturally significant sites that go beyond their familiar localities" [76]. The Mission Authoring tool enables players to create micro-stories that organise space around personal understandings, allowing them to convey an experience of space to other players through the frame of gameplay. The Missions feature becomes a vehicle for place-enrichment and person-to-person transmission of urban knowledge.

Ingress is primarily framed as a competitive game, but it is through its collaborative and creative elements that the social, habitual and cultural experiences that characterise placemaking occur. The competitive elements often support hostile interactions such as certain players' "Home Portals" becoming targets of coordinated attacks and harassment. This competitive frame can sometimes hinder careful placemaking opportunities: the inherent transience of one's ownership over game constructs can render the maintenance of places a frustration. But these same elements of competition and rapid turnover can also engender feelings of factional belonging, and foster repeated, habitual activities and traversals that lead to the creation of places.

4.2 Pikmin Bloom

Pikmin Bloom is a 2021 location-based game by Niantic Inc, the developers of *Ingress* and *Pokemon Go*, and based on Nintendo's *Pikmin* franchise. Gameplay centres around planting flowers and growing a team of plant-like creatures called Pikmin, with walking as the primary mechanic for advancing in-game goals, underscoring its function as a fitness tracker [49]. Virtual points of interest, which correspond to physical ones, are stylised as giant flowers and mushrooms, and each type provides different interaction opportunities.

The first author played *Pikmin Bloom* for eight months, starting in November 2021. While there is not a large and active player community in Brisbane, various features of the game support a sense of co-presence without physical co-location.

4.2.1 Elements.

In *Pikmin Bloom*, the player gathers a team of Pikmin by discovering seedlings in the environment and growing them. On emerging from its seedling state, the player may name the new Pikmin, whereupon it acts as a helper, picking up fruit, converting fruit nectar into flower petals, and planting flowers on the virtual world map on the player's behalf. Planted flowers can be seen by all players, and remain visible for about a week before decaying. Walking in the physical layer is the central mechanic by which the player gains boons and advances their level, and a higher step count typically translates to more item rewards, and better ones. Integration with the device's local step count tracking application—either Google Fit or the Apple Health app—enables the application to track step counts in the background even when the player does not have the application open.

Two types of points of interest can be found across the virtual map: giant flowers, which grant players rewards when a certain number of flowers have been planted near them, and mushrooms, which players within its visible radius may initiate battles with, producing rewards when defeated. These points of interest are, like the Portals in *Ingress*, attached to landmarks in the physical world, anchoring them to the physical layer. Multiple players can work together to expedite the blooming of giant flowers, and may also battle mushrooms collaboratively, gaining equal rewards upon their defeat. When a player initiates a mushroom challenge, its decreasing hit point bar is visible to all players in the vicinity, who may then participate from their current location.

Outside of the game artefact, Niantic organises monthly Community Day initiatives in conjunction with its major releases, as outlined in Section 4.1. The most recent Community Day saw a low turnout of *Pikmin Bloom* players, and these events will only be briefly discussed in the context of *Pikmin Bloom*.

4.2.2 Behaviours.

Pikmin Bloom has been designed to be incorporated unobtrusively into daily activities [49]. This is enabled by its ambient music, infrequent rewards which are obtained only on explicit player interactions, and a planting mechanic that functions without any player intervention, through the tacit gesture of walking. Through step counter integration, the player may engage with the gameplay through walking even when they do not have the application open.

When the player activates the flower planting feature, they leave a flower trail while walking, which persists on the shared world map for about a week. The game also produces haptic feedback to planting, vibrating briefly for every flower planted, and this gives the player an awareness of their progress in the game without interrupting their walking to look at their screen. These elements function together to support the ambient, ambiguous style of play described by Hjorth and Richardson [42].

In removing hostile mechanics, *Pikmin Bloom* differs from Niantic's most famous releases, *Ingress* and *Pokemon Go*. The elements of the game do not support player actions that antagonistically impact other players' goals. There are no native competitive elements; all goals and rewards are either attained personally, or collaboratively. This fosters a peaceful and perhaps constructive approach to play, where players may advance gameplay efforts without having to account for interference.

Every Pikmin "remembers" its birthplace. As the player spends more time walking with a given Pikmin, its friendship level with the player increases. When they reach the maximum friendship level, the Pikmin may leave on an expedition to their birthplace, obtaining a piece of cosmetic decor. Through their "memory" of where they were found, Pikmin are intrinsically attached to places. These connections are indicated by the style of decor that they gain.

4.2.3 Experiences.

As outlined above, walking, as measured in step count, is the main inscriptive act of *Pikmin Bloom*. *Pikmin Bloom* initially appears, then, to be a game about space rather than place: it operates around the player's movement, agnostic of the unique character of locations, and therefore does not seem to support deeper connections with or a sense of ownership over locations. However, three elements—flower-planting, points of interest and Pikmin birthplaces—prove an interesting experiment in the connection between play and careful placemaking.

The first author began playing *Pikmin Bloom* shortly after its release in October 2021. They quickly observed trails of flowers across their neighbourhood, and eventually contributed their own plantings. Flower trails often outline popular routes of passage—such as along pavements in the Brisbane CBD. Brisbane's public park spaces often feature dense mats of flowers. Large mall corridors are often also visible as flower paths, such as seen at Queens Plaza in the Brisbane CBD.

Unlike links in *Ingress*, flowers are not planted via explicit gestures made with instrumental purpose: planting is automatic once activated, and as such they are inscriptions of tacit, embodied locomotive and navigational knowledge and habit. By affording players the ability to plant persistent flowers on a shared global map, routes of passage through space are recorded upon the world. Collective, repeated human movement and play activity become tangible and readable through the colours, density and shapes of flower trails. These digital formations may be seen as analogous to the "desire lines" that mark where pedestrian traffic deviates from built paths, demonstrating human needs, habits and preferences as navigators of urban space [60]. They inspire an ambient sense of belonging to a larger community in the given space that is gradually built up over time—the seeds of a play culture that supports careful placemaking.

That sense of asynchronous co-presence is underscored through the collaboratively-oriented activities associated with points of interest—namely combat against mushrooms, and planting to activate giant flowers. Mushroom challenges and flower-planting can be initiated asynchronously, such that without meeting, players may work together to attain shared rewards. When the first author played *Pikmin Bloom* in less-populated areas, an additional layer of mediated recognition was introduced when the player recognised single paths of repeated traversal.

For the player, Pikmin can also become a channel of connection with places. Individual Pikmin remember where they were "born," and when they return to their birthplaces to pick up decorations, these can initiate moments of evocative recollection. During the play period, the first author played *Pikmin Bloom* in the Sunshine Coast, a local government area about 100 kilometres north of Brisbane. When Pikmin "returned home" to obtain decor on the Sunshine Coast, it made for moments of reawakening to one's relationships with distant places that were established through past playful activities. The persisting connection with places can turn the player's Pikmin collection into a place-diary of sorts, recording past place-attachments and situated play experiences.

Similarly to *Ingress*, *Pikmin Bloom* allows for place-anchored social encounters that can occur without physical co-location. Altogether, the trajectory of ambient locative play represented by *Pikmin Bloom* promises gameplay experiences that foster a sense of accumulative cultivation, connecting a spatially- and temporally-dispersed community together.

4.3 Plant the World

Plant the World is a locative sandbox game published by Meyran Games in March 2021. Gameplay centres around planting trees on a hybrid physical-virtual map, producing resources such as wood, gold and fruit, and crafting settlements in which plant life is central. As is characteristic of sandbox games [10], *Plant the World* supports a large range of self-determined play motivations.

The first author started playing *Plant the World* on 5 October 2021 and played it for eight months. While lacking the player critical mass to be a true case study in placemaking through play, *Plant the World* demonstrates unique mechanical innovations that translate to unprecedented careful pla(y)cemaking opportunities.

4.3.1 Elements.

Plant the World takes place on a virtual map mirroring the physical world. The underlying virtual world visualises the locations of roads and waterways as semantic markers of location. All other terrain can be planted and built upon. Unlike the other games described in this research, *Plant the World* incorporates elements of unconstrained movement. While the virtual layer is visually laid out as a world map, and the player always begins the game at the location corresponding to their physical coordinates, the player avatar may be moved in the virtual layer using onscreen controls, as if in a traditional video game, independent of physical movement. The first author was able, for instance, to "walk" to the Brisbane City Botanic Gardens and plant trees there without physically leaving home. Costlier but also available are teleportation potions, which allow players to briefly visit faraway locations until the end of the play session.

Players collect the seeds of 64 different species of tree and plant them on suitable ground. Trees grow to maturity over the course of several hours, days or sometimes weeks. The player may then continuously harvest resources such as gold, fruit and wood from buildings in the vicinity of trees, using them to construct buildings and decorations and tame animals to live on their planted land. Plantings and constructions are visible to all players, and persist until explicitly removed, and players may opt to make their resources harvestable by other players. Although players

may act hostilely to others by felling their trees and disrupting their settlements, this behaviour is not incentivised by the game and produce negligible rewards.

As with *Ingress*, ambient elements of *Plant the World* that exist beyond the game artefact are important elements of play. There is an active official Discord server which players are invited to at the start of play, where *Plant the World*'s developers post development updates, organise collaborative building projects, and organise monthly "garden club" contests where participants landscape a hexagon tile each and a winner is selected through votes.

4.3.2 Behaviours.

Plant the World is based around a digital landscaping concept, in which players may shape the world map by placing trees and building structures in hybrid space. These trees and structures are visible, interactive for all players, and persistent until explicitly removed. There is a visual and behavioural resemblance between virtual trees and living ones, imparting a realness to botanic cultivation activities: different species of trees grow in different shapes, take time to reach maturity, and many produce fruit when mature. Care is inherently embedded in the slow process of tree cultivation, and in the process of arranging trees and buildings to preference.

Departing from *Ingress* and *Pikmin Bloom*, we see in *Plant the World* a sandbox ethos, where the player is given the tools to make places, but not extrinsic frameworks or objectives for doing so [10]. Placemaking is driven by intrinsic, self-determined player objectives. If the Portals and giant flowers of *Ingress* and *Pikmin Bloom* are more like Tuan's [82] public symbols, then the parks, villages and community building projects of *Plant the World* are far more like fields of care, created through habit, effort and collaboration.

Because of the decoupling of strict physical and virtual location through onscreen movement controls, one could call it a "loosely locative" game. Players' home bases can cover a much larger area, and the players themselves can often collaborate on global community projects, such as the recreation of the Great Wall of China (Figure 3.1). Such travel is time-consuming, to a degree that the player will primarily experience locations close to their geographical location during play. The game also privileges the player's geographical location by spawning them at the corresponding point on the map by default at start-up, and sending the player back there when killed by a wild animal. In effect, the player's geographical location becomes an anchor point for "home", albeit a mobile one. Through these elements, the game generates a sense of anchorage between physical and virtual locations.

Figure 4.1: The Great Wall of China community building project. Screen capture from *Plant the World* by Meyran Games.

4.3.3 Experiences.

The hybrid reality logics of *Plant the World* are underscored by the fact that similar behaviours were observed here as in the other two games. Early in gameplay, the first author was motivated to create a home base at the location corresponding to their residence, as well as smaller "holiday homes" at temporary places of residence. Due to the onscreen navigation capabilities, this home base extended for several hundreds of metres north and south. Other players' bases were present in their vicinity, but the first author did not interact with them beyond visiting.

As they became more familiar with the aesthetic features of different trees and decorative buildings, they increasingly played with the idea of remodelling familiar spaces as unfamiliar plant-scapes. By 19 October, about two weeks after starting to play, they had begun creating a neighbourhood of trees and buildings around their home base.

Over the course of several months, the first author crafted the settlement in the area around their neighbourhood (Figure 3.2). This process was a slow and oftentimes painstaking one, with tree seeds having to be gathered before planting, and then individually placed, after which they took time to grow. Emotions emerging from this project included pride, satisfaction, and immersion, as the act of carefully remodelling the neighbourhood into a plant-scape reframed its aesthetic traits by the player's vision, shaping the experience of walking through it.

Figure 4.2: The first author's home base in Plant the World, nearing the end of the play period. Screen capture from Plant the World by Meyran Games.

On the official *Plant the World* server, other players shared a similar tendency of building "home bases" at home, sharing screen captures to a dedicated channel. That said, it was observed that some players occasionally chose to build bases at locations other than their place of residence: in that sense, the game was played by some as a purely virtual experience.

At the same time, the first author observed that players often brought existing place-attachments from the physical layer to the virtual one. As mentioned earlier, the first author chose the City Botanic Gardens as a site for planting due to its existing place-attachments. They also used these place-attachments as inspiration for subsequent projects, for instance placing in-game docks at ferry terminals along the Brisbane River. This tendency for mimesis in the virtual layer is also observed among the broader community, for instance recreating the Great Wall of China and Liberty Island. Even given the tools to craft space and place in a hybrid world, players often seek to recreate physical structures in the virtual layer, thereby strengthening the semantic linkage between them.

Nevertheless, majority of players' placemaking projects, including the first author's, tend instead to reframe geographical space as a blank canvas, and the resultant projects often re-envision urban space in a creative, player-driven vision, informed by the game's focus on agriculture and botany. This thematic focus on plants bears more examination: just as Ingress' competitive and ideological framing supports territorially-charged interactions, a focus on planting in *Plant the World* either fosters or gestures to the game's interest in cultivation, patience and slowness.

5 DESIGN IMPLICATIONS

In this section, we draw out patterns and themes from our autoethnographic analysis of the three games that inform a set of implications for design, which reconsider locative mobile games as agents of pla(y)cemaking. These design implications develop and elaborate upon the hybrid realities framework by de Souza e Silva [78], illustrating how that framework is—and may potentially be—materialised through the design of locative mobile games.

5.1 Physical anchorage

In Tuan's words, "Human relationships require material objects for sustenance and deepening" [82]. This theme emphasizes de Souza e Silva's theme of new spatial logics in hybrid reality games: through this study, we have found that games establish the hybridity of the play experience by scaffolding homology between virtual and the physical elements, a feature that distinguishes locative games from other games as a medium for profound encounters with space [67]. In all three games, this is achieved through a mimesis between virtual and physical layers—whether in the form of developers binding points of interest to physical landmarks and organising in-person community gatherings, or as player efforts to design space based on their existing place-attachments, via game affordances such as *Ingress*'s mission authoring system. Supporting some level of mimesis between the virtual and physical renders virtual objects as substrate on which relationships and places may be woven.

5.2 Slow mechanics

Patterns of slowness by design emerge in all three games, manifesting Apperley and Moore's "haptic ambience" [3] and reiterating de Souza e Silva's notion that hybrid reality games merge the space and time of play with those of the serious world. Slowness entails embedding time-dependent qualities in game constructs, such as: (a) gradual and accumulative building, seen with the layered flower gardens of *Pikmin Bloom* or the slowly-growing trees of *Plant the World*; (b) persistence, where player-led changes to the landscape do not disappear instantaneously between play sessions, as with *Plant the World*'s trees; (c) and gradual decay, such as with the degradation of Portals in *Ingress* and the disappearance of flowers in *Pikmin Bloom*. Such traits both support an ambient and dispersed style of play, and support players' sustained efforts to craft space around habits, needs and preferences—a feature core to the establishment of a sense of place [70,82].

5.3 Ownership

De Souza e Silva describes how hybrid reality games outline a logic of ad-hoc social organization among its players. Our findings demonstrate that locative games can anchor such organization in localities through themes of ownership: when locative games allow players to tag locations with their in-game identities, personal connection to and ownership of places can form, as well as social recognition of fellow players "in place." This element is more present in *Ingress* and *Plant the World*, where discrete spaces are "owned" by a given player, and less so in *Pikmin Bloom*. Ownership is specifically supported by the "magic circle" of play: whereas in location-based social applications such as Foursquare, a similar act may be known as geotagging or checking-in, the speculative framing and altered rules of reality in locative games allow for places to "belong to" players, and for players to inhabit imaginaries where they build or maintain these places. Deeper sentimental connections can form than can be found in the act of appending one's name to points on a map, although developers and players must often negotiate the trade-off

between identity and privacy when implementing such a feature [13,21].

5.4 Co-construction

The idea of co-construction here borrows from the term used by Nitins and Collis [67] to describe the process by which players collaboratively create layered meanings in space through locative media. De Souza e Silva outlines the notion that mobile technologies can scaffold new social logics within the public space of the game. All of the games studied incorporate mechanics of accumulative and collaborative physical inscription in public space, whether through explicit co-constructive negotiations between players or through the accretion of efforts. *Ingress* players build on each other's links to create interlocking control fields, and recharge each other's Portals. *Pikmin Bloom* players create layered flower gardens together. *Plant the World* players can collaborate to build large building complexes. The crafting of space becomes a collection of social negotiations, not only driven by the needs and desires of participants but also by shared and conflicting priorities with other proximal players. These activities foster social bonds in space and become the fabric of place. As part of maintaining the player critical mass to foster co-construction, it is important for games to consider strategies for user retention, such as fostering player loyalty by supporting the development of social networks surrounding the game [34]—as demonstrated, for instance, by *Plant the World*'s official Discord servers.

6 CONCLUSIONS, LIMITATIONS, & FUTURE RESEARCH

In our research, we reviewed the literature that connects locative mobile games with slow, careful placemaking, and related these concepts to the playable cities vision of urban space. We then employed an autoethnographic approach to investigate three games, *Ingress*, *Pikmin Bloom* and *Plant the World*, discovering how each game supports careful pla(y)cemaking. From these investigations, we synthesised and described four implications for design pertaining to locative mobile games as pla(y)cemaking agents, elaborating on de Souza e Silva's themes of mobility, sociality, and spatiality. These design implications may be attended to by locative game developers to support pla(y)cemaking.

Findings in this paper emerge from gameplay in a relatively dense urban area, where both player communities and points of interest are more accessible [47] and may not be generalisable to experiences in less dense areas. Additionally, the games were played simultaneously, oftentimes all three on the same day; this may have impacted the findings by reducing the focus devoted to each individual game, and potentially exaggerating similarities and themes-in-common discovered among the three games.

Despite our optimism about locative mobile games as technologies that can intertwine serious life and play, the "magic circle" is never fully dissolved, and many issues emerge from frictions between these layers in locative games. The form and structure of both physical and virtual space affect the spatial practices that they support [15,80]. Social inequalities shape locative gaming experiences [51,54], as seen when underserved neighbourhoods are neglected by these games due to a lack of point-of-interest data [47]. Semantic linkages are also broken when places that appear accessible in the virtual layer are obstructed by physical or social limiters of mobility and safety [77]. Games may adapt to emerging limiters; for instance, during the COVID-19 lockdowns, many players were unable to physically visit points of interest and locative mobile games responded by incorporating new mechanics such as onscreen movement controls, as in *Plant the World*, and remote interaction, as with *Ingress*' drones.

This paper does not address concerns surrounding privacy in locative applications, of which there is rich discussion in the scholarship [13,21,42]. Locative applications create an imperative for the user to make available their location data, from which others may derive biographical information about the player [21], potentially sabotaging the trust necessary to foster social networks through play. Further research may investigate how games with a cultivative element differentially support the placemaking efforts of players who invest different amounts of money and time in games, how spatial gatekeeping can become replicated in locative game space, and how privacy and trust can be negotiated between players and the game.

As global smartphone adoption continues to rise, we will likely see locative mobile games gain an increasingly foundational cultural impact. A strong knowledge of the unique opportunity they represent, to cultivate communities and layered places and through play, will foment game experiences that deeply enrich the spaces where we live.

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4.3 POSTSCRIPT

As this thesis project's exploratory venture into virtual placemaking, the main findings of "Pla(y)cemaking with Care" within the context of the thesis were **four design implications** for how digital media shape and facilitate bottom-up placemaking: Slow Mechanics, Physical Anchorage, Ownership, and Co-Construction. They also emphasised that the playfulness of the location-based experience was not negligible but a key facet that modulated the placemaking experience towards the transformation and reimagination of spatial practices.

Together, these findings offered a foundation for understanding placemaking with a playful digital element, and the four implications for design provided a "handle" for translating the ideas from the prior literature and creative context into a study plan that could support context-sensitive design research work.

Chapter 5: Worlds Apart, Together: Discovering Players' Placemaking Priorities in Cooperative Terraforming Games

This chapter is the first of for (Chapters 5 through 8) making up what would be called the data collection section of a conventional thesis. All of these chapters are presented as publications from the thesis' publication plan. Their contents are included verbatim with each manuscript's original formatting.

The context-setting phase signified by the Literature and Context Review (Chapters 2 and 4) clarified a research gap at the intersection of translocal digital relationship practices and bottom-up virtual placemaking. To begin characterising and structuring this new research space for subsequent inquiry, I undertook an observation and analysis study—presented here as Publication 2: "Worlds Apart, Together"—towards producing a theoretical framework to scaffold the subsequent research work.

5.1 PREFACE

Within the Preparatory phase of this research project, the study associated with Publication 2: "Worlds Apart, Together" had the main goal of translating prior theories of *physical* place into a framework for appraising *virtual* placemaking contexts. It was clear from the earlier context review (Chapter 2) that knowledge about virtual places would be enriched by a finer understanding of the bottom-up processes which dwellers use to cultivate such places. A study of virtual places that analysed those very virtual places through relational ontologies of place was heretofore not identified in the scholarship. One of the four themes emerging from the context-setting study (Chapter 4) in particular—Slow Mechanics—reminded me of past personal encounters in the sandbox video-game *Minecraft* (Persson & Bergensten, 2011). Indeed, a parallel theme of change/alteration was noted by (Quiring, 2015) in a study of placemaking in *Minecraft*.

The slow, sentimental attachment–driven creation of places has been evocatively described by Tuan (1979) as the cultivation of "fields of care", gradually moulded into a

place through repeated traversal and habit fields. This description of placemaking coheres with Stuart Brand's (1995) notion that buildings "learn" from their inhabitants, coming to remember their histories, habits and needs through processes of gradual alteration. Thinking about *virtual* placemaking with these concepts, there was an opportunity to learn how the sentimental and material processes cross-inform each other within the dweller-led creation of virtual places.

Placemaking in virtual worlds, and particularly the material processes involved, had often been researched as top-down strategic work enacted by game designers (Álvarez & Duarte, 2018), whereas this thesis' context review reiterated the importance of dwellers' perspectives in this relation. However, little research offered a bottom-up view focusing on dweller-driven configuration. Quiring (2015) had previously examined community-level processes and social formations in the sandbox game *Minecraft*—that is, addressing the social and intersubjective elements of placemaking—but did not explore how these shaped the tangible configuration of the virtual world's geography. Similarly, Coulson et al. (2020) considered the sentimental attachments that identify virtual places as homes, but not the ways that digital homes themselves may have been configured in tandem with the dwellers' priorities. Especially in a virtual context, place is produced not only by human concerns inhabiting a passive space/medium, but by active reconfiguration, and by the space/medium itself structuring the habits of dwellers (Dourish, 2006b). I saw a need to map virtual placemaking in relation to the kinds of dweller-led place configuration seen in (physical) geography and architectural studies.

In Publication 2, I set out to discover the granular experiences, behaviours, and elements (Dena, 2017) implicated in how player-dwellers made virtual places. By studying the quasi-material alterations within the sandbox video game environment of *Terraria* (Re-Logic, 2011), I sought to refine a precise understanding of how dwellers translate their place-attachments into alterations of material space, and how the pre-existing space reciprocally shaped those alterations. The following publication reports on this theory-forming study, which deployed observation and analysis methods to extend Quiring's (2015) work and contemplate virtual placemaking through relational views of place.

5.2 PUBLICATION

Publication 2, "Worlds Apart, Together: Discovering Players' Placemaking Priorities in Cooperative Terraforming Games" (Low et al., 2023), is presented starting on the next page, preceded by a statement of contribution of co-authors:

STATEMENT OF CONTRIBUTION OF CO-AUTHORS

The authors listed below have certified that:

1. they meet the criteria for authorship and that they have participated in the conception, execution, or interpretation, of at least that part of the publication in their field of expertise;
2. they take public responsibility for their part of the publication, except for the responsible author who accepts overall responsibility for the publication;
3. there are no other authors of the publication according to these criteria;
4. potential conflicts of interest have been disclosed to (a) granting bodies, (b) the editor or publisher of journals or other publications, and (c) the head of the responsible academic unit, and
5. they agree to the use of the publication in the student's thesis and its publication on the QUT's ePrints site consistent with any limitations set by publisher requirements.

In the case of this chapter: **Worlds Apart, Together: Discovering Players' Placemaking Priorities in Cooperative Terraforming Games (published 10 May 2024)**

Contributor	Statement of Contribution
Amari Low	Conceptualization, methodology, data collection, data analysis, writing (original draft, review and editing)
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Worlds Apart, Together

Discovering Players' Placemaking Priorities in Cooperative Terraforming Games

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ABSTRACT

As more people take to networked technologies as primary sites of relationship deepening, it becomes increasingly important to examine how we design these technologies for connection over a distance. This article presents a pilot study looking at how players build homes together in video game environments. Drawing on phenomenological studies of architecture and geography, we observe and analyse how remote players cooperate to build a virtual place of dwelling in the game Terraria. Via observational and focus group data, we consider how players negotiate their priorities and social relationships throughout the process of creating a shared place of habitation. From this data, we extend Tyler Quiring's three themes of virtual placemaking into five virtual placemaking priorities—Making more precise; Establishing a centre; Cultivating fields of care; Communality, and; Building as dialogue—to describe how cooperative space configuration activities function to anchor both player-player and player-place relationships. Our findings shed light on how video games can uniquely support placemaking as a means of achieving meaningful co-presence over a distance, offering valuable insights for future design and research into virtual worlds.

CCS CONCEPTS

• **Human-centered computing** → **Collaborative interaction**; **Collaborative and social computing design and evaluation methods**; • **Software and its engineering** → **Interactive games**.

KEYWORDS

virtual placemaking, sandbox games, co-presence, phenomenology, game studies

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1 INTRODUCTION

Driven by rising migration rates and advances in communications technologies, online digital spaces are increasingly being cohabited by families and partners as primary spaces of relationship deepening. Accordingly, the question of how we design for these connections is coming to the forefront in HCI research. While there has been much academic interest in information communication technologies (ICTs) as sites of **mediated co-presence** and virtual togetherness, little scholarship recognises how video games uniquely support **virtual placemaking** as a strategy for such co-presence.

This article presents a pilot study within a wider research project aiming to address that gap. It centres around terraforming games, a video game subgenre where players cooperatively configure virtual landscapes. These games allow for a kind of virtual placemaking that foregrounds relationality—where, in the act of configuring spaces, players negotiate and establish their relationships with and within the shared space.

Amid a growing number of relationships sustained in the digital media spaces, ICTs are becoming better understood as mediators of relational practices [2, 4, 17, 21, 24]. The COVID-19 pandemic accelerated the adoption of virtual spaces, including games, for connection with peers and family [1, 22, 32, 38]. *Animal Crossing: New Horizons*' remarkable popularity in the early months of the pandemic signifies this trend [30, 43]. In this game, players are tasked with running an island village, and may choose their own goals to pursue, including terraforming—altering the very geographical form of the island [43].

New Horizon joins the likes of *Elite* [5], *SimCity* [27], and *Minecraft* [33] under the umbrella of sandbox games, a genre characterised by "undirected free play" [7]—where, rather than having objectives prescribed to them, players are afforded the freedom to imagine and pursue their own goals. Our work is interested in one subcategory of these, which we term **terraforming games**. In these games, all geographical structures, from cliffs to caves, are quantised into manipulable blocks, allowing players to reconfigure the physical landscape with almost unlimited freedom [35]. While *Animal Crossing: New Horizon* has some elements of a terraforming game [43], other popular titles fully embody this subgenre, such as *Minecraft*, which has an estimated 141 million players [9], and *Terraria* [36]—the focus of this paper, with an estimated 66 million players [28].

By allowing multiple players to alter the same world, terraforming games uniquely support cooperative place construction among remote players. Exemplifying the depth and robustness of these mechanics, the *Build the Earth* project [34] has seen players across the world collaboratively recreating several real-world cities in *Minecraft*.

It is well-understood that virtual game worlds often take on qualities of 'real' space and geography [3, 11, 14], Correspondingly, the **virtual placemaking** that occurs within games—encompassing material processes (physical configuration, customisation) and social ones (development of relationship and habit networks)—has been analysed in the literature [35, 44]. In some cases, games have even been noted as agents of placemaking in the 'real' world [14, 25].

In this context, terraforming games promise new insights about the configuration of space as a relationship-anchoring practice.

Because players can simultaneously build and dwell, building outcomes may more readily reflect the relational needs that drive placemaking practices. By holding a phenomenologist lens to them, we aim to clarify *how* these space configuration practices render spaces emotionally legible [31, 37, 40], and anchor players' relationships, memories, and habits. By observing placemaking *in situ* in virtual game space, we may arrive, in turn, at insights about placemaking in general.

As mentioned before, past research [25] has found that the play-element of video games can help foster a sense of attachment to places in the 'real' world. This pilot study investigates the reciprocal relation: how relationships among players shape the configuration of the virtual game world. It aims to answer the following questions: **What can observations of cooperative space configuration in a virtual world reveal about placemaking as a relationship-anchoring practice? What new insights can we glean about placemaking in virtual worlds by considering it through a phenomenologist geographical lens?**

To approach these questions, we employ an observation and analysis study of gameplay in the game *Terraria*. To structure our analysis, we draw upon Quiring's [35] three themes for placemaking in virtual worlds. As Quiring's study focuses on player-player relationships rather than the alteration of space itself, our study also aims to extend Quiring's framework by intersecting it with phenomenological approaches in geography and architecture research.

This article begins by framing the study in phenomenological theories of place (Section 2.1), the applicability of geographical approaches to virtual environments (Section 2.2), and frameworks for analysing placemaking in games (Section 2.3). We then summarise the methods employed in our observation and analysis study (Section 3) and subsequent findings (Section 4.1), which we use to extend Quiring's framework into five placemaking priorities (Section 4.2). Finally, we conclude by considering possible future directions for the wider research project (Section 5).

2 THE LITERATURE ON SPACE AND PLA(Y)CE

This section summarises the academic context for our study by considering literature under the following topics: (i) phenomenological theories of space and place in the 'real' world (Section 2.1); (ii) arguments for applying geographical frameworks in games research, particularly phenomenological and experience-centred ones (Section 2.2), and; (iii) two frameworks for structuring our analysis of game observational data: Quiring's virtual placemaking framework, and Dena's EBE framework (Section 2.3).

2.1 Phenomenologies of place

The concept of place, as it is used in Western humanist geography scholarship, proposes to understand physical space in terms of how humans make meaning of it. Tuan [40] describes some places as "fields of care," cultivated through nets of repeated practice and sociality, or "habit fields." In his view and that of his contemporary Edward Relph [37], *place* is fostered in networks of social attachments, habits and interconnected experiences among its residents, which organise it into a site of meaning.

Christian Norberg-Schulz [40] elaborates on the processes by which human attachments organise places into fields of meaning. He suggests that places quintessentially have a character or "spirit" which emerges through the gestalt of its physical elements. In other words, a place is a quality of space that emerges when experienced as a whole, and cannot be understood from its material parts. Through boundary-marking "enclosures," we understand when we experience a location as a place, as opposed to an undifferentiated part of the landscape.

These phenomenological frameworks are implicated in the study of **placemaking**, or how spaces become places. Research has considered two dimensions of placemaking: (i) the social, as outlined above, and; (ii) the material—how through gradual customisation, dwellers shape their dwellings around their memories, habits and attachments [13, 39].

Regarding the latter, Stewart Brand [6] describes how buildings "learn": they are living accumulations of experiential information, physically recording their inhabitants' needs and behaviours. Brand also considers how "vernacular" buildings—designed by those without formal architectural training—embody cultural ideas about what a house *should* be.

Altogether, the literature asserts that places are intrinsically *relational*. The inhabitants' attachments, habits, relationships, and subjective understandings of a given place—collectively **place-attachments** [37]—fundamentally shape its physical and social configurations throughout its lifetime.

2.2 Terraforming games as analogies for architecture and landscape

An experiential approach to place opens the door to understanding *virtual* places through a similar lens [35]. One may consider how terraforming game worlds are experienced similarly to 'real' life. Elements constituting the game's landscape, while programmatically generated, often share key experiential traits with real-world counterparts. For instance, in both *Minecraft* and *Terraria*, water reduces one's movement speed and suffocates submerged players after some time, while light increases visibility and reduces the chance of accidents with environmental hazards. The effect on players' behaviour, in many cases, mimics real life: players build bridges over water and light up dark spaces.

More than physical similarities, however, these games are also *socially* analogous to real life. Like urban locales, games are ecosystemic spaces designed to mediate human experience and interaction [3]. Particularly in multiplayer worlds, avatars orient the player's sense of self within the virtual landscape [23], so that their relationships with the public game space are also socially constructed. A recent study by Vuong et al. [43] has shown that players' attitudes towards game environments reflect their attitudes towards 'real-world' environments: a player with environmentalist views is more likely to treat nature with care even inside a virtual world.

Due to these correspondences, games are increasingly being appraised through frameworks of geography, and recognised as tools that can hold profound insights for physical placemaking [44]. This is signified by how *SimCity* and *Second Life*, two prototypic sandbox games, have been reappropriated as tools in urban planning education [15, 26]. Although traditional approaches to games research have viewed games as a material outcome of the design process [20], Ash and Gallacher [3] suggest a holistic, phenomenological approach that considers games as cultural geographies: experiences emerging from players' interaction with game elements, producing cultural dynamics both within and beyond the game space.

Even as games mimic aspects of physical geographies, they also intervene with alternative framings of space and place. Dourish

[11] underscores the fundamental role of platform design in structuring how players engage with the virtual spaces and cultural phenomena they mediate. For terraforming games, the ability to alter geography on a scale impossible in real life allows slower placemaking processes to unfold in a short time frame. This affordance of terraforming games presents a rich opportunity to study how relational priorities can drive space configuration.

2.3 A relational placemaking sandbox

Our study focuses on cooperative space configuration—namely, the building and customisation of virtual architecture and landscapes—as a virtual placemaking practice that has not been extensively studied.

As discussed earlier, terraforming games allow players to reconfigure the game's geography with little restriction [35]. In *Terraria*, the quantisation of the landscape into rearrangeable blocks facilitates players in designing, constructing and inhabiting spaces simultaneously. Consequently, players may realise architectural ideas that emerge directly from their needs and preferences.

In a multiplayer setting where every player has an equal ability to alter the shared space, players must often also negotiate differing priorities as they do so [35] and attempt to come to agreements about them. Such negotiations are a crucial scaffold for a cooperative game [8], wherein the players operate in tandem towards mutual beneficial outcomes. For the game to be cooperative, they must be allowed the ability to form agreements about their respective building goals.

Being both the medium and outcome of cooperative placemaking, customised spaces in terraforming games could function as records of the player-dwellers' relationships and cooperative engagements, which drive the reshaping of these spaces [6] and become anchored in them in turn [40].

To structure our approach to inquiry, we engage Quiring's [35] three virtual placemaking themes, which emerge from an earlier study about how cooperative gameplay shapes social negotiations of place. Developed through a formal analysis of gameplay in *Minecraft*, Quiring identifies three themes that characterise placemaking in virtual worlds:

- **Change/alteration**: Players configure the game world to create meaning out of the environment, reaffirming their relationships with the world.
- **Identity/proximity**: Players orient themselves within the world both spatially and socially, undertaking play as a social practice which virtual space mediates and shapes. Humans *orient* themselves in the world and *identify* with it.
- **Conflict/cooperation**: Co-presence with other players mediates players' understandings of place, by affecting their access to resources. Creative behaviours are undertaken in dialogue with other players.

The above study focuses on how the sociality of the multiplayer space affects players' behaviours, without detailing the practices and outcomes of physical space configuration themselves. We seek to extend Quiring's framework by intersecting it with phenomenologist geographical thought, to capture the interplay of material and social processes in placemaking.

Our analysis is also inspired by the principles of Dena's EBE (Elements-Behaviour-Experience) framework [10], which supports activity- and experience-centred game analyses. An experience-centred view allows us to understand the game's tangible *elements*, the *behaviours* that emerged through interaction with the game, and the players' *experiences*, as an interdependent whole. Because a gestalt understanding of both place and games is key in our theoretical frameworks, we apply EBE by framing our data through the players' experiences, rather than a formal analysis.

The above theories and framings set the context for our approach to cooperative space configuration in game worlds, and how relationality shapes this process. The next section explores how our observation and analysis study has been designed to support such an experience-centred framing.

3 METHODOLOGY

This pilot study aims to uncover preliminary findings that will inform future stages of a design research project on playful virtual placemaking as a connective strategy. It aims to establish and verify how relational concepts of geography and architecture are reflected or contrasted in virtual places, and guide how we apply those principles in future stages.

This study entails an observation and analysis of gameplay in the video game *Terraria*. The study design and the accompanying literature review were produced collaboratively by all three authors. As this is a qualitative pilot study for distilling themes for future design work, and given our focus on relational engagements between strangers, our foremost priorities were depth and richness rather than statistical generalisability [18]. We chose a cohort of two to four participants to support cultivation of genuine trust and rapport with participants [29] and capturing more detailed longitudinal data about their cooperative interactions, allowing for a fine-grained qualitative analysis.

Upon receiving ethical clearance, the first author reached out to members of their *Minecraft* game communities, whose prior understanding of terraforming games would support a seamless introduction to *Terraria*. Two participants accepted the invitation to participate and were enrolled in the study. Both participants were based in different countries, had no prior contact with each other, and had not previously played *Terraria*.

Four three-hour observation sessions with a total length of 12.5 hours were organised from August 2022 to May 2023 (Table 1), in which the first author was the main facilitator, being knowledgeable about *Terraria*. All four sessions were played in a singular persistent

Table 5.1: Vital statistics for the four game sessions.

Game session	Date	Start time[1]	Duration	Participant locations
Session 1	19 August 2022	16:30	3 hours 30 minutes	Australia (Researcher, P1), Netherlands (P2)
Session 2	21 August 2022	17:00	3 hours	Australia (Researcher, P1), Netherlands (P2)
Session 3	9 April 2023	18:00	3 hours	Australia (Researcher, P1), Singapore (P2) [2]
Session 4	14 May 2023	18:00	3 hours	Australia (Researcher, P1), Singapore (P2)

[1] Times are given in Australian Eastern Standard Time. [2] P2 moved from the Netherlands to Singapore between sessions 2 and 3.

Terraria instance, where the first author and the participants created and played as character avatars. Gameplay was guided by the specified goal of constructing a shared home base. The first author facilitated as a player inside the world, assisting participants with gameplay mechanics, keeping players on track with the goals of the study, and making observational notes about gameplay activities. They avoided directing any creative decisions and allowed players to make decisions and ideate without their direct input.

As the participants were based in geographically remote locations, all data were recorded digitally. Due to the technical difficulties of recording 12 hours of game footage, we opted to record building progress through series of still screen captures using the Windows OS's native screen capture tools. During gameplay, all communication took place within the game's text-based chatroom, making it a comprehensive log of verbal interactions. These conversations were retrieved as text log files.

After gameplay, an asynchronous focus group discussion was held via a private Open Source Social Network (OSSN, Figure 5.1) instance to gain a deeper understanding of the players' thoughts, emotions and interpretations of gameplay experiences. With features such as comments, likes and reacts, the OSSN platform supported conversational discussion amongst the geographically-distributed participants, similarly to how web forums have been employed in past research [41, 42]. During the focus group, participants were asked several prompt questions about the building process. They were asked to label a map of the built area, to uncover similarities and divergences in perceived identities of spatial regions.

Figure 5.1: An excerpt of the focus group discussion on OSSN.

Two types of data were recorded: image data constituting 102 progressive screen captures of game footage, and text data documenting conversations among the first author and the participants, from both the game sessions and the subsequent focus group. Screen captures were imported into Paint Tool SAI where cross-sectional diagrams of player-constructed buildings were hand-traced for clearer visualisation. Text data were imported into NVivo for analysis of word frequency and themes using its coding tools. Research data, diagrams and the game world file have been made available to the participants. Below, we report the findings of our study.

4 ANALYSIS OF OBSERVATION FINDINGS

This section outlines our findings and analysis. Section 4.1 summarises pertinent observations, and Section 4.2 organises them into five **virtual placemaking priorities** extended from Quiring's three themes. Each placemaking priority is examined through the lens of place phenomenology, using observational data to anchor connections.

4.1 Observations

At the start of the first session, the first author (henceforth referred to as "the researcher") built a protective enclosure to secure the starting area against hostile creatures while the participants learned the game's controls (Figure 5.2). Over time, participants altered and refined this structure into a building they referred to as the "house," "home" and "mansion." This building became differentiated into rooms, including a "ballroom," a "mezzanine" and a "kitchen" (Figure 5.3), and extended underground. In the third session, the participants added a "treehouse" adjacent to the original house, and in the fourth, a "wizard tower" ascending from the top of the main house.

Across 12.5 hours of gameplay, a wide range of negotiations and other social encounters were observed. Underlying intentions and emotions were clarified through the focus group discussion. Most, if not all, of these activities were easily tagged with Quiring's three themes, and further, we found that they fell under five broad categories, which we call **virtual placemaking priorities**.

4.2 Virtual placemaking priorities

As presented in Table 5.2, five virtual placemaking priorities were identified from categorisation of observational data. They are: (i) Making more precise; (ii) Establishing a centre; (iii) Cultivating fields of care; (iv) Communality, and; (v) Building as dialogue. These placemaking priorities bridge Quiring's three themes with phenomenologist concepts in geographical research; in this section, we elaborate on those connections in full.

4.2.1 Making more precise (extending change/alteration). In Terraria, the pre-generated landscape is made up of ground, trees, sky, and geological formations. These structures can be manipulated by players on a block-based level, activating Quiring's change/alteration theme.

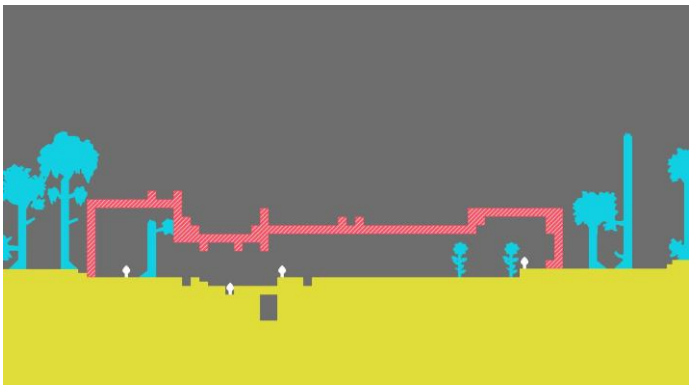

Figure 5.2: The protective enclosure built by the first author. Image created by the first author, hand-traced from screen captures.

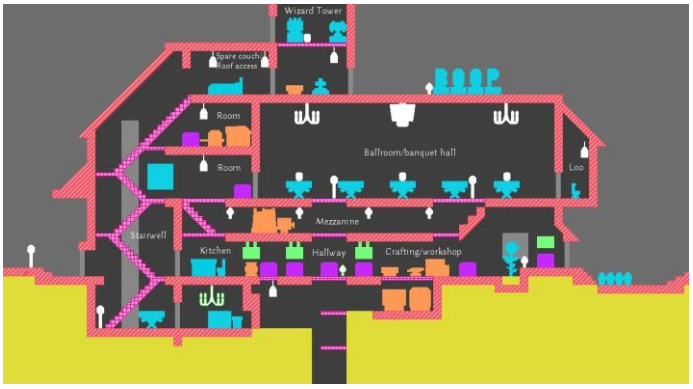

Figure 5.3: The house at the end of gameplay. Image created by the first author, hand-traced from screen captures.

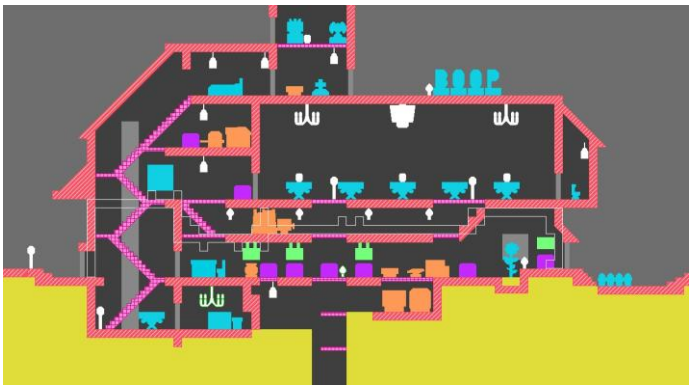

Figure 5.4: The shape of the initial enclosure (white outline) superimposed on the current house. Image created by the first author, hand-traced from screen captures.

Table 5.2: Virtual placemaking priorities categorised along Quiring's three themes

Virtual placemaking priority	Theme (Quiring)	Observations	Participant quotes
Making more precise	Change/Alteration	Participants looked to pre-existing spatial features to direct their building ideation and activities. In some cases, players sought to blend structures with the landscape: P1 grew grass and trees on the roof of the treehouse when it was complete, viewing it as the game world "adopt[ing]" the structure. In other cases, alterations elaborated on built spaces: the walls of the initial enclosure (Figure 5.2, red-striped) gradually evolved into the present house structure, with gable roofs, rooms, and stairs (4). The rooms were then gradually revised to clarify their identities: a table and food chest were placed around the cauldron to distinguish the space as a kitchen.	Focus group: P1: Being able to grow trees on the roof was well worth the wait, it made the process feel much more satisfying. Feels like the game has adopted some of our construction. P2: A glass roof also lets the inhabitants see the weather vane from inside the tower! P2: I think I just picked up cues and put down stuff I hoped would match the theme.
Establishing a centre	Identity/Proximity	As the initial protective enclosure was refined into a building, the participants used language indicating that they saw it as their home, and described returning to it or bringing findings back. A dirt room became a display area for subterranean findings such as monster banners and dynamite; another was set up as a study room with stone walls, a desk, and an electric lamp. Participants discussed and invented ways to display decorative items found during their travels. They subdivided the wizard tower into 33 themed rooms and curated a collection of items from their hoard to display in the appropriate rooms. These items had no functional purpose beyond aesthetics, and served as a showcase of their travels, or project their decorative instincts.	Chat log: Researcher: I just got a sunflower painting P2: put it up at home P1: [I] can bring the gold back if that helps P1: also on that note [I] brought back a wood and leaf wand P1: what vibe would you like the tower to be? [Like] ascending stairs, eccentric collection P2: yes! eccentric collection sounds ideal [...We] can set out all the weird stuff we collected along the way
Cultivating fields of care	Change/Alteration	Players preferred to preserve the general configurations of rooms, walls, furniture, and decorations after they were laid down, rather than "remodelling" as new needs emerged. New structures tended to be added to the margins of the building, rather than disrupting or changing boundaries of rooms. Notably, the mezzanine, which began as a dip in the ceiling of the enclosure (Figure 5.3), remained till the end of gameplay, despite being inefficient to traverse. Access platforms (pink-hatched) were added to allow players to pass through vertically. Functional items that saw frequent use (such as crafting tables) were preserved in their original locations throughout the sessions, as was a sunflower planted on the ground by P2. At the focus group discussion, both players noted an emotional attachment to the sunflower, with P2	Focus group: P1: I'm amazed how many little things from the start dictated how the house felt... full remodelling [wasn't] an option though! P2: I would never in a million years remove the sunflower (except if we wanted to relocate it to a place of honour)...it's *special*

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Cultivating fields of care	Change/Alteration	calling it “special” and P1 expressing relief that they had not accidentally removed it.	P2: it was mostly not seeing a need to move [crafting tables] (there wasn’t a moment where someone said ‘if the work table was closer to this room it would be more convenient’...Also I think the house/other decor continued growing around those items so it would have felt hard to uproot the furniture
Communality	Conflict/Cooperation	Participants felt that building had been a collaborative effort. The text chat saw constant use, withs an average of 5 messages per minute across all sessions. Through verbal discussion, participants negotiated mutually favourable alterations to the building, and handed off aspects of building that they did not enjoy. P2 often initiated new structures and asked for permission and progressive feedback. P1 often asked for clarification or opinions on how to decorate the interiors of these structures. To balance out surpluses and deficits of resources, players created a system of communal item chests based on function or theme. For instance, food, plants, and potions were deposited into a “consumables” chest in the kitchen. Each chest was labelled using a signboard, acting as a method of asynchronous communication and allowing all players to operate seamlessly from the public pool of resources.	Chat log: P2: [I] will make a sort of scaffold and then I will need your collective big brains regarding…interior decor!P1: what vibe would you like the tower to be? [Like] ascending stairs, eccentric collection P2: yes! eccentric collection sounds ideal Focus group: P1: It was great to have a space to fill, the getting-started on construction is often the toughest part for me. I tend to build very square boring structures, so having an interest[ing] piece (the wizard tower) to work with was great! Focus group: P2: Building things is a very daunting thought for me and I’m usually happier gathering materials and letting other players build. It was really cool to see it take shape. P1: I remember the paint for the banquet hall was discussed in detail. P1: Themed rooms to match walls were definitely a collaborative effort. Gravestones, beds and other decor filled some rooms, and I scrounged together some crafting to attempt to fill the others.

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Building as dialogue	Change/Alteration,Identity/Proximity, Conflict/ Cooperation	Participants brought differing interests, intentions, and assumptions to the building process. Through a mix of verbal discussion and development of visual cues, participants negotiated identities, purposes and visions for various regions in the building. For example, both participants discussed and agreed on the structure, wall materials, and purpose of the wizard tower, while autonomously and procedurally decorating smaller rooms based on their implicit identity or character inferred from visual cues—a fluid dialogue of alterations. Participants gave regions of the building nicknames signifying negotiated meanings (such as "kitchen," "mezzanine," and "wizard tower").	P2: I think I might've seen some art of a wizard tower built on top of a cottage earlier and it stuck. At some point my mental image of the wizard tower morphed into a more modern tower…and of course that demanded a nice glass dome to go with it […] it was a whimsical decision. P1: Upon hearing about P2's wizard tower, my mind [immediately] jumped to the modern fantasy concept of a wizard having their tower be their hoard/storage. I'm a bit of a collector of things and would love to have more space to spread them out/display them. P2: Thank you for the interior decoration! That's not my strongest suit either so I'm glad other players had Ideas for the rooms.

Although the participants had total freedom to alter the world as they preferred, the way they approached space configuration was far from random; rather, it was almost always patterned on what already existed in the environment. For instance, players often demonstrated a tendency to attune their building activities to the natural landscape. We observed efforts to preserve the tree-likeness of the treehouse built in a forested area by growing plants on its walls and roof. P1 noted that doing so created the "satisfying" sense that "the game has adopted some of [their] construction." In another instance, the participants built a wizard tower projecting above the tree line, choosing to build the top floor out of glass. P2 saw this structure as an observation deck that "[let] the inhabitants see the weathervane from inside the tower."

In *Genius Loci,* Christian Norberg-Schulz [31] discusses how glass and windows make walls feel "immaterial," unifying the outside and inside. By making the sky visible through the walls, the tower interior was unified it. These behaviours are akin to what Norberg-Schulz describes (ibid.) as "mak[ing] natural structures more precise":

"…[Man] wants to visualise his 'understanding' of nature, 'expressing' the existential foothold he has gained. To achieve this, he builds what he has seen. Where nature suggests a delimited space he builds an enclosure; where nature appears 'centralised', he erects a Mal; where nature indicates a direction, he makes a path." [31]

As invited by *Terraria*'s affordances, players also responded to such natural inspirations by mimicking natural biomes within the built structure. Three rooms within the wizard tower were built out of dirt to imitate underground caverns, effectively creating pockets of wilderness interrupting the built space. These were then decorated with tombstones and dynamite as a gesture to past fatal encounters during underground explorations. Such whimsical ways of resolving the natural landscape through building illustrate how space configuration practices can help dwellers concretise and reflect upon their relationships with the world.

It was not only nature that was clarified through configuration. At other times, players undertook alterations to clarify the identities of *built* spaces that had not been fully resolved. As seen in Figure 5.2, the uneven enclosure built at the start of the game was gradually altered to be more "house-shaped" based on cultural understandings of what a house should look like: this building was, in effect, a kind of vernacular architecture [6].

Likewise, when one player placed a cauldron on the first floor, the area around it gradually became elaborated on as a "kitchen" in successive passes, with participants added suitable furniture such as a dining table and a storage chest containing food, gradually distinguishing its identity.

In all these cases, the process of space alteration was a way of resolving its "spirit." The builders looked for cues and motifs from what was there before and elaborated on them to make the space's character more precise. As will be discussed in the next few sections, this placemaking priority lays the groundwork for the rest.

4.2.2 Establishing a centre (extending identity/proximity). In Quiring's framework, identity/proximity encapsulates the idea that players seek to orient themselves within the game world both spatially and socially via their avatars. Paralleling this notion, Tuan [40] describes how one's home becomes a "centre" of self, around which one's identity and relationship with the world is oriented.

Our study found that practices of space configuration and dwelling helped players orient themselves within the game world. At the start of gameplay, the researcher constructed rudimentary walls to protect the participants against zombies. This enclosure began to take on qualities of a dwelling when the players began placing crafting tables and campfires within its walls.

In *Terraria*, enclosures protect players against hostile creatures, which thereby assert the experiential character of "outside": while players are not surrounded by walls, they are at risk.

At the same time, storage chests and recovery points, such as beds and campfires, assert the experiential quality of "inside": stationary sites to which players routinely return.

Participants began using language indicating they viewed the house as a centre—the start and endpoint of journeys. As they explored the world beyond, they began to accumulate a hoard of found items, which they brought "back home" for storage. In the fourth session, the participants agreed to put their memorabilia on display inside the wizard tower, curating a collection from their general hoard and then selecting the appropriate rooms to place them in.

Effectively, the house represented an anchor point around which player habits became organised over time, supporting the formation of habit fields [40]. Subsequent configuration and decoration allowed them to project their shared identity and memories through this central space, much like what has been noted in the 'real' world [39].

By building a house, centring activities around it, and decorating the space to project their experiences, the dwelling became resolved as their physical and experiential centre within the game world. Just as one's centre of self is anchored by places in the 'real' world, the players built a dwelling to establish their centre in this virtual world.

4.2.3 *Cultivating fields of care (extending change/alteration).* The quantisation of the world in Terraria necessitates that all structures be configured block by block. Carefulness and accretion are embedded in this method of building. In this study, structures morphed over time, and customisations were often driven by intertwining motivators of function and aesthetics, such that the buildings concretely recorded the dwellers' place-attachments. These observations raise a direct connection between Quiring's change/alteration theme and Tuan's [40] concept of fields of care: places cultivated through the slow, accumulative nurturing of networks of human connections, which become embedded in the space. This theme also relates to a process outlined by Brand [6] in which dwellings accumulate changes over time to remember the inhabitants' activities and habits.

On the pragmatic end of the scale, many furniture pieces with functional purposes, such as crafting tables, were never relocated after they were first placed. P2 talked about how the house seemed to 'grow around' those functional items, such that relocating them was unpreferable. Other things were preserved despite lacking a functional purpose. A sunflower planted by P2 in the first session was kept in its original position until the end of gameplay, without any verbal agreement among the players; the house was built with a gap in the floor to accommodate it. In the focus group, both participants noted emotional attachment to the sunflower and reluctance to remove it.

Even motifs in the building structure showed such inertia against change: the mezzanine was retained despite being inefficient to traverse. In the end-of-study discussion, P1 mentioned preferring gradual variation over complete remodelling—a statement that mirrors the phenomenon Brand describes, in which buildings evolve "in stages, not all at once" [6]. Even though rebuilding would not have been especially time-consuming, players chose to gradually reshape the existing structures to be easier to traverse instead.

These experiences appear to emerge more clearly because the builders of the space are also its dwellers, and are relationally engaged with the space. Objects and motifs are not meaningful by themselves, but rather gain meaning through the events and sentiments that dwellers associate with them. Because place-attachments rely upon the physical configuration of the space to sustain them [40], complete reconfiguration is not merely tedious—it also upsets those place-attachments. The structures and decorations of rooms anchor not only their character—as with the cauldron creating the kitchen—but also the players' relationships with the place itself.

4.2.4 *Communality (extending conflict/cooperation).* Under the conflict/cooperation theme, Quiring notes that the presence of many players in a multiplayer game shapes each player's access to resources, impacting their placemaking capabilities both cooperatively and antagonistically. In our study, the players' cooperative behaviours extended into communal approaches to building and dwelling, supporting the built space's function as a shared physical and experiential anchor point.

Such cooperation does not simply happen: it is dependent upon participants' ability to communicate and form agreements. Cooperative game theory studies note that a game is only cooperative if players have ways of negotiating binding agreements that empower sharing of resources towards mutually beneficial outcomes [8, 12]. Our study was premised upon one such (socially) binding agreement, wherein the researcher requested that participants *build a shared home base*. Without the pressures of limited resources encouraging competition, players readily adopted a cooperative attitude and engaged in frequent negotiation and agreements which, rather than being enforced by law, were founded on the implicit social contract of participation.

One important behaviour scaffolding this cooperation was item-sharing. One-to-one sharing of resources was observed by Quiring in *Minecraft*. In our study, the players negotiated to establish a communal pool of resources using item storage chests. They tended towards seeing building materials as a collective resource, as every player had surpluses of certain materials. Signboards and themed rooms (such as the kitchen) acted as mnemonics for the contents of each chest—perhaps even constituting a physical memory for the locations of shared resources, allowing players to share them seamlessly.

Another communal behaviour that supported placemaking was observed when players scaffolded and verbally discussed new structures before building them. Structures were rarely built without frequent consultation with other participants. In one instance, P2 began building a two-storey-height ballroom by scaffolding its outline with dirt blocks, consulting with the other participant and the researcher for opinions on its size and position, and then inviting them to contribute to building it. P2 undertook a similar process with the wizard tower.

Although initiated by one player, both structures were built with the direct, invited involvement of all players. Certain types of alterations prompted more verbal discussion than others, especially the addition of new buildings or extensions. These were typically changes involving the creation of new structures, or a fundamental alteration of the relationship between the building's parts (for instance, placing a large ballroom to the right of the attic, making it less attic-like). In these cases, the chat logs reflect extensive efforts among both participants to ensure mutual agreement before commencement.

Creative arts research illustrates how cooperative work invites synergies between the collaborators' strengths and ideas, resulting in better outcomes [16]. Synergy was demonstrated clearly in our study: participants stated that they were readier to commit to large-scale projects because they could rely on other players to shoulder the aspects of building that they struggled with, resulting in built structures that both acknowledged they would never have built alone. They discussed the cooperative element positively, calling it "great" and "really cool."

Supported by extensive communication, the participants were always navigating the social element of the place as they configured

it, and continually sought to re-negotiate shared, mutual place-attachments as the space evolved. By operating communally, participants distributed the material burden of the configuration process. Rather than being constrained by time, abilities, and resources, they were freer to pursue their preferred building goals.

4.2.5 *Building as dialogue (extending all themes).* All three of Quiring's themes are relevant in this fourth placemaking priority. Since the configuration of the game space can anchor dwellers' relationships (see Section 4.2.3), it follows that the space can be a record of the players' social negotiations, as well as an outcome of them. The previous section examined explicit verbal discussions where feedback and agreement supported major reconfigurations of space. A second, entirely implicit dialogue also scaffolded cooperation: one where players inferred each place's character from its structure, materials, and decorations, and iteratively elaborated upon those aesthetic cues to render the place's character with increasing precision (see Section 4.2.1). We refer to this as a **dialogue of alterations**.

During the focus group, the participants frequently mentioned "watching" spaces take shape, or "pick[ing] up cues" and following on what was already present. Such language evidences the improvisatory, procedural nature of this dialogue of alterations, where building activities and decisions were not deliberated upon, and yet the resultant outcomes constituted important or memorable features of the space. The kitchen that began as a cauldron emerged in such a manner: the participants did not discuss the space's identity as a kitchen, yet added kitchen-like furniture to it, and referred to it as a kitchen in the focus group discussion.

This type of negotiation relies on shared cultural preconceptions of the architectural vernacular: the idea of a kitchen was shared by all players, resulting in a frictionless development of that space. In other cases, preconceptions did not align, and a shared understanding instead had to be explicitly resolved before the dialogue of alterations could continue. The wizard tower exemplifies a transition between explicit and implicit modes of dialogue. So named by P2, the concept ofa "wizard tower" was initially interpreted differently by both participants, as noted in Table 2. Through verbal discussion, they eventually agreed that grey stone brick walls would suit the structure, and that it would be a suitable space for displaying the "eccentric hoard" found during their travels. As it was constructed, the players returned to a tacit dialogue, with P1 differentiating the floors of the tower with different wall materials, and both participants as well as the researcher adding furniture and decorations based on the inferred theme of each room, largely without discussion. Participants interpreted decorations and wall materials as anchors of thematic character, and elaborated upon them to incrementally clarify the legibility of each space.

The resultant built outcomes pastiche the players' aesthetic preferences and habits: for instance, a glass observatory dome (built by P2) is mounted above a cauldron room with large windows (decorated by P1) and lit up with stars in bottles (by the researcher). Both participants expressed satisfaction with the building outcomes, and enjoyment at having their work iterated on by other players. Neither participant felt that they had led the process, and yet the outcomes were indubitably directed by both in tandem. The positive response testifies to the effectiveness of these interwoven explicit and tacit dialogues as a strategy by which both participants gained a stake in cultivating meaning out of the shared dwelling.

These five virtual placemaking priorities together illustrate how the players configured space as a way of anchoring their relationships with each other and with the space. A varied suite of communication strategies supported cooperative alteration of space, negotiation of mutual place-attachments, and development of a shared existential centre within the game world.

5 CONCLUSION

This work undertook an observation and analysis study of cooperative space configuration between remote players in the game *Terraria*, followed by an online focus group to clarify player experiences. These observations revealed ways in which configuration of built space functioned to anchor both player-player and player-place relationships. From these observations, we considered connections between Quiring's three virtual placemaking themes and phenomenological approaches to physical geography. To encapsulate these connections, we then extended Quiring's three themes into five virtual placemaking priorities:

(1) **Making more precise:** Players tend to configure spaces in ways that clarify the character of what already existed there, both natural and artificial.
(2) **Establishing a centre:** Players build dwellings to orient themselves, spatially and experientially, within the mutable game world.
(3) **Cultivating fields of care:** Players alter spaces as they dwell in them (they are player-dwellers), such that these spaces become a physical record of their habits, memories, and place-attachments.
(4) **Communality:** Cooperative space configuration is scaffolded by explicit discussion and sharing practices that facilitate player-dwellers in operating towards communal, mutual goals.
(5) **Building as dialogue:** Cooperative space configuration takes place as a rich dialogue of both verbal discussions and tacit dialogues of alterations, by which all player-dwellers gain their stake in cultivating a shared place of interwoven place-meanings.

Many of these themes raise parallels between virtual placemaking and the types of citizen-led placemaking that sometimes occur in 'real' built environments [19]. Our study also revealed phenomena unique to placemaking in terraforming games, such as dialogues of alterations, which invite further study.

Being the preliminary stage of a wider research project, this study engaged two participants, and considered how constructing places together mediated the relationship between them, and how that relationship shaped the places they built in turn. Conflict was largely absent from this study. From Quiring's [35] work, we know that conflict can also emerge in the course of cooperative virtual placemaking. Additional findings may be uncovered with a larger cohort.

While efforts were made to ensure that the first author did not direct building activities, their involvement as a player may have affected the participants' decisions and demeanour. For instance,

walls built by the researcher at the start may have affected how players subsequently structured the space. Researcher involvement was important for understanding building and dwelling as experiences, and the participants' responses to the researcher's alterations are of interest to the research; however, this may nevertheless have introduced an observer effect [29].

This study is part of the *Re-Locative Media* research project, which looks at how people in translocal relationships make places together in virtual spaces. Both the investigation of asynchronous remote focus group methods and the framework connecting phenomenologist geography to virtual placemaking pave the way towards further intersections of geography and HCI research. Future research under this project will look at how to design virtual spaces to better support connection among geographically distributed families, partners, and friends.

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5.3 POSTSCRIPT

This phase of the research was organised as a theory-forming phase. Its core findings were *five virtual placemaking priorities* which intersect dwellers' place-attachments, their priorities, and their granular practices of spatial configuration.

While the study found that many aspects of virtual configuration echo what has been observed in physical architectural and geography studies, it highlighted one novel and contrasting behaviour—*building as dialogue*. This placemaking priority elaborates how the highly flexible co-configurability of digital internet technologies—sometimes referred to as the participatory internet (Beer & Burrows, 2010)—allows configuration to take place as a co-productive *dialogue of alterations* between users as they intersubjectively negotiate place-attachments in space. This key quality of virtually mediated placemaking is developed across the next few chapters.

Chapter 6: Cultures of Improvisation: Exploring the Vernacular Reinvention of Networked Technologies in Translocal Relationships

The previous phase of research produced a theoretical framework of priorities motivating placemaking through the human–computer interaction (HCI) lens. Following on that work, Publication 3: "Cultures of Improvisation" functioned as a community immersion study. This publication presents a study utilising a survey with thematic analysis which applied Publication 2's theoretical findings about virtual placemaking as a lens for inquiry into the current lived experiences of people in translocal relationships.

6.1 PREFACE

To connect the theoretical findings of the previous phase to everyday lived realities, it was necessary to ground the research in the sociological and cultural dimensions of virtual placemaking in translocal relationships. The goal of the survey and thematic analysis study in Publication 3, thus, was to establish the current conditions of people maintaining relationships translocally. This community has largely not been treated as a community with shared experiences, but as several different demographic groups defined by details of their physical localities rather than their overlapping experiences in translocal relationality. Long-distance (romantic) relationships appeared to be of more interest to HCI research and relationship studies (Janning et al., 2018; Mueller et al., 2005; Neustaedter & Greenberg, 2012; Zamanifard & Freeman, 2019), and migrant families to sociology and cultural studies (Alinejad, 2019; Dekker & Engbersen, 2014; Madianou, 2016).

This thesis did not aim to retread that ground but proposed to see both and other demographics in terms of common priorities of cultivating and dwelling in shared places at a distance—an intersection emerging from the thesis' translocal lens. To move towards constructing a holistic understanding of translocal relationality, I centred the structural impact of translocal mediated/mediating conditions in this study. This was not to discount

the importance of intercultural power geometries on migrants' relationships, but to allow the research to explore relationality beyond the hegemony of territorial borders and ruptures.

The next phase of the research—the qualitative survey and subsequent thematic analysis—centred on this. It sought to discover what people are currently doing to maintain translocal relationships at a distance and to understand what priorities and needs emerged prominently across them. The results are reported in Publication 3 below.

6.2 PUBLICATION

The manuscript for Publication 3, "Cultures of Improvisation: Exploring the Vernacular Reinvention of Networked Technologies in Translocal Relationships", is presented starting on the next page, preceded by a statement of contribution of co-authors:

STATEMENT OF CONTRIBUTION OF CO-AUTHORS

The authors listed below have certified that:

1. they meet the criteria for authorship and that they have participated in the conception, execution, or interpretation, of at least that part of the publication in their field of expertise;
2. they take public responsibility for their part of the publication, except for the responsible author who accepts overall responsibility for the publication;
3. there are no other authors of the publication according to these criteria;
4. potential conflicts of interest have been disclosed to (a) granting bodies, (b) the editor or publisher of journals or other publications, and (c) the head of the responsible academic unit, and
5. they agree to the use of the publication in the student's thesis and its publication on the QUT's ePrints site consistent with any limitations set by publisher requirements.

In the case of this chapter: **Cultures of Improvisation: Exploring the Vernacular Reinvention of Networked Technologies in Translocal Relationships (under review)**

Contributor	Statement of Contribution
Amari Low	Conceptualization, methodology, data collection, data analysis, writing (original draft, review and editing)
Jane Turner	Conceptualization, methodology, data analysis, writing (review and editing)
Marcus Foth	Conceptualization, data analysis, writing (review and editing)

Cultures of Improvisation: Exploring the Vernacular Reinvention of Networked Technologies in Translocal Relationships

Abstract. As migration and internet access proliferate, more relationships than ever are being sustained through the internet. This paper reports on the exploratory phase of a research project looking at how to design interactive technologies to support the relationship practices they mediate. Through a questionnaire and thematic analysis, we engaged with anecdotes of how members of migrant families and long-distance couples are creating a sense of shared place through social media, text messaging, and other networked technologies. The findings surface a pervasive pattern of vernacular reinvention—of users tactically reimagining technological resources towards novel usage possibilities, to construct shared places at a distance. We emphasise the affectivity of these vernacular reinvention tactics, through which users become co-producers of interactive artefacts, and identify five modes of spatial intervention that drive it: Temporal, Ambient, Imaginative, Material-Symbolic, and Affective. These findings offer implications for interaction design work aiming to better support long-distance relationship practices.

Keywords: co-presence, virtual worlds, placemaking, long-distance relationships, relatedness

Introduction

Within kinship and romantic relationships, shared places and cohabitation are often crucial. As lives become increasingly intertwined with digital environments and platforms, a growing number of families and romantic couples are maintaining their relationships translocally—transcending bounded localities and borders—for extended periods of time [1, 2]. These relationships are usually maintained via networked technologies like text messaging, videoconferencing, and social media, where a sense of shared place is remediating digitally [3–5]. People in these relationships use multiple technologies interdependently, in a phenomenon that has been referred to as polymedia [6, 7].

During the COVID-19 pandemic, the rapid migration of social bonding practices to virtual spaces highlighted the growing diversity of relationship practices being enacted through the internet [8, 9]. As professional and social relationships went online [10], many instances emerged of users creating and reinventing virtual spaces to mediate social practices: peer groups attended movie nights together on VR Chat [11], citizens created ad hoc social networks for dispersing news through WhatsApp [12], and distributed users built replicas of world cities in Minecraft [13].

Current research on translocal relationship practices tends to be highly disciplinary: human-computer interaction considers how technologies can be designed to solve distance and foster intimacy [14], while sociological research focuses on how localised

cultural factors inform technology use in those relationships [15]. There is less research investigating translocal relationship practices as intersection points between interaction design artefacts and affective relationship needs, and about how interaction design can be done to better support the translocal relationship practices that rely on them.

We highlight the opportunity to contemplate technology usage practices in translocal relationships by considering them as spatial tactics [16]: context-sensitive grassroots practices that make sense of the technological infrastructure and reinvent it towards affective goals [17]. By researching technology-mediated placemaking with a focus on spatial tactics, we can form a richer picture of how people in translocal relationships are co-producing digital spaces to scaffold an affective sense of place in their relationships [18].

This study is the initial exploratory phase of a research project that looks at how interaction design practices can be reimagined to address the needs of translocal relationships. This study set out to define the opportunity space [19] for the research project and design work. Section 2 of this article introduces important prior literature informing our research interest and methodology. Through a qualitative survey designed to be transmitted through social networks (Section 3), we gathered stories about how long-distance families and romantic relationships are remediating their sense of shared place through digital technologies. This data surfaced an on-the-ground understanding of translocal placemaking—ways that people are vernacularly reinventing networked technologies to foster shared places at a distance. The data were interpreted through thematic analysis, intersecting sociological and human-computer interaction views (Section 4) with the aim of revealing pathways for future design work.

The findings highlighted the concept of *cultures of vernacular reinvention* as a hallmark of the tactics being enacted to cultivate a technology-mediated sense of place, surfacing five modes of spatial intervention that drive those tactics (Section 5). Approaching vernacular reinvention as a kind of democratic user-led co-production, our five modes of spatial intervention present a pathway for rethinking how interaction design and placemaking practices intersect, and how to do design that better honours those priorities (Section 6).

Place, Relationships, and Playfulness

In this section, we consider the study's theoretical background in three areas: (i) Place—as relational anchorage in space, and its remediation to digital realms; (ii) Play—how translocal placemakers creatively co-produce virtual spaces in everyday contexts; and (iii) Relationships—virtual placemaking as tactics for asserting intimacy and relatedness at a distance. We then outline the knowledge gap at the intersection of these views, which this study addresses.

Place

"Place" widely refers to the view that one's location in space is conceived through subjective phenomena like sentimental attachments, interpersonal relationships, and

social communities [20–22]. The study of *placemaking* concerns how places take form within such an ontology [23]—both imposed top-down by governments and developed bottom-up by communities who "modify place as per their living experience" [24].

Increasingly, placemaking is also being considered in digitally mediated contexts. Tuan [21] presciently observed that places are not necessarily bound to physical locations, citing how nomadic communities' sense of place is anchored in portable belongings. As networked technologies such as the internet have proliferated, so has research about technology-mediated places and how they reconfigure conventional understandings of space and place [22, 25].

At the time of writing, 66.2 percent of the world's population have internet access [26]. People, information, and capital frequently travel across geographical borders, and our lives intersect with these global flows daily—a phenomenon that has been referred to as translocality [27]. Accordingly, more close relationships are being maintained between people living far apart. Migrants have long established such translocal relationships [28, 29], making use of technologies like phones, text messaging, and social media as "remedies for … alienation and fragmentation" [30]. Today, non-migrants also frequently maintain technology-mediated interpersonal connections [4]. This trend is precipitating a "redefinition of what social space means in the Digital Age … particularly in terms of configuring social interactions between people who never see, small, touch, or hear each other" [31].

Despite being maintained over distance, translocal relationships still require shared places, and a growing body of research is considering the unique conditions and challenges of establishing shared places via networked technologies [3–5, 32, 33]. The next section contemplates these evolving conditions of technology mediated relationships in greater detail.

Relationships

Whether face-to-face or at a distance, relationships are understood to be sustained through relationship maintenance practices, consisting of regular affirmations and shared activities [32, 34]. A sense of sharing space is crucial to deepening these relationships, and feelings of intimacy are closely tied to co-presence and shared living, mirroring cohabitation in both romantic and kinship-based co-located relationships [3, 4, 35].

The question of how a sense of shared place is remediated to virtual space has been researched in both sociology and human-computer interaction. Within what Madianou and Miller [6] describe as polymedia culture, relational practices tend to achieve a sense of place by inhabiting multiple channels complementarily, each entailing different textures, tonal registers, and privacy levels [36].

However, the translocal places being made through digital media are fundamentally structured by the devices through which they are accessed, and the interactions they afford or prevent [25, 37]. On one hand, they dematerialise physical distance and increasingly support instantaneous communication [29], but on the other, the corporate priorities around which many are designed [38] can result in a lack of texture, permanence, and configurability—qualities necessary for placemaking to occur [39]. During the COVID-19 pandemic, it became clear how these functional limitations can

obstruct relational encounters through "an unsettling fragmentation that is the result of delayed or disjointed transmission, misunderstandings that result from weak signals, … moments when an expression remains frozen while the voice keeps going" [40]. Text-based communication demands clearer indications of tone [12], Zoom call histories vanish when the session is closed, and Facebook's content algorithms increasingly prioritise advertising for profit [38].

Towards resituating a sense of shared place amid these challenges, people in translocal relationships must often imagine new ways of using familiar technologies. Neustaedter and Greenberg [41] uncovered how romantic partners enacted intimacy tactics through video calls, including parallel activities in which the screen became a "window." In a different study, Hassenzahl et al. [14] reviewed 143 novel interactive artefacts designed for long-distance intimacy, identifying six design strategies enacted to foster relatedness at a distance. This study noted that the designing of technologies for remote closeness does not end at interaction designers: users also imaginatively appropriate them to perform unexpected functions, as illustrated by 'squilloing,' a practice in which one person rings another on the telephone without being answered, establishing shared attention while circumventing fees. This usage pattern was not intended by the inventors of the telephone, but the telephone's affordances support it [42]. In this way, how translocal interlocutors appropriate technology is often agnostic of what technologies are *intended* for, and more with negotiating their everyday priorities through the possibilities afforded by the available resources.

We propose that research about these reinventive digital practices is enriched by understanding them as spatial tactics. This borrows from de Certeau's [16] "spatial tactics": ground-level, context-sensitive manoeuvres by which everyday dwellers navigate and reshape urban space, in contrast with the overarching "strategies" encoded in the urban plan. In a similar fashion, the design *strategies* of Hassenzahl et al. [14] can be complemented with a focus on vernacular usage *tactics* of users which respond ad hoc to, intervene on, and subvert the limitations of digital infrastructure [43].

Like analogous physical practices where communities reinvent limited resources to meet their everyday needs [44], translocal placemaking tactics embody a spirit of pragmatic, context-sensitive inventiveness, transforming perceived limitations into imaginative opportunities [45]. Through such transformative tactics, users become active co-producers of digital artefacts and usage experiences [46, 47]. And, as Madianou and Miller [6] note, "polymedia is not simply the environment; it is how users exploit these affordances in order to manage their emotions and their relationships." In other words, such vernacular co-production is not simply incidental to translocal being-together, but central and necessary.

Thinking with translocal reinvention opens up an opportunity to rethink interaction design around fostering these on-the-ground placemaking tactics. To understand how this can be done, we consider digital applications as experiential geographies whose features and textures shape how places are made through them, looking to the scholarship of game and virtual worlds studies for useful lenses and frameworks.

Playfulness

Games and virtual worlds are technologies with an important place-element. Research about them offers frameworks for entwining technological and geographical views of digital spaces and places [48, 49]. Since Huizinga's [50] coining of the "magic circle" to describe spaces where game rules supplant the rules of reality, play and spatiality have been understood as interdependent. Virtual realities have been contemplated studied through the lens of life-worlds—how inhabitants' socially-negotiated experiences and communities of practice assert the sense of a continuous, coherent reality within technology-mediated spaces [51, 52].

As internet-connected technologies become pervasively interspersed in everyday life, these life-worlds increasingly span multiple technological layers and physical localities which users transit fluidly between [52]. Interactors in distant localities become experientially nearby all the time, not just when online [5, 53, 54].

Hardesty and Sheredos [52] emphasise that playful ways-of-being—embodying game rules and acting creatively within them—are crucial to the sense that virtual worlds are whole, continuous realities. Lammes [55] further argues that play *is* the imaginative negotiation of space: it activates possibilities for transformative action within the life-world by creating pathways towards subverting pragmatic goals [56–59].

As such, not all instances of playfulness need to be attached to games; when considered as subversive approaches to co-producing and transforming space, translocal technology-mediated placemaking is essentially a form of play. Technologies pose play rules via their affordances and limitations, and to make places with them asks for a playful attitude, producing new practices beyond what the rules prescribe [60].

Research Gap

Most research about digitally mediated relationship practices is fragmented across many disciplines, adopting separate disciplinary lenses to understand them. Interaction design research explores strategies taken by interaction designers to design for closeness at a distance [14, 61–63]. Cultural and media studies research into translocal polymedia practices [1, 7, 64] emphasises the cultural contexts of translocal digital practices, but does not often draw this knowledge back into interrogating design thinking. A third body of research, game studies, offers ontological views on the life-worlds produced by users as they navigate the logics of virtual space [52, 55].

Living at this intersection, our design research project connects research from interaction design and cultural studies to consider placemaking in translocal relationships as confluences of technological, cultural and affective phenomena, imbricating diverse ground-level contexts. Rather than focusing solely on designers, designed technologies or users, we consider them as an interdependent whole—as *designed interactions,* living "in the intersection between technology, infrastructures, services, and citizens" [65]. Centring the unique ontological condition of translocal

being-together, we explore the spatial tactics by which translocal dwellers foster a rich sense of shared place through technology.

Methodology

This study was guided by two research questions: *How are people in translocal relationships creating a sense of shared place through networked technologies? How can design work address these communities' context-sensitive needs?*

The objective of this study was to lay the context for interaction design work that attends to the intangible, affective needs of translocal placemakers. The project considers place as being constructed through knowing in action [66]: practised, interpretative, and composed of multi-layered meaning-making processes [67]. It moves away from design thinking—which frames technology usage around problems in order to solve them with design products [68, 69]—towards seeing design as a practice that lives in dialogue with users, offering "tools and systems through which others create their own products and communication" [70]. As such, rather than prescribing a research *problem* to be answered by design, this survey is framed to let participant responses define the research *opportunity* that will guide subsequent research stages, opening the research programme to emergent outcomes [23, 71].

Following the above objective, this study was designed to be lightweight and transmissible along social networks, uncovering how people in translocal kinship and romantic relationships are creating a sense of shared place across a broad range of contexts. Seeking opportunities to "[articulate] value in design research data beyond traditional means" [72], we approached the data and its interpretation as openings to sensitise subsequent design work to respondents' lived contexts. Thematic analysis of the data was scaffolded by this goal of discovering design opportunities, informed and enriched by our positionality as both design researchers and maintainers of technology-mediated translocal relationships.

Cohort

The target group of our study consisted of people maintaining relationships with family members or romantic partners living in a different country. Rather than signifying a static demographic category, this cohort was identified by shared experiences of technology-mediated relationship maintenance. Recruitment began from online spaces focusing on migrants and international students, the communities most frequently researched in connection to translocal relationships. Public social media posts on X (Twitter), Tumblr, and LinkedIn were also disseminated to broaden the cohort to a more diverse range of internet users.

We then recruited subsequent participants through snowball sampling, in which existing participants referred more participants to the study [73], by prompting respondents to share the survey with acquaintances upon completion. Snowball sampling has been interpreted through the lens of feminist studies as an "essentially social" tactic that can apprehend socially dynamic knowledge because "it both uses and

activates existing social networks" [74]. In our case, snowball sampling let us access the dispersed community of people enacting digital social practices, who are asymmetrically dispersed across the population, by leveraging those very social practices.

To reach a geographically distributed population and enhance transmissibility, we deployed a digital questionnaire instrument as our data collection instrument. While a survey had a more limited ability to elicit contextualising discussions of reasoning and intent, this was a trade-off for allowing the instrument to percolate through social networks to reach our intended cohort. Participants were filtered for self-reported experiences of maintain kinship and romantic relationships beyond their current country of residence.

We engaged with responses using thematic analysis, parsing out salient themes through "systematic engagement" [75] with the dataset. This thematic analysis process was framed around the goal of revealing the opportunity space of interaction design for translocal placemaking, paying attention to the respondents' perception of experiences at the meeting point between their relational priorities and the available technologies. The thematic analysis included two iterations of coding to analyse the data: first descriptively, to reveal recurring motifs, then interpretatively to refine codes into themes [76]. Themes were then clustered to further clarify overarching patterns. The findings of this process were then examined and discussed by contemplating usage as designed experiences—intersections of user behaviours and technology design, in which both users and technologies participate and intervene.

Survey Design

The survey included a short-answer question about geographical location, a multiple-choice question about platform types, and four free-response questions about the participants' long-distance relationship practices. All four free-response questions asked participants about their practices with varying foci, with the intention of cueing respondents to describe the same practices and tacit knowledge through different narrative lenses: (i) communication practices in general, (ii) interesting or unusual practices, (iii) playful practices, and (iv) non-verbal practices. As a study for exploring a design opportunity, we were less interested in revealing the statistical frequency or prominence of specific practices, and more in what patterns were revealed by the way participants discussed them. We included example prompts to cue participants' memory and clarify how the focus of each question differed from the rest, allowing us to elicit more diverse discussion.

Survey Responses and First-Level Coding

The survey ran for 12 weeks in the second half of 2023. 44 responses were collected, coded R1 through R44. R6 was not analysed as it was submitted without answers to free-response questions. The dataset was imported into the NVivo software for coding. Respondents were first grouped based on geographical location to understand the

geographical distribution of respondents (Fig. 6.1). Overall, the respondents represented 24 countries in five continents.

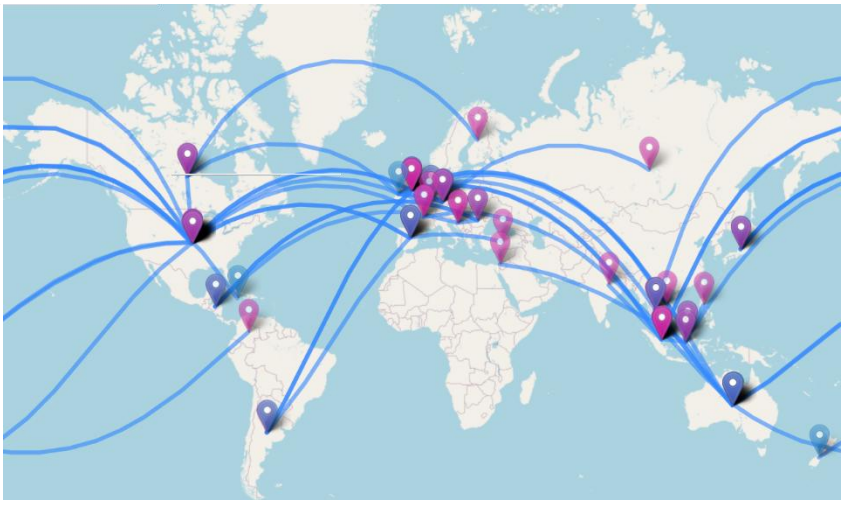

Figure 6.1. Locations of respondents (blue) and the people they maintain relationships with (magenta).

The first level of coding provisionally organised the data with responses to the question about what types of platforms respondents used (such as "text messaging" or "voice calls"). Free-response answers were then coded with the same list of platform types. All respondents used a rich text messaging platform, such as WhatsApp, WeChat, or Facebook Messenger, consistent with findings of past literature [36]. Most respondents also used voice (N=38) and video (N=37) calls. More than half used social media platforms (N=28), games (N=27), and live-streaming platforms (N=22) such as Twitch and Watch2gether.

Notably, many connective practices were seen to combine multiple types of platforms and communication. Multiple respondents, for instance, used the Discord application for voice calls (R11, R20, R43, R37), text messaging (R1, R10, R20, R43), livestreaming or screensharing (R3, R30), and video calls (R41). R11, R25, R28, R31 and R37 described watching shows concurrently using a live-streaming application and a voice or video call in tandem. Gameplay sometimes involved streaming footage from a game programme through a live-streaming service, while an ongoing voice call allowed for real-time verbal communication, as in the cases of R25 and R30, the latter describing "streaming choice based singleplayer games…over [D]iscord and making choices and theories together."

The frequent and ambiguous recombination of different platform types prompted us to interrogate the usefulness of these categories in understanding the data. Nevertheless, this finding verified what Ruppel et al. [36] refer to as "channel complementarity"—the intersecting of multiple technologies to create a textured technology-mediated terrain.

Thematic analysis

This section explores the thematic analysis of survey responses, including coding, clustering, and interpretation of the data. After first-level coding, we embarked on two iterations of pattern-coding, which surface implicit patterns across the dataset. First, recurring phrases and concepts were coded to indicate possible thematic links. Then, the list of codes was refined to locate further instances of existing codes, and to remove codes that did not indicate a useful pattern. Finally, the codes were provisionally grouped according to commonalities. The codes resulting from this iteration, as well as their preliminary groupings, are presented in Table 6.1.

Table 6.1. The list of pattern codes, provisionally grouped.

4.1 Play	**4.2** Intergenerational interactions Shared memories and artefacts Group virtual spaces Life updates Shared times of significance	**4.3** Asynchronous interchange Ambient awareness Gifts and thoughtful sharing
4.4 Simultaneous doing Co-experiencing media Performing and witnessing actions	**4.5** Sensory co-presence Windows connecting physical spaces Devices as remote surrogates	**4.6** Co-creation Creative practices Story-making and storytelling
4.7 Verbal conversation Pets Help and favours Physical artefacts		

A prominent pattern connecting many observations across the dataset was that of respondents using technologies in ways that contrasted their conventional usage, indicative of the "appropriations" briefly discussed by Hassenzahl et al. [14]. For instance, R38 talked about reading online reviews of unusual products aloud with their partner on a voice call. R5 described "spending hour or two or three … doing normal life stuff while the phone [was] in the pocket with headphones on," allowing ambient sounds from both respective locations to intersect both communicators' attentions. R39 described playing games with their niece using Facebook Messenger's photo filters. These activities did not resemble common face-to-face bonding practices, but were novel and adaptive to the digital environment. Within this framing context, further patterns and insights are outlined below.

Play

The survey included one question eliciting discussion of playful activities based on the project's interest in placemaking as play. All mentions of such practices were coded under *Play*. Throughout our dataset, a diverse range of games were played, including open-world and virtual reality video games like *Final Fantasy 14* (R3, R25) and *Minecraft* (R20, R25, R28, R40, 43), board games such as *Wingspan* (R18), and cooperative tabletop roleplaying games like *Dungeons and Dragons* (R11, R20, R28, R30, R37, R38, R41).

Video games were typically played together via a multiplayer feature. Among players of tabletop and board games like *Dungeons and Dragons*—conventionally played face-to-face with physical objects—all described bricolaging a play experience from a range of technologies, most commonly voice calls, collaborative virtual gameboards like *Roll20*, and text messaging for discussions between game sessions. In the case of R29 playing board games, their bricolage included a physical element, in which both partners "both bought the same board games and then played them in parallel."

In other cases, the participants did not play the game together, but did so on their own and exchanged thoughts, notes, and in-game items. This was especially the case in games without a remote co-operative element, like *Wordle* (R34), *Yeardle* (R21) and the location-based game *Pokemon Go* (R1, R16). With *Pokemon Go*, both respondents mentioned using the in-game gift feature, sending each other postcards associated with real-world points of interest they had visited. In a few cases (R1, R30, R32), one person would play a video game, streaming its footage while the other(s) spectated with commentary or verbal feedback. R30 mentioned "playing the same game together separately and comparing [their] progress, streaming choice based singleplayer games … over discord and making choices and theories together" as ways to act together in a playful modality.

Other practices that did not involve a game artefact were evidently *playful*. These include playing with image filters in Facebook Messenger (R39), character roleplay (R43), looking up unusual products online and reading the reviews in a voice call (R38), and co-operatively reading books aloud (R4). These playful tactics were intrinsically tied to the polymedia online space in which they took place, and did not easily map to traditional face-to-face relationship practices.

Intergenerational interactions

16 respondents described intergenerational relationship practices, including parent-child interactions (N=16), grandparent-grandchild interactions (N=3), and one instance of interaction between an aunt/uncle and their niece. Among these interactions, we coded many instances of *Shared memories and artefacts, Group virtual spaces, Life updates*, and *Shared times of significance*, behaviours which indicate mutual care, ongoing concern with each other's lives, and a desire to extend help. For instance, R32 mentioned their father "[asking] … if he needed to send oats to the UK in case they didn't have any." R5 mentioned troubleshooting computer issues as a recurring subject

in interactions with their father. For R19, life updates were exchanged about physical reconfigurations around the family home and seasonal changes in the vicinity. R39 described accumulating a repository of life tips and creative ideas with their mother:

My mum and I are often emailing about creative ideas or revolutionary approaches to housing or sustainability. … it's nice to be cultivating an idea tank or repository or resources, not that it's easy to sort through after.

Recent research has suggested their potential for networked technologies to improve social inclusion of older adults, particularly for those who cannot interact face-to-face, although it has also been noted that older adults often have greater difficulty adapting to digital practices [77, 78]. Our findings revealed some of the technological difficulties impacting these intergenerational interactions. R13 mentioned a failed attempt to play the online multiplayer game *Runescape* with their mother, while R5 discussed favouring interaction through desktop applications because "[their father's] phone or mobile data don't work well, so we switch to other similar apps, e.g., Skype." Such difficulties can create communication breakdowns; R39 outlines an anecdote about how a failure of technology led to communications becoming delayed or lost:

She didn't realise until recently that she can't message my old Australian phone number, which recently got recycled to another person who swore at her as a text response. She thought up until that point I had just been ignoring her on that platform but responding on the others.

In each of these cases, a tactic that might have worked for a different relationship was not feasible. Each relational circumstance gave rise to diverse needs, necessitating different tactics of technology use. These instances were the first indicia of the difficulty in essentialising such diverse practices to a single research problem.

Asynchronous interchange, Ambient awareness, Gifts and thoughtful sharing

Asynchronous practices require persistent mechanics, such that virtual artefacts—messages, gifts, images, and so on—may be "left" in virtual spaces to be perused by recipients in the sender's absence. Many respondents talked about using asynchronous affordances in social media platforms and video games to leave gifts for others. Such "Gifts and thoughtful sharing" ranged from literal gifts (using the gifting feature in games such as *Arknights* and *Pokemon Go*), to more abstract ones (memes, photographs, and news articles pertaining to the correspondent's interests). In one case, R15 recounted writing a computer programme to "randomly generate loving messages using an algorithm and dispense them to [their] partner on demand" while they were offline.

Such asynchronous gestures—which also included likes and shares on posts, and the sending of material of interest to be viewed later—were coded as instances of *Ambient co-presence*, following past research that describes how these ambient behaviours and gestures maintain tacit awareness and continuing co-presence [5, 54].

Simultaneous doing, Co-experiencing media, Performing and witnessing actions

Simultaneity and synchronous interactions were recurring themes in the dataset, signified by the codes *Simultaneous doing, Co-experiencing media,* and *Performing and witnessing actions.* While also related to physical connection, these themes exposed the time-based element of remote intimacy tactics. For example, several respondents (R11, R25, R28, R31 and R37) described concurrently watching shows or videos with a parallel voice call, in a home-theatre-like setup where participants could discuss the media as they were experiencing it. Others described playing multiplayer games with a similar parallel voice call, including physical board games in their respective physical spaces (R29).

Voice and video calls, streams, and real-time cooperative games function as an anchor for a concurrency and reciprocal interchanges of information, such as when R30 and their partner made choices together in a streamed video game via a voice call. These tactics scaffold a sense of acting at the same time in the same life-world, supporting a similar need to the "Joint Action" design strategy found by Hassenzahl et al. [14]—albeit through ad hoc tactical appropriations of voice calls and streaming software, which were not necessarily designed for this purpose.

Sensory co-presence, Windows connecting physical spaces, Devices as remote surrogates

These three codes relate to how respondents used their devices to connect separate physical spaces by transmitting tacit ambient data in addition to explicit communication. In some cases, this involved a pattern of *Sensory co-presence,* or creating connection through direct transmission of sensory input between localities. In one example, R5 mentioned "play[ing] random tunes on call [with their father] as a background if I have a guitar at hand." Two respondents (R15, R41) mentioned staying on voice calls with their partners even while asleep. R38 mentioned "sitting with the other person while they work[ed]" via a video call, suggesting an experiential dissolution of the boundary between correspondents via the connecting technology. In other cases, co-presence was achieved by using devices as *Windows connecting physical spaces.* Several respondents (R3, R11, R18, R31, and R39, among others) described setting up a video call and completing chores, dining, or otherwise engaging in shared activities on the call. In these cases, the device was placed in a static position and functioned like an audio-visual window.

The above practices establish a sense of tacit co-presence that echoes co-located intimacy, one advantage offered by videoconferencing platforms as discussed by Neustaedter and Greenberg [35]. They reiterate a shift in how voice and video calls are used—from planned, time-bounded interactions to ambient always-on "windows" aiming to dematerialise distance, made possible by their lack of metered usage fees, unlike in phone calls.

In the third set of cases, the device was treated as a *remote surrogate*, a kind of physical representative of the distant correspondent. Numerous respondents (R1, R2, R5, R8, R13, and R14, among others) mention "tours" in which one correspondent

navigated a physical space while holding a mobile device, streaming footage to the other through a video call. R35 describes this as "house tours in videocall, and also … nice places we visit in real time (also on videocall), for example touristic places." R25 described setting up their laptop webcam next to them while they played a video game, streaming footage to their partner so that he would "feel like he was actually getting to play it with me for a week." These behaviours exploit the portability of networked devices to recreate a sense of embodied, spatialised interaction through movement or positioning of the capturing device.

Co-creation, Creative practices, Story-making and Storytelling

Our dataset contained 15 instances of *Creative practices* as a part of relationship activities. These included collaborative storytelling, trading art gifts, inventing worlds together, and roleplaying games. Video and tabletop games often served as the medium for creative story-making [79]. Among other instances, R8 described "draw[ing] sketches of us in various fantasy scenarios like what if we are [Lord of the Rings] characters," while R25 mentioned "taking part in fandom exchanges (and, often, ending up creating for each other)" as part of their relational practices.

It was not necessarily the medium but the exploratory inventiveness that identified these activities as (co-)creative. Such engagements signify the value of shared active imagination [80] to actualising the sense of co-presence in these relationships—that is, role-playing a sense of dwelling in a shared lifeworld.

Other notable themes

A few other themes, namely *Pets, Verbal conversation, Help and favours*, and *Physical* artefacts, were not easily grouped at this phase of the thematic analysis, but indicated prominent patterns that were included in the subsequent reviewing and clustering phases.

Reviewing of codes

On review, we found that the codes we had produced occupied different interventive levels. Some themes described priorities motivating action, such as *Simultaneous doing* and *Co-creation.* Others described an approach to using the technology—such as *Devices as remote surrogates* and *Gifts and thoughtful sharing.* Yet others concerned topics relating to the participants' interests, like *Life updates* and *Pets*. The codes above were re-clustered under these three identified categories, producing a new taxonomy: the *Why*, *How*, and *What* of these translocal relational practices (Fig. 2). The "Why" themes describe broader *priorities*, which guide the more specific *behaviours* of translocal vernacular reinvention (the "How"), which in turn support interactions relating to *subjects* of interest (the "What").

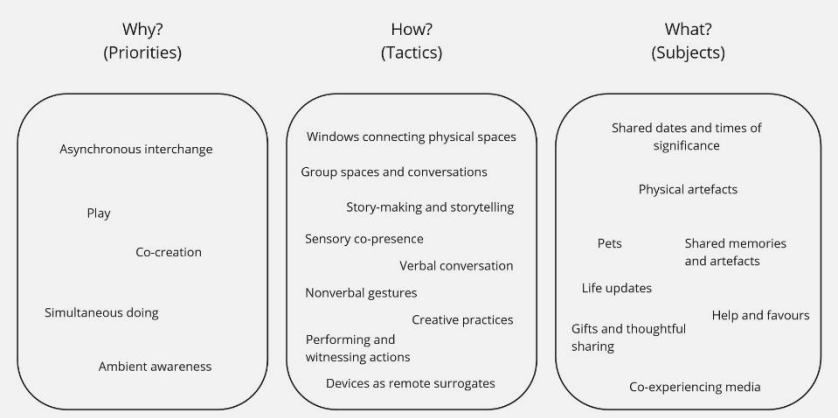

Figure 6.2. The initial clustering of themes by category.

In this step, the five "Why" themes surfaced as being descriptive of the groupings identified in the pattern-coding phase (Table 6.2). Here, parallels also became apparent between the Priorities and the design strategies of Hassenzahl et al. [14]: *Simultaneous doing* corresponds to *Joint Action*, *Ambient co-presence* corresponds to *Awareness,* and *Co-Creation* is related to *Expressivity*. This revealed ways of developing our clusters to be descriptive of the full set of themes.

We began re-clustering the Behaviours and Subjects under these Priorities (Figure 6.3). Through this clustering process and comparison with the findings of Hassenzahl et al. (2012), we generated two more priorities: *Emotional connection,* under which sub-themes like *Help and favours* fell, and *Physical linkage*, which relates to sub-themes like *Devices as remote surrogates.*

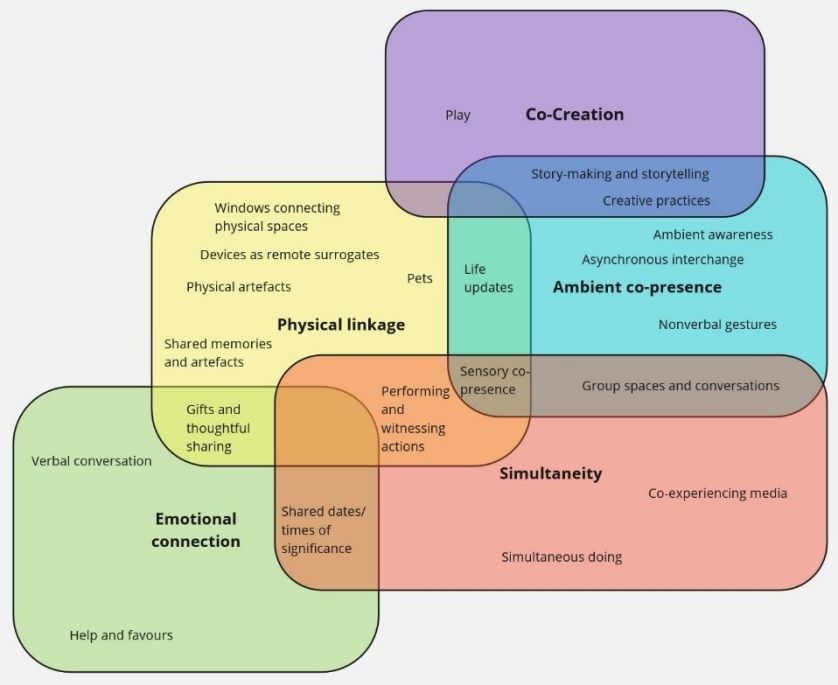

Figure 6.3. The revised theme clustering, structured around the five priorities.

This clustering process led to the relabelling of *Simultaneous doing* to *Simultaneity* for a direct connotation of temporal co-activity. The five clusters identified through this process were (i) Simultaneity, (ii) Ambient Co-Presence, (iii) Co-Creation, (iv) Physical Linkage, and (iv) Emotional Connection.

Discussion

The aim of this questionnaire and thematic analysis study was to gain a situated understanding of the tactics by which people in translocal relationships are creating a sense of shared place via networked technologies. Through a thematic analysis of responses, we uncovered several patterns across the dataset, outlined in Section 4.

Most prominently, we found that reinventive attitudes towards technology did not merely occur individually and incidentally, but were pervasive across a diverse range of relationships and geographical localities. These behaviours had affective motivations—supporting intimacy and co-presence through technologies not made for such affective usage. The conditions of translocal relationality necessitated that a sense of shared place and intimacy be reinvented through transmissions of digital data, and as described in past research [14, 64], users exploited the unintended possibilities of technologies and "hacked" them towards new practices. Even mundane acts like "hanging out," which are trivially easy in co-located contexts, were negotiated through bricolage-like tactics in translocal relationships, and practices like using voice calls as

sensory windows signified the habituated creative reimagination needed to make these mundane interactions possible.

These reinventive behaviours are more than individual acts: they signify vernacular *cultures* of reinvention that are highly sensitised to the communicators' ambient daily practices. They act to assert life-worlds where the crucially ambient nature of shared living—the implicit sense of being in the same place even when not concurrently interacting [5, 54]—must be deliberately re-habituated amid the logics of networked technologies.

We parallel this to other localised vernacular cultures of material improvisation that address structural deficiencies in context-sensitive was—jugaad in South Asia [81], gambiarra in Brazil [82], and halletmek in Turkey [83], among others. Our observations of improvisatory behaviours likewise signify grassroots cultures of reinvention where users address deficiencies in the environment by recombining, repairing, and retooling available resources, becoming co-producers of designed artefacts [84]. But top-down design is not passive in this relation: vernacular reinvention requires that "the potential for events to happen is designed into digital and physical environments" [45], and that designers create openings and possibilities for user-led co-production.

Because they address an infinite range of social contexts, cultures of vernacular reinvention are necessarily affective, responding sensitively to ground-level relationship priorities and needs. This means that every relationship negotiates its own set of habituated tactics, its own ways of reinventing technology for shared place.

This offers significant implications for top-down interaction design: there is a need to move away from the assumption that all relationships' needs for closeness require the same interaction capabilities and can be served by the same technological solutions. Designing for translocal shared places requires openness to endemic affective needs, difficulties, preferences, and more—and this means design outputs *must remain open to user-led co-production through vernacular reinvention*.

Analysing the study findings with this idea of cultures of vernacular reinvention, we characterise our findings as five translocal modes of spatial intervention. Rather than a "how-to" checklist for designing for remote intimacy, we propose these as experiential patterns in how users intervene in digital infrastructure to meet affective needs (Table 6.2).

Table 6.2. Five translocal modes of spatial intervention.

Mode of spatial intervention	**Theme cluster**	**Description**
Temporal	Simultaneity	From solving problems together to producing concurrent experiences, the sense of temporal proximity created by synchronous action is a strong vector for feelings of relatedness and co-presence. A sense of simultaneous experiences and joint action are often scaffolded or asserted by voice calls, sound, and open data streams between users.
Ambient	Ambient Co-Presence	When platforms support persisting, always-open communication channels and a navigable history of interactions, communicators may fashion practices to assert the sense that spaces are

		shared ambiently and persistently across time. This includes leaving gifts and media asynchronously, accumulative alterations of virtual space, and artefacts that project communicators' presence when they are absent.
Imaginative	Co-Creation	Cooperative active imagination supports communicators in dwelling in shared mental places where sentimental attachments can take root (Low, Turner, & Foth, 2023). From playing sandbox games to collaborative worldbuilding projects, creative play empowers communicators to craft affectively rich places together in which they have an equal stake.
Material-symbolic	Physical Linkage	Even in virtual connections, interactors often seek to anchor bonds in corporeal space, using technologies in ways that aim to dematerialise the distance between physical spaces, as seen, for instance, in the use of video calls as 'windows' connecting spaces, or voice calls that are maintained for several hours at a time, transmitting both verbal communications and ambient sounds.
Affective	Emotional Connection	Various expressive tactics address the need to communicate precise emotional experiences and to express reciprocal attention between communicators, as supported by text- and voice-based communication modes. These fulfill the needs of relationship maintenance, such as affirming the relationship, sharing memories, and offering help and favours. Verbal conversation is the primary vector, but other practices, from giving of virtual gifts in games to cooperative problem-solving, also address this need.

We position these modes of spatial intervention as a way of understandng how translocal placemaking tactics are designed interactions, emerging at the confluence of technologies and interpersonal priorities. They characterise user behaviours as well as offer implications for designing technologies to invite or be hospitable to those tactics (but not to *promote* or *require* them).

Aside from (and related to) these modes of spatial intervention, some codes indicated ways that technological mediation ontologically shapes how relationships are sustained through them. These were usefully addressed in more depth through lenses from fields of game and virtual world studies:

(i) *Devices as remote surrogates.* The practices we termed *Devices as remote surrogates* echo the experiential qualities of avatars in video games, where players are embodied by virtual figures experienced as the self [85]. When the interactor remotely navigates a distant physical space via a device at the other location, the relationship between the user and the faraway device functions similarly to when players "perceptually

injecting their bodies into digital environments" [86], It invokes a similar "crossmodal translation of visual and kinesthetic experience" [87] when directing camera movements with spoken instructions. What is novel about such remote surrogacy versus traditional videoconferencing is that it enlists *embodiment*, where the interactor's intentions are translated to motions of the device, producing a sense of perceptual presence in a remote location.

(ii) *Simultaneous doing.* Simultaneous or concurrent action via video or voice calls were often reported alongside difficulties with time zones. Sometimes, the temporal desynchronisation of the interactors—conventionally seen as a vector of distance—was exploited as a mechanic of intimacy. Instances included when individuals watched faraway relatives cook at a convenient time of day, or partners listened to each other fall asleep. Time zone discrepancies are one of the clearest distinctions between face-to-face togetherness and virtual co-presence, asserting the multilayered reality of translocal connection (Hardesty and Sheredos, 2019). Respondents reinvented this sense of temporal fragmentation, using simultaneous actions across time zones as experiential bridges connecting their shared life-world [88].

(iii) **Co-creation.** Collaborative creativity has a foundational association with playful placemaking (Low et al., 2023). This does not refer only to creative work but more broadly to active imagination [80]: whether crafting a story together or roleplaying within shared worlds, these tactics inspire decentralised world creation through the cooperative reflexive input of players (Turner and Taboada, 2021). From these activities emerge not a singular, static world but a plurality of imaginative worlds not dependent on physical geography, which can live across polymedia ecologies. Such imaginative world creation makes available the cohabitation of shared mental spaces which—much like virtual space (Low et al., 2023; Rzeszewski and Evans, 2020)—are rendered into places through attachment, dwelling and configuration. Tangible virtual artefacts, from images to written stories, to virtual boards altered during gameplay, are often produced via such practices; these artefacts anchor the relationship's shared place, embodying memory and history in a similar way to physical ones.

Conclusions

This context-setting study set out to define the opportunity space of design for translocal placemaking, scaffolding subsequent interaction design work in the research programme. Through a questionnaire and thematic analysis of the data through the lens of spatial tactics, we surfaced respondents' practices of appropriating and reimagining inadequate technologies to cultivate shared places at a distance. Characterising these designed interactions, we identified five modes of spatial intervention along which

these virtual spatial tactics are enacted: (i) Temporal, (ii) Ambient, (iii) Imaginative, (iv) Material-Symbolic, and (v) Affective.

Because this study was the exploratory phase of a design research project, the gathered data are not statistically generalisable to global trends. The frequency of specific practices in the dataset is not indicative of how common they are overall. Instead, we aimed to generate richness through thematic interpretation of the data. Following our constructivist epistemology, we were concerned less with what categories of practices were more common or prominent, and more in what themes were surfaced by patterns across a broad range of practices. Accordingly, the thematic analysis was framed around elucidating such connections. In addition to guiding interaction design work, our modes of spatial intervention may structure further exploration of spatial tactics in online relationship practices via fine-grained methods such as interviews.

This research study explores the spatial tactics by which people are cultivating technology-mediated places in their translocal relationships. These tactics are sensitive to diverse everyday needs and priorities across a plurality of translocal relationships—many ways of being in the world as viewed from the ground level of everyday experience [89]. Our findings revealed pervasive everyday cultures of vernacular reinvention where communicators habitually transform mediating technologies towards resituating ambient togetherness through coherent life-worlds. By characterising such vernacular reinvention tactics as modes of spatial intervention, we re-present them as designed interactions at the meeting point of technology design and everyday usage tactics, paving the way towards re-envisioning the designing of networked technologies in ways that are open to co-production with their communities of inhabitants.

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6.3 POSTSCRIPT

The most important finding of the above thematic analysis study was the recurrent theme of *translocal vernacular reinvention* (revised from "vernacular improvisation" as devised in the article). More than just subversive reinventive tactics, the results highlighted a *culture* of reinvention—frugal innovation brought about by a *structural or systemic* lack of resources. Similar cultures of reinvention are usefully signified by the Hindi term *jugaad* (Rai, 2015) and the Brazilian Portuguese term *gambiarra* (A. Teixeira, 2019), with Ray and Gupta (2024) referring to instances of creative reimagination of ICT usage during COVID-19 *as jugaad*.

The cultures of vernacular reinvention we observed involved not only reimagining technologies, but also the reinvention of *ways of being together and sharing place*. Hardesty and Sheredos (2019) describe lifeworlds whose ontologies reconcile many layers of being. These simultaneously exist on many physical and virtual layers, each with different rules of play. Vernacular reinvention is constituted from playful, ground-level, everyday processes of negotiating the laws imposed by those material technologies, towards that very experience of being-together. In the above study, communicators invented new practices—such as reading unusual product reviews aloud to each other, or playing dress-up games while on video calls—acting together to scaffold synchronisation in the absence of tactile feedback. These vernacular reinventive tactics are, much like de Certeau's (1988, p. 108) spatial tactics, "passed just between me and you": private, personal, and as various as the people deploying them.

Through the lens of translocal vernacular reinvention, the findings were presented as **five translocal modes of spatial intervention**: Temporal, Ambient, Imaginative, Material-Symbolic, and Affective. These describe the patterns of spatial tactics through which communicators negotiate a sense of shared place amid the structuring "play rules" of translocal lifeworlds. These translocal modes of spatial intervention construct a way of seeing technology design and virtual placemaking practices as interlinked phenomena.

The above findings introduced a way forward for the Design phase of research. They demonstrated that one of the original precepts of the thesis project was a "red herring": I had proposed to ameliorate and improve the situation for people in translocal relationships through design, but this was predicated on the assumption that there was a clear solution that could be arrived at through designing "better". The survey responses challenged this a priori assumption: not only were participants already experts in navigating and ameliorating physical distance through mediated co-presence, but they did so through transformative

combinations and assemblages of technologies, as well as creative uses and "misuses" of those technologies. There was no singular platform that addressed all their needs, and a rich communicative ecology was crucial to the sense of texture and place in their mediated lives.

Importantly, most dwellers in translocal places do not think about theories of place in their daily practices, yet their on-the-ground everyday practices form a preeminent source of knowledge about those very translocal places. The usefulness of the thematic analysis instrument was that it had the power to "reveal a hidden feature of the particular" (Connelly & Clandinin, 1986, p. 295) among the tacit knowledges of these everyday experts, rendering patterns within the voluminous and varied data to reveal the richness of everyday experiences through lenses of translocality and placemaking.

My role as both a researcher and a person who maintains translocal relationships served as interlocution between academic knowledge and the action knowledge of everyday dwellers. With its participatory creative approach, this thesis project endeavoured to "share the connections that exist between social sciences, local knowledge (its creators and users) and our evolving capacity to build new answers to the needs of societies around the world" (Sancho Querol & Carvalho, 2018, p. 4).

However, before academic theory could enter dialogue with tacit everyday knowledge, it was necessary to design *interfaces* by which the knowledge I had gathered could be meaningfully held and explored by those outside the academic world. Rather than a *problem* space, the results of this thematic analysis study opened up translocal relationship practices as an *opportunity space* (Hornecker et al., 2006) for design work. To begin delving into that opportunity, the next chapter outlines how translocal vernacular reinvention and the modes of spatial intervention by which it is achieved were next explored as implications for design.

Chapter 7: Unfinished by Design: Inviting Vernacular Improvisation through Provotyping Practices

Moving from the Preparatory phase to the Design phase, the research work transitioned from an analytic mode to a generative one. To bridge from the theoretical frameworks elucidated by previous phases to the situated contexts of design practice, I saw an opportunity to apply the five modes of spatial intervention from the "Cultures of Improvisation" study (Chapter 6) to adapt and reimagine interaction design.

To extend the five modes into new ways of doing design, I undertook a design-provocation method towards speculatively challenging the assumptions of design practice. This chapter presents the process and outcomes of the design provocations which constitute Publication 4: "Unfinished by Design".

7.1 PREFACE

The findings of Publication 3: "Cultures of Improvisation" reiterated that users combine suites of multiple technologies into communicative ecologies when connecting with each other (Madianou & Miller, 2013), requiring these ecologies to support textured, multimodal communicative practices that produce a sense of place. Communication is modulated through a palette of associations between platform features and affect, much as physical places have different "characters" and affective associations (Norberg-Schulz, 1979). This affective palette is produced anew among every permutation of relationships and technologies (Madianou, 2021).

Placemaking—not only translocal or virtual—needs the richness of such messy, textured terrain (Foth et al., 2020), and vernacular reinvention is an essential tactic for assembling such a sense of texture. As such, rather than being a realm of universal experiences solvable with singular global designs, placemaking through networked technologies cannot be addressed with a single technological intervention, or even a single approach to design.

As such, no interactive work can aspire to be a be-all and end-all solution to translocal placemaking. Accordingly, we did not seek to follow or verify the translocal modes of spatial intervention (or any other framework) as a checklist of traits for building the ideal software for placemaking. Instead, we saw them as an *opportunity to support* translocal virtual placemaking.

Exploring the design implications (Dourish, 2006a) of the translocal modes of spatial intervention provided the basis of the design-provocation study that emerged. I approached provotyping (Boer et al., 2013; Mogensen, 1992) as a way to "provoke" a disruptive and transformative codesign process, fashioning provotypes around the decentralised, collaborative co-creation tactics of story-making (J. Turner & Taboada, 2021). My core aim was software design that approached bugs and exploits not as problems to be solved away, but as opportunities for the users to participate in designing the interaction experience—much as desire lines reveal preferred walking routes (Malone, 2019)—and reflexively approach software development in ways that sense and support those desires.

7.2 PUBLICATION

The manuscript for Publication 4, "Unfinished by Design: Inviting Vernacular Improvisation through Provotyping Practices", is presented starting on the next page, preceded by a statement of contribution of co-authors:

STATEMENT OF CONTRIBUTION OF CO-AUTHORS

The authors listed below have certified that:

1. they meet the criteria for authorship and that they have participated in the conception, execution, or interpretation, of at least that part of the publication in their field of expertise;
2. they take public responsibility for their part of the publication, except for the responsible author who accepts overall responsibility for the publication;
3. there are no other authors of the publication according to these criteria;
4. potential conflicts of interest have been disclosed to (a) granting bodies, (b) the editor or publisher of journals or other publications, and (c) the head of the responsible academic unit, and
5. they agree to the use of the publication in the student's thesis and its publication on the QUT's ePrints site consistent with any limitations set by publisher requirements.

In the case of this chapter: **Unfinished by Design: Inviting Vernacular Improvisation through Provotyping Practices (under review)**

Contributor	Statement of Contribution
Amari Low	Conceptualization, methodology, data collection, data analysis, writing (original draft, review and editing)
Marcus Foth	Data analysis, writing (review and editing)
Jane Turner	Writing (review and editing)

Unfinished by Design: Inviting Vernacular Improvisation through Provotyping Practices

Abstract

This paper explores vernacular improvisation by laypeople and non-designers as a methodological lens for expanding the repertoire of codesign practice. Among online peer groups and relationships, communicators often enact creative "hacks" that transform available technologies to foster a sense of shared space at a distance, from using video calls as windows to reinventing text messaging channels into dwellings. Recognising how such informal, playful technology reconfiguration turns non-designers into codesigners, we emphasise the richness of vernacular improvisation for collaborative interaction design. Situated within a research project on long-distance relationship practices, we report on a design provocation project exploring collaborative technological reinvention as a vehicle for virtual placemaking. Participants interacted playfully with a series of deliberately unstable "provotypes," engaging in acts of vernacular improvisation. These were not treated as problems to be solved, but as creative inputs for reflexive design. Bugs became openings; misuses became methods. We reflect on how playful experimentation became sites of codesign, positioning participants as co-arbiters of technological form in reappropriating digital applications towards a sense of place. In turn, we offer vernacular improvisation not simply as a cultural reference point, but as a generative codesign framework that reclaims "misuse" and improvisation as valuable modes of collaborative world-making.

1 Introduction

Across everyday encounters with technology, people often engage in practices of "making do" – reappropriating and playfully subverting digital tools to accommodate local needs, desires, and constraints. Among long-distance communities and relationships, where even the sense of being in the same place must be negotiated through technologies not designed for that purpose (Hassenzahl et al., 2012), these reinventive tactics are both crucial and necessary. Long-distance communicators often creatively "misuse" technologies to facilitate such virtual placemaking: using hours-long video calls as ambient windows (Neustaedter & Greenberg, 2013), taking relatives on neighbourhood tours by live-streaming footage while walking, and more.

We refer to these small, everyday acts of adaptation as *vernacular improvisation*. Vernacularity is widely studied and theorised in the built environment, where it refers to the grassroots adaptation of materials and building practices to meet local concerns and needs (Salman, 2018). Vernacular making and adaptation also happen in the digital, where generic technological products are imaginatively reconfigured to address specific relational contexts (Burgess, 2006).

Characterising the reinventive practices of long-distance communicators as *vernacular improvisation*, the goal of this study was to challenge the tendency for interaction design to be resistant to such subversive usage. Conventional design practices often provide users with already-engineered apps that afford restricted opportunities to reinvent and remix them (Manovich, 2001). They often take an antagonistic stance towards creative "misuse" by viewing unintended behaviours as bugs to be eliminated or defended against (van Oordt & Guzman, 2021). We argue that there is, in fact, "use" within so-called "misuse": vernacular improvisation highlights how users increasingly assume an implicit yet active role in shaping technologies to better meet their needs (Singh & Arora, 2021). These acts of situated reconfiguration extend their participation beyond mere usage into the domain of codesign, albeit without formal recognition or deliberate intention.

Our study enacted a provocative interaction design project addressing this opportunity to adapt interaction design practices, enacting a design process that attended to vernacular improvisation as a form of codesign. With a view to scaffold virtual placemaking, we deployed four design provotypes – speculative prototypes that interrogate the field's assumptions and "provoke" new ways of thinking (Boer et al., 2013, Raptis et al., 2017) – to challenge the notion of digital interfaces as static final products and users as passive consumers. Our provotypes took the form of four playful multiplayer web applications with space-like interfaces (tile boards, corkboards and rooms), each designed to support self-directed, playful reinvention. Participants from online creative work-focused communities were invited to use these web applications.

We recorded observations of how they reinvented the application features to communicate, adapting the applications when their usage revealed unanticipated design opportunities.

Design work continued long after the applications' release, adapting along with users' reinventive activities. Disrupting the solutionism embedded in conventional design-thinking (Morozov, 2013; Richterich, 2024), we approached users' playful alterations and hacking not as problems but as opportunities to adapt software around their desires and social meaning-making. We analysed the resultant provotypes and field observations using the Elements-Behaviour-Experience framework (Dena, 2017), which centres play experiences as phenomena that emerge synergistically from encounters between users and technologies.

Through our inquiry, we posit a view of interaction design that sees it as enmeshed practices which both users and designers continuously and actively participate in. We offer playful, democratic methods of codesign (Huybrechts & and Teli, 2020) that not only attend to, but also move adaptively with, user-led reinvention, in turn corroborating how vernacular improvisation practices can inform codesign methods and expand how we conceptualise codesign in everyday life.

We distil the findings to three lessons, offering a pathway to shift interaction design away from conventional cycles of user feedback and limited codesigner recruitment (Banks & Humphreys, 2008), towards fully decentralised codesign that attends to lay expertise and reflexively adapts along with users' reinventive behaviours.

2 Vernacular Improvisation

Past literature describes a wealth of practices in which communities innovate with limited resources to meet everyday needs (Ray & Gupta, 2024; Sheth, 2020). Beyond passive consumers, these users participate in the reshaping of technologies, creating "customised" technological artefacts and practices attuned to their needs (Singh & Arora, 2021). For instance, during the pandemic, cyclists in Kolkata reinvented mobile fitness applications to network with fellow cyclists and subvert state-imposed restrictions against movement, producing "digital spaces that are brought into being through the tactical use of networked mobilities" (Ray & Gupta, 2024, p. 39). Similarly, activist organisations have appropriated commercial platforms in inventive ways to meet their political and infrastructural needs, often exposing the misalignment between platform logics and grassroots civic action (Hirsch, 2011). Such reinventive practices unfold in contextually sensitive ways among different communities, rooted in a "transnational imagination" (Lindtner et al., 2012, p. 78) that sensitises products of capital to diverse cultural contours.

We refer to these practices collectively as *vernacular improvisation*. Here, vernacularity refers to how these tactics are negotiated at the grassroots, enlisting everyday creativity to address diverse affective needs (Edensor et al., 2009). In built environments, vernacular architecture is that which has "developed through time and modified itself through trial and error to fulfill society's needs in harmony with the ambient environment" (Salman, 2018, p. 4), thereby adapting building practices to local resources and priorities. Such vernacular making practices are also recognised in the digital, where they entail the reshaping of digital artefacts for diverse relational contexts, environments and needs, "transform[ing] everyday experience into shared public culture" (Burgess, 2006). Through vernacular improvisation, users participate in the production of technological artefacts that more readily meet their affective priorities (Singh & Arora, 2021).

In this paper, we focus on small-scale, everyday forms of vernacular improvisation and customisation that occur during interaction with digital platforms and tools. These differ from appropriation, which typically involves reinventive acts by individual users (Dix, 2007), and from large-scale co-creation or produsage models (Banks & Humphreys, 2008; Bruns, 2006; Rowlands, 2016), where user contributions are formalised and commodified within platform ecosystems. Our interest lies in ephemeral, informal reconfigurations of the platforms themselves, arising from personal or relational needs and often remaining invisible to platform designers. This resonates with past work on vernacular creativity, which foregrounds the everyday, situated, and culturally embedded nature of participatory media practices (Burgess, 2006; Edensor et al., 2009). Because such creativity often emerges outside corporate or institutionalised design frameworks, it can shape digital cultural production in ways that are expressive of identity, affect, and collective meaning-making.

2.1 The Case of Transnational Communities

The internet presents robust participatory capabilities that have developed into online cultures where technological forms are democratically configured among many collaborating participants (Bruns, 2006). Such democratic participation is often realised in the placemaking practices of online peer groups, who reinvent familiar communication platforms into shared dwellings, requiring no formalised involvement with platform designers to participate in reshaping them.

We look to these cases of online placemaking as a rich case of vernacular improvisation being enacted in everyday contexts. A sense of shared, persisting places is crucial for relationship deepening (Tuan, 1979). When connecting at a distance, users must often re-negotiate that sense of place through technologies with transient, standardised interfaces (Wong, 2021) – traits which, as seen in place studies, can erase the texture and messiness needed to anchor the dwellers' diverse identities, memories, and attachments (Foth et al., 2020, Sabie et al., 2020).

Due to these limitations, communicators re-appropriate their “inappropriate” (Hassenzahl et al., 2012, p. 2) technological resources to perform a function they are not designed for: fostering shared places at a distance. Numerous instances of vernacular improvisation in long-distance relationships have been noted in past research, such as the use of Skype calls as virtual windows between distant places (Neustaedter & Greenberg, 2013) and the Italian practice of squillo: ringing someone once on the phone without being answered to create moments of shared attention without paying fees (Hassenzahl et al., 2012, p. 3).

In the context of online relationships, technologies form both artefact and place (Madianou, 2018): the technological products and the structuring terrain are inseparable, and the production of place is entangled with the material production of interfaces, network architectures, and devices. Here, vernacular improvisation becomes placemaking in a literal way. To restructure technology through “hacking” and subversive practices also alters and reimagines the places being made through them (Dourish, 2006).

As such, for online placemaking, vernacular improvisation is doubly important: existing communication technologies often poorly support affective, context-sensitive placemaking, and deepening relationships via communication technologies often entails reinventing them, to render them more hospitable to diverse placemaking practices across a plethora of vernacular contexts, concerns, and needs.

2.2 Research Gap

Everyday acts of vernacular improvisation signify an essential form of user participation in technology design. Despite this, vernacular participation is typically limited to the production of content and excluded from the design processes. Corporate design axioms tend to see such behaviours as contraventions of the intended purpose of design – to function within a broader organisational system (Cozens & Hills, 2003; Kudva & Kamath, 2020). The vernacular is practiced through the affordances of the digital interface, but the interface itself often remains resistant, actively locked against such subversive practice. Reflecting this, professional software development cycles tend to distinguish bug reports and feature suggestions as separate types of feedback to be addressed differently (Boyd, 2023; van Oordt & Guzman, 2021).

Correspondingly, technological interventions for long-distance connection tend to be deployed top-down, towards a generic, delocalised sense of physical intimacy over a distance (Hassenzahl et al., 2012; Li, 2019; Mueller et al., 2005). Less research has been sensitive to the ways that everyday technologies are *already* being redesigned/codesigned by users through their socially and culturally situated reinventive practices.

Focusing on the rich case of technology-supported placemaking, we contend that it is important to consider vernacular improvisation front-and-centre when designing for affective connection. By foregrounding vernacular improvisation practices, there is an opportunity to make design processes more sensitive to user affect and situated contexts, and to empower users as co-producers of technological artefacts.

In vernacular improvisation, communicators invoke a playful attitude and uncover new usage patterns by exploring the technologies' interactive openings in ways that subvert their intended use (Gaver, 2002). This resembles the creative exploratory attitudes of cooperative game players (Turner & Taboada, 2021) who improvise not in a "solving" frame, but towards affective enjoyment. We argue, thus, that thinking playfully is a useful frame for understanding vernacular-improvisatory practices and rethinking how we design with them. To address our goals of disrupting dominant assumptions and adapting design practices playfully, we enlisted a design provocation methodology. The usefulness of provocations as a subversive speculative method is discussed in the next section.

3 Provotypes and Play

Our study aims to answer a practice-based question: *How can codesign practices invite user-led vernacular improvisation through provotyping?*

Vernacular improvisation refers to tactics by which users participate in the design of technological artefacts by reinventing them at the grassroots to meet their needs. There is a rich opportunity to advance design practices by meaningfully addressing these reinventive tactics as a form of codesign. We undertook a design provocation study with the aim of speculatively enacting a codesign process that reflexively collaborated with such vernacular reinventive practices, and deriving insights for conducting design work in this vein.

Provocations, and the related provotypes (provocative prototypes), are a speculative design method aiming to interrogate the industry's dominant norms by "forc[ing] us to think of new ways of looking at the world" (Raptis et al., 2017, p. 30). They are provocative in that they "can call forth taken-for-granted conceptions…and [show that] conceptions can be different" (Boer et al., 2013, p. 87). Rather than solving design problems, provotypes challenge, subvert, and transform the practices themselves (Raptis et al., 2017). We view provotypes as inherently playful instruments that, through their subversive framing, can reveal surprising new directions for design practice (Gaver, 2002).

Our provotypes challenged the idea of digital platforms as static final products passively consumed by users, and of design as a hegemonic practice enacted unidirectionally by experts. By iterating adaptively on design opportunities presented by

our playtesters' improvisations and hacking, we enacted a design process where both users and designers democratically participated in reshaping the applications long after release.

This study drew on the first author's practice as an interaction designer and the participants' expertise in negotiating affective needs in digitally mediated spaces. Throughout the provotyping process, the first author acted as the designer-facilitator, developing the provotypes, organising engagement sessions, and iteratively revising the provotypes in tandem. This concurrent, reflexive development process sought to enact codesign as a reciprocal dialogue between the explicit and implicit design practices of both designer and participants.

3.1 Provotypes as Story-Making

To effectively elicit playful, subversive exploration, we structured our provocations around a *story-making* sensibility (Turner & Taboada, 2021), inspired by cooperative tabletop games like *Dungeons and Dragons*. Story-making signifies a democratic creative process where collaborating game players craft stories together reflexively through roleplay and imaginative action.

Story-making was relevant for two reasons. Firstly, designing for vernacular improvisation is, essentially, designing *for play:* Gaver (2002, p. 4) proposes design for playfulness as a radical direction "allowing room for people to appropriate technologies" towards "find[ing] their own meaning in uncertain situations" (*ibid,* p. 4). Secondly, story-making scaffolds a framework of co-production that is both asymmetrical and decentralised, paralleling the relation between designers and users. In story-making, a game master structures the play experience by setting the scene and roleplaying "as" the world, but the true act of creation occurs through a cooperative improvisation among players that "dethrone[s] the designer and allow[s] for participants' active imagination and authentic design agency to emerge" (Taboada et al., 2024, p. 219). Interaction designers, like game masters, design and structure virtual spaces which users then appropriate, hack, and reimagine to address affective needs. Following this connection, we designed our provotypes to elicit playful exploration; below, we refer to our participants at times as playtesters.

The co-productive reflexivity of this framework usefully allowing our provocations to address the codesign ethos of producing knowledge "via interactive practices of connecting concepts, (re)mixing ideas, and interpreting and reinterpreting existing artefacts" (Gray & and Kou, 2019, p. 43) towards reimagining interaction design.

Under a story-making framework, we codesigned four design provotypes via an incremental, iterative process scaffolded by a reflexive dialogue between designer and playtesters. Doing so, we adapted the iterative cycle of design-thinking beyond its solutionist framings (Richterich, 2024) to instead investigate playful "misuse" of web

applications as interactional desire paths (Kohlsted, 2016) revealing opportunities for co-operative configuration.

Under these objectives, and within our interest in placemaking, each provotype was ideated on and developed as a virtual play space where strangers could meet and create together. These applications were each devised based on different speculations on the idea of a space-like interface (book pages, tile boards, corkboards, rooms) that facilitated self-directed reinvention. They each supported simultaneous and asynchronous actions, and customisability – traits which together allowed participants' sentimental attachments to find anchorage in the interface and thereby invited the cultivation of places (Low et al., 2023). Each provotype broadcast individual users' changes simultaneously to all current users, and all changes persisted globally between visits. Each provotype was also designed to operate universally across modern web browsers and be accessible to a broad range of playtesters.

3.2 Participants

The initial invitation to playtest was put out online to three transnational, creative-work-centred communities that convene on the Discord messaging application. Each group constituted an informal community of practice, of non-designers experienced with play and narrative. Through a history of engagements like collaborative art projects, these participants were experts in navigating collaborative web environments as users and were habituated towards approaching web applications as opportunities for self-directed exploration and play. The provocations could thus leverage their tacit expertise in proactively adapting web platforms to their needs, and interaction prompts did not have to be issued, allowing their engagements to more closely reflect their meaning-making processes.

Each provotype included features allowing both facilitator and playtesters to create sessions or "rooms" that they could collaboratively configure in real-time. To start each provocation, the facilitator created either a single shared session for all playtesters, or one session for each Discord community, then broadcast the invitation links to the respective communities. All playtesting was organised on a voluntary basis and not all members from every community participated. Playtesters could also forward invitation links to people outside of the three communities, although it is unclear if this occurred due to the anonymity of user sessions.

Each successive provotype was developed based on reflections on the previous provotypes, encoding a reflexive structure in the design provocation process, reimagining the iterative, user-oriented aspects of design-thinking (Dam & Siang, 2020) towards generative explorations. Such a cyclic process of action, reflection and reintegration with practice also has the power to capture tacit forms of knowledge that are known only through doing, developed via the enactment of practice (Schön, 1979;

Rust, 2004). Throughout study, ideation, development, and field observations of interactions with playtesters were documented in a creative journal.

3.3 Evaluation

This study produced two kinds of data: journalled field observations of the codesign process, and the resultant provotype outputs.

To relate the tangible provotype outcomes with the experience of codesigning with participants, we evaluated and discussed the outcomes through the Elements-Behaviour-Experience (EBE) framework (Dena, 2017). Focusing on games and playful artefacts, the EBE framework considers play experiences as three interdependent layers of phenomena: *Experiences*, which are affective and psychological in nature, emerge when player *Behaviours* encounter the game's tangible *Elements*.

As playful interactive works, our provotypes aimed to capture vernacular improvisation by eliciting creative play. EBE was thus identified as a framework for evaluating the playful data surfaced by the findings. Because EBE considers both user/player experiences and technological artefacts as interdependent and reciprocally influencing each other, it allowed us to explore the nuanced, reciprocal relation between our playtesters and provotypes, as well as understand vernacular improvisation as ecological, meshworked practices.

4 Provocation Findings

The four provotypes were developed over two weeks, beginning with the *Animal Forum* provotype. After each provotype had been developed with a complete feature set, it was shared with the playtesting communities. Throughout deployment and playtesting, the first author held discussions with playtesters on Discord to understand their interests, needs, and frustrations. The provotypes were updated reflexively based on playtesters' interactions, requests, and suggestions where feasible.

Development work, user feedback, observations of configuration activities, and revisions to the provotypes were recorded in the creative journal. Wherever these insights raised interesting interaction opportunities that the current provocations could not be adapted to meet, a new provocation was created. This process was fluid and relied heavily on the facilitator's practitioner intuitions. Four provotypes were created and refined in total: *Animal Forum*, *Tiles*, *Corkboards*, and *Rooms*.

4.1 Provocation 1: Animal Forum

The first provocation, *Animal Forum*, was a web application that gave users a palette of animal and plant emoji "stickers" which they could cumulatively and synchronously place on the text of Rudyard Kipling's *Just So Stories* (Figure 7.1). It sought to invite

playful commentary on Kipling's fantastical narratives about natural history. Participants could attach text to each sticker, appearing in a box above it when hovered over. Presence indicators showed every users where other concurrent users' cursors were, along with their current selected animals. No identifying details were attached to any stickers or comments.

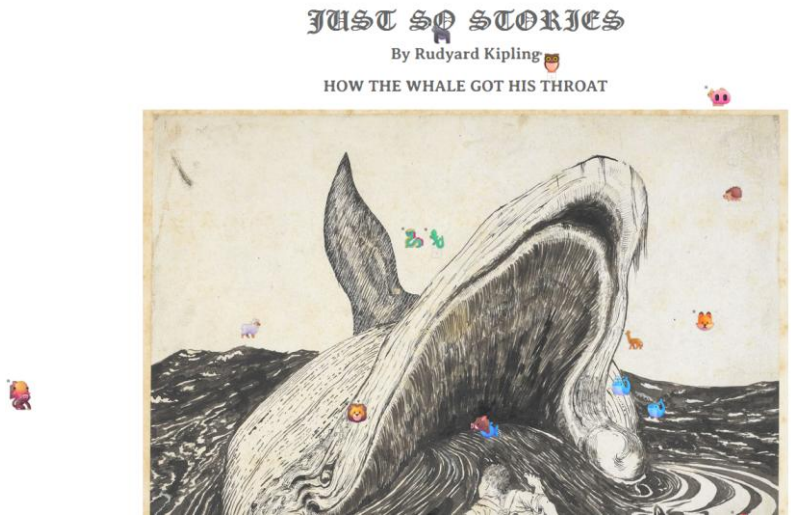


Figure 7.1: Provocation 1 allowed participants to place animal stickers on the text of Rudyard Kipling's *How the Whale Got His Throat*.

After *Animal Forum* was deployed online, the participant communities were sent the link to interact with it in the same, shared session. 17 separate user sessions were recorded for this provocation.

Users engaged with Animal Forum in a humorous and colloquial register. Messages attached to stickers were often used as "speech bubbles" (Figure 7.2), at times having animal emojis comment on themselves, for instance a lion sticker with the message "roar." Others commented or interacted with the base text, responding to words or illustrations and sometimes referencing internet memes, such as the "OK Boomer" meme in reference to the term "boomer" (male kangaroo) in the text. The interactions often also evidenced active imagination in the form of roleplay (Bowman, 2017): respondents were not commenting as themselves, but as the selected animal, engaging with the application in an imaginative frame. Such playfulness was often humorous, "rude," and embedded in a broader communicative culture.

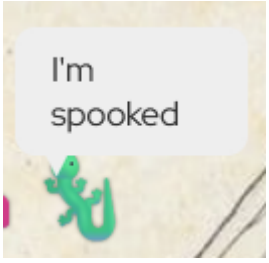


Figure 7.2: Using a note as a "speech bubble."

When discussing the provotype with the facilitator, playtesters raised the concern that they could not delete animal stickers they had accidentally placed while experimenting with the interface. Responding to this, the facilitator added a deletion button allowing playtesters to delete their own stickers. Participants who engaged via mobile devices mentioned they would sometimes place stickers accidentally on a touchscreen. Consequently, the sticker placement gesture was changed to a double tap.

With this simple customisable interface, a playful tonal register was already evident. Interested to explore these behaviours beyond the limiting context of the story's text, the facilitator created the second provocation, *Tiles*.

4.2 Provocation 2: Tiles

Recognising the potential to support more nuanced interactions, the second provotype was designed to afford a greater range of creative expression. *Tiles* featured a series of pages ("rooms") containing two-dimensional grids on which visitors could place customised square tiles. All users could create new rooms and add tiles to existing rooms. This provotype aimed to support accumulative configurations, dialogues of alterations (Low et al., 2023), and creative customisation.

Tiles had a malleable interface structured by a place-like analogy (a two-dimensional grid) and more flexible customisation features than *Animal Forum*. Users could design a tile, update its base colour, and overlay an image by entering an emoji or uploading a file from their computer. Clicking a square would place the custom tile there, and clicking an already placed tile would let one write an anonymous comment on it. All users' interfaces were updated synchronously, allowing them to view and react to each other's configuration activities in real time, both by writing comments and by creating their own tiles. All placed tiles remained on the board between sessions unless the creator deleted them, and all users could access the board independently of other users. Unread badges on tiles indicated when new comments were posted in real-time.

Once the *Tiles* provotype was completed as described above, the facilitator created a single 30-by-20 tile board and shared the link with all three participant communities, such that users who did not know each other would encounter each other there. Participants altered the board both synchronously and asynchronously over the course of three days, after which engagement tapered off. 35 separate user sessions were recorded for this provocation. One participant created a new tile board, but the majority of interactions occurred on the initial 30-by-20 board.

Participants were seen making use of all tile design features: image uploads, emojis, and tile colours (Figure 7.3). Drawing on their own cultures of imagery and humour, they uploaded images of animals, internet memes, and fictional characters, many of which were associated with the communities that were invited to contribute.

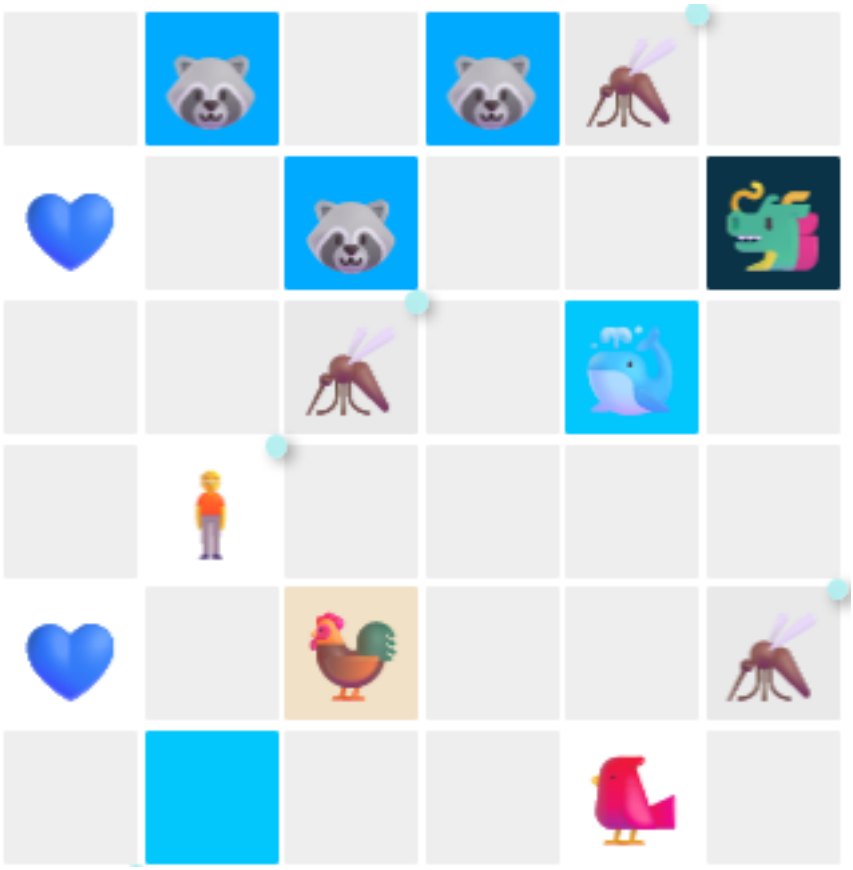


Figure 7.3: A segment of the public *Tiles* board at the end of the study, featuring themed emoji tiles.

The app's simultaneous and persistent features were key elements in the observed engagements. Participants reacted to others' alterations in real-time. In many instances, participants took cues from others and cooperatively created themed regions on the board – such as an area with insect and worm emojis and a few clusters of user-created art – in a process of community memetics that acknowledged and developed shared cultural capital (Blommaert & Varis, 2015).

One participant discovered that the customisable emoji could be replaced with letters, and created words using sequences of adjacent letter tiles. This behaviour then propagated across the board. The small size of the tiles supported the creation of larger images out of mosaics of tiles – a behaviour that emerged unexpectedly. These included a worm made up of coloured tiles, and the word "Bird" out of bird images.

The comment feature was usually used secondarily to the image-based tile interface, more often as a "decoration" for a tile than to respond to others. In one case, a participant scattered mosquito emojis across the board, each with an attached comment reading "the swarm." Perhaps because of the anonymity of board alterations, playtesters were less likely to address each other as individuals, and more likely to respond to the texture of the board *as the conversation itself*: the tiles were the primary dialogue, and comments were an addendum to it. However, these alterations often

enmeshed the cultural contexts of their participants, with many uploading custom images relating to ongoing community activities or their personal interests.

Overall, co-creative engagements on *Tiles* took on a memetic/mimetic, conversational tenor. The cumulative board acquired an orderly incongruence, with varied regions and textures, as well as instances where improvisatory humour and incidental events were collaboratively developed into enduring motifs. These observations echo past findings in collaboratively making practices in video games (Low et al., 2023; Quiring, 2015).

4.3 Provocation 3: Corkboards

The third provocation, *Corkboards*, adapted ideas from *Tiles* and removed the constraint of the grid. With *Tiles*, the grid constraint made it such that players' contributions could not overlap or touch. With *Corkboards*, players were able to create posts on a board, with the interface visually styled to resemble sticky notes on a corkboard (Figure 7.4). This choice aimed to communicate the interface's "layerability" via the skeuomorph of a familiar everyday surface.

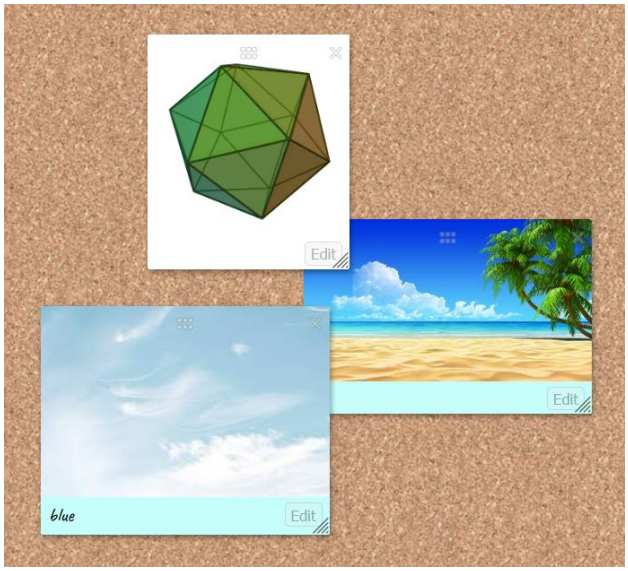


Figure 7.4: The Provocation 2 interface styled as a corkboard.

Any user could create a new board. Privacy controls allowed the board's creator to control the scope of its visibility and editing permissions. Since the layered quality of the *Corkboards* provocation was what differentiated it from *Tiles*, the facilitator included the ability to bring a post to the top of the layer order by clicking and dragging it, allowing users to sort cards in three dimensions. Posts could be edited and deleted by their owners. For an additional level of customisability, posts could be resized, and their background colours could be selected by the creator.

As with the previous provocations, all changes were broadcast in real time to active users. But unlike previous provocations, posts were moved through drag-and-drop. Rather than broadcasting incremental changes in position, repositioning events were

only broadcast after the drag action had ended. The board instead achieved a sense of simultaneous movement by using hand indicators to show when someone had "grabbed" or started editing a post (Figure 7.5).

Figure 7.5: The Corkboards presence indicator shown when a card is selected.

The *Corkboards* provocation was released for playtesting and feedback, with one separate board per community. 264 separate user sessions were recorded for this provocation, which was significantly higher than the last two. Multiple users created and populated new boards.

Playtesters quickly noted that this provocation was difficult to use on mobile devices because the board width changed depending on the width of the user's screen, meaning that some objects were out of reach for those with smaller screens. Responding to this feedback, the facilitator set a fixed width for each board, allowing users with smaller screens to scroll to view their full extents.

Playtesters also reported that uploading animated images (GIFs) caused animation frames to disappear and a still image to be displayed, due to the back-end image processing. As per this observation, the facilitator changed the upload processing behaviour to support animated GIFs.

In a process of community mimesis similar to the *Tiles* provocation described earlier (Provocation 2), participants accumulatively established a geography with clusters of posts following a shared theme, such as birds or internet memes. Here, a "bird cluster" called back to similar bird-themed clusters seen in the *Tiles* provocation, entangling different virtual spaces together via a common imagination. This surfaced a tendency for users to take cues from each other, similar to the practice of "dialogues of alterations" observed among builders in sandbox games (Low et al., 2023).

4.4 Provocation 4: Rooms

Becoming interested in the possibilities of designing for vernacular improvisation in three dimensions, the facilitator envisioned a three-dimensional multiplayer room design concept using open-source three-dimensional models. This concept resulted in *Rooms*, the fourth Place Provocation.

The application was designed to allow multiple players to alter persistent rooms together. Following on the earlier provotypes, *Rooms* broadcast alterations to all concurrent users in the same room, and persistently saved the positions of objects. Users could create empty rooms and populate them with objects from a menu by clicking to place them on the floor or walls. Those objects included chairs, windows, and cubes, each with different physical properties and placement behaviours: chairs were always created upright, while windows employed a render mask to reveal the background behind them (Figure 7.6). Cube colours could be customised.

Figure 7.6: A default room with some chairs, windows, and a cube placed.

Because this application made use of pre-supplied 3D models, there was a need to introduce customisation options to produce genuine expressivity. Transform tools allowed users to reposition, rotate, and resize objects disproportionally in any dimension. Users could also alter the colours of the walls and change the background scene, giving the room the sense of being situated in different locales. They could also upload images and place them as wall posters (Figure 7.7).

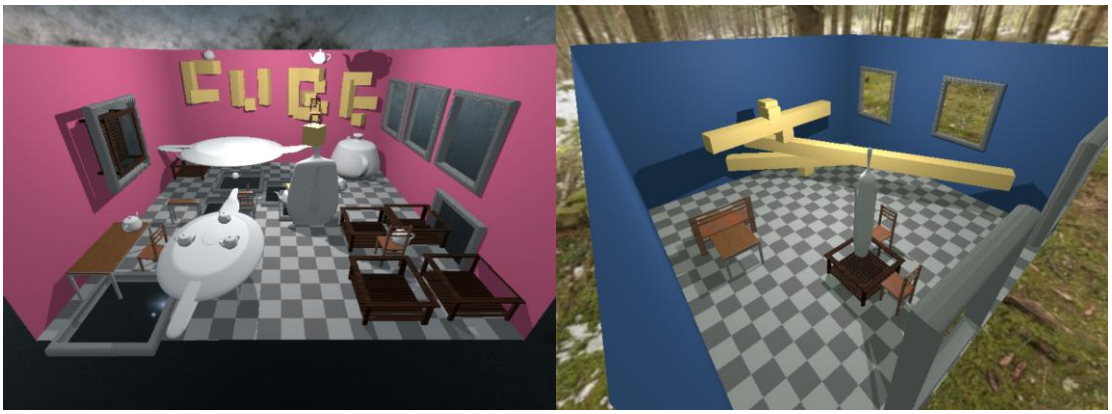
Figure 7.7: A poster placed on a wall.

Once the above features were completed, this provocation was sent to the participants for limited playtesting. Because of the smaller size of these rooms, interested participants were each directed to separate “rooms” of two to three users each. Five separate user sessions were recorded for this provocation. Potentially due the habituation of earlier provocations and pre-existing experiences, participants were able to quickly grasp the three-dimensional configuration controls.

Some interactions observed included participants creating tables out of stretched and flattened teapots and a rainbow out of stacked cubes. In one case, a participant placed an image of a ghost behind a window, causing it to disappear when viewed from one direction, and reappear when viewed from the other side, using this to create a “peek-a-boo” effect. In another case, a participant used the poster feature to place an image of a character in a window, making it appear that they were “escaping” from the room, although this illusion was affected by the image’s opaque background. Noting the opportunity for transparent images to be used as decorative objects (for example as stickers on furniture), the facilitator changed the photo behaviour to be placeable on object surfaces as well as walls and floor (Figure 7.8).

Figure 7.8: The revised photo behaviour allows photos to be placed flush with the surfaces of objects.

Overall, participants found many ways of reimagining the possibilities of the configuration tools beyond what was initially expected. As with earlier provotypes, they often used the customisable image tools as a way to personalise the space in accordance with their identities, but also used the unique physical qualities of some objects, such as the "vanishing" capabilities of windows and the alterability of cube colours, in unanticipated ways. Distinct "styles" of configuration emerged, with some participants favouring excessive clutter and others creating more orderly configurations (Figures 9.1 – 2).



Figures 9.1 – 2: Two rooms configured by different participants.

5 From Provocations to New Design Directions

Throughout all four provocations, the provotypes were presented to users without an express, instrumental purpose, and resulted in playful and exploratory behaviours. We

noted a prominence of humour, irreverence, and communal memetic/mimetic behaviours across all provocations: internet memes (Shifman, 2013), references to popular culture, and jokes that participants developed improvisationally and reflexively. Despite the anonymity of all users, playtesters often responded to each other without any internal or external verbal coordination. The improvisatory mimesis we observed could be understood as social meaning-making tactics, which drove playful vernacular improvisation as a way of making sense of unfamiliar cyberspaces.

Through our "messy" reflexive provotyping process, this output of four provotypes stand as embodiments of the outcomes of our user-led, vernacular-improvisation-driven codesign process. Its objective was to speculatively enact an open-ended codesign process that foregrounded user-led vernacular improvisation, and observe how this challenged conventional ways of doing design. Participants who were familiar with participatory internet technologies were invited to explore and reconfigure the provotypes without prompting, and we adapted the provotypes reflexively with attention to those interactions. Below, we outline some of the implications of our study findings, which we develop into lessons on codesigning with vernacular improvisation.

5.1 Codesign as Play

In this study, we focused on the case of online virtual placemaking. Enacting an open-ended design process where users and designers collaboratively reshaped technological artefacts after release, our provocations elicited a playful, irreverent and participatory tenor. Users comfortably subverted or redirected design intent: in discussion channels, they proactively requested changes, while within the provotypes, they rapidly devised new usage patterns that the facilitator did not anticipate, but subsequently designed to support. Our story-making ethos allowed the provotypes to synergistically develop along with these behaviours, thereby realising an improvisatory form of codesign.

Below, we analyse the provotype outcomes and field observations with the EBE framework, which allows us to contemplate play experiences as holistic, synergistic interactions between participants, designers, and technologies (Table 1).

Table 7.1: The interdependent Elements, Behaviours and Experiences observed in the provocations.

Elements		**Behaviours**		**Experiences**
Highly customisable multiplayer interfaces became increasingly populated with diverse visual "clutter" that was globally visible.	↔	Participants' exploratory, accumulative configuration activities expressively reflected personal and communal interests and humour.	↔	Provocations became nonverbal forums where users developed communal identities, visual language, and cultural capital in shared space.

Interfaces had no instrumental purpose, but had visually expressive elements eliciting configuration.	↔	Users enacted playful, irreverent alterations that made use of features and affordances in unanticipated ways.	↔	Users adopted a playful modality, enacting active imagination and playful attitudes towards developing the character of the virtual space.
Provotype interfaces gradually accumulated both developer changes and user configurations through a flexible, rolling update schedule.	↔	The developer exploratorily added and altered features to observe how participants made use of them. Participants actively suggested or requested changes.	↔	The responsive design process produced a back-and-forth interchange between developer and users within a culture of collaborative improvisation.

In our study, we recognised the participants' exploratory creative behaviours as ways of orienting themselves within the new virtual space, establishing affective connections, and thereby making sense of an unfamiliar terrain (Hardesty & Sheredos, 2019; Quiring, 2015). The EBE analysis reveals how playfulness was elicited through developer-led design decisions to telegraph the provotypes' responsiveness and adaptability, which in turn attracted transformative, imaginative engagements that developed from both individual interests and communities' cultural capital. Vernacular improvisation did not spontaneously appear through our design process: it was shaped by pre-existing community cultures and design languages, developed elsewhere and drawn into the play experience. Eliciting vernacular improvisation meant speaking to those community cultures.

5.2 Provotyping for Improvisation

Our provocations explored new methods for engaging vernacular improvisation substantially in codesign, shedding light on the designer's position in structuring this design process. The first author curated the experience by structuring the space to support creative usage, within which the playtesters independently and improvisationally explored ways to achieve their imaginative goals with the available resources. Users could act creatively and improvisationally to lead sense-making processes within the space.

Unlike conventional software development cycles, which are beholden to organisational priorities, release schedules (Boyd, 2023; J. Teixeira, 2017), and narrow time windows for user input into the design process (van Oordt & Guzman, 2021), the provocations did not have a defined "release day" nor aim to become static products. Rather, the provotypes were entangled in a continuous process of reflexive reinvention and adaptation between users and designers.

Changes were developed based not on formal feedback channels but on an active attention to the informal conversations in the user community, and both software bugs and participants' unanticipated reinventive behaviours were salient to attuning the design process to their affective priorities and goals. Imperfections were approached not (by default) as problems needing rectification but as a substrate for further design ideation.

Through this reflexive interchange, the facilitator and users became equal actors in the realisation of the works, echoing the communal active imagination embodied by players in a story-making game. As in such collaborative world-building, "the act of playing in and with…mirrors the act of designing in its potentially ontological condition" (Turner & Taboada, 2021, p. 422). Our reflexive approach to provotyping resonates with the framing of provocation, conflict, and appropriation as productive forces in codesign that foreground the political and situated role of the designer in making publics (Hansson et al., 2018). Rather than prescribing a fixed use, our provotypes invited contestation and reinterpretation, which invited user-led improvisations to guide design redirection.

5.3 Vernacular-Improvisatory Codesign

Conventionally, user involvement in design work – even codesign – is often limited to a small group during the development phases (Banks & Humphreys, 2008). After release, user input is gathered through formal feedback channels (van Oordt & Guzman, 2021). It is rarer for users to be actively involved with design on a longer time scale across the application's lifecycle. Our provotypes sought to enact codesign beyond such limited recruitment and front-loaded processes, encompassing the ongoing participation of everyday users.

From our findings surfaces our core proposition: that embracing vernacular improvisation allows the design work to move adaptively with affective, community-oriented priorities that are often otherwise opaque to the top-down designer. It entails breaking from formality, rigidity, and immutability of design processes, towards embracing messiness, playfulness, and care.

Just as architectural fields increasingly contemplate how buildings are continually reconfigured by dwellers after construction is completed (Brand, 1995), we present a model of extended design participation where users are continuingly engaged in the design work well into the artefact's afterlife. This envisions interaction design as a synergistic, living, and ongoing practice among designers and users, scaffolded by careful attunement to everyday contexts of use. To chart a forward path for vernacular-improvisatory codesign, we emphasise the following three lessons from our study:

1. *Embodying an ethics of attunement.* Hacks, breakdowns, and "misuses" may reflect user priorities that diverge from initial design objectives. To see these vernacular improvisation tactics as valuable signals for design asks for design

approaches that embody an ethics of care and attunement to vernacular adaptations. Users must be seen as more than consumers, but respected as equal arbiters of design intent.

2. *Adapting with messiness.* To codesign with vernacular improvisation, the design process must be adaptive enough to thread itself along unplanned misuses and changes. Design processes are enriched when they adopt a fundamentally improvisatory attitude, adapting tools and processes in order to follow the users' unplanned appropriations towards surprising outcomes.

3. *Scaffolding dialogue.* Design is not finished when the product is released; rather, it is only beginning. To design with vernacular improvisation, it is useful not only to have formal feedback channels, but for designers and developers to be attentive to everyday community usage and vernacular-improvisatory ideation that emerges when users bring the design output into everyday contexts of use. Rather than being imposed unidirectionally by designers upon users, design outputs become an active interchange between designers and users.

Together, these lessons provide implications for decentralising interaction design practices by collaborating with – rather than erasing – the situated, reinventive practices by which users codesign interactive applications. These behaviours offer rich entryways for co-producing with the users of design outputs.

6 Conclusions

This design provocation study reported on the development of four reflexive design provotypes, exploring user-led vernacular improvisation tactics as opportunities to codesign with users. Our four provotypes focused on virtual placemaking as a rich case of everyday vernacular improvisation, engaging members of three online communities with pre-existing cultures of creative play as participants.

Through the provotypes, we speculatively enacted alternative interaction design practices that involve users in the design process well after the design work's release. Inspired by the decentralised creative play of story-making games, the provotypes were incrementally developed in a way that was directed by, and responsive to, participants' unanticipated and even "exploitative" usage patterns as well as their explicit feedback.

Such reinventive behaviours not only offer valuable on-the-ground insights into users' affective needs, but also reflect the broader social fabrics in which technology use is situated. By attuning design work with vernacular improvisation, design can directly sense and adapt to user communities' dynamic usage contexts.

In our study, we attuned our design process to these practices through careful attention to user-led reconfiguration activities and discussions. Doing so became a way to

include users who, while lacking technical skills in interaction design, are experts in their usage contexts and already implicitly participate in designing interaction experiences.

Due to the contextuality of both vernacular improvisation and placemaking, the findings are not approached as generalisable data, and would be valuably extended by investigation with other cohorts. In our study, we engaged participants who were fluent in online creative play with a study design that was designed to leverage that fluency. Familiarity was key to eliciting vernacular improvisation, which requires a clear understanding of one's affective needs and the technologies' limitations. A different cohort may invoke different realms of familiarity (for instance, a different set of technologies), and consequently different instruments and provotypes. Further work exploring different social contexts may extend this knowledge with new insights.

Through our provocations study, we present an instance of how codesigning with vernacular improvisation can surface and act on a plurality of needs, habits, and usage behaviours. We emphasise ethics of attunement, adapting with messiness, and scaffolding dialogue as key considerations for designing for vernacular improvisation, towards empowering users as vernacular codesigners of interactive technologies.

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7.3 POSTSCRIPT

Immediately following this research phase, there was a need to reconcile the observations of the survey analysis and the provocations study. While intrinsically interwoven with each other, the two phases had produced diverging results (

Table 7.2). Whereas survey responses tended to be factual and neutral, engagements with the place provocations took on a deeply irreverent tone. Alongside observations of emergent, playful vernacular reinvention with the provocations' unintended defects, I also observed "naughtiness" that was absent from the survey responses. This included the development of running jokes, the celebration of shared cultural capital through references to a common theme, and free-flowing dialogues of alterations (as first noted in Section 5.2).

Table 7.2

A Comparison of the Survey and Place Provocations Phases

	Survey and thematic analysis	**Place provocations**
Process	This was a survey with free response questions asking about intimacy tactics in relationships implicated by distance. It considered how closeness is re-established in novel ways—not recreating practices from co-located intimacy but inventing new ones.	In the provocation study, I iteratively developed applications using the five modes of spatial intervention from the survey analysis as design implications. I invited strangers to make together within these applications and took their "hacking" of the interface as inspiration for further changes.
Data	Participants described novel practices like making things together online, reading shop reviews, and playing video games over calls. Responses described some communal/group experiences too—interwoven public and private spaces. Responses were less humorous and less colloquial.	Participation took place in a semi-public context, and felt informal—more humour, active imaginative practices, and playful reinvention of the interface were seen. I observed in action. Many behaviours relied heavily on familiarity with the virtual online medium, its limitations, and its affordances.

Practices explored	As the study focused on familial and romantic relationships, the responses tended to explore intimate practices Mostly, these practices were either undertaken one-to-one or within a family unit, with some references to wider communities that participants were part of.	Joy and playfulness were seen in engagements with the provocations, but they were also impersonal, in the sense that there were not many or intimate disclosures, nor expressions of affection and intimacy.

Here, I call attention to the way that this divergence yet again points to the difference between disciplinary knowledge and action knowledge. The survey phase was a conventional study conducted with a questionnaire instrument, distributed through the internet to anonymous participants who were asked to answer in a free-response format. The results were analysed through a thematic analysis framework, overall invoking deductive knowledge production (Barnes & Melles, 2007). The place provocations took the form of an iterative user test, a technique drawn from interaction design methods. This phase did not deploy a formal instrument of data collection: it was an exploratory process conducted in dialogue with the testers, where outcomes were emergent and took the form of insights for developing the creative element of this research project.

The survey had encouraged a formal and factual register, under which the richness of translocal vernacular reinvention practices was flattened away. In this way, the place provocations revealed that the final stage work for this research project would require open-endedness and reflexive synergy between users and designers in order to glean rich insights about placemaking *in action*. Emergence was a key factor in these observations: the provocations provided a substrate for vernacular reinvention behaviours and therein emerged a reflexive back-and-forth between users and designer. For the research to sense such inventive richness, it would have to not only account for but also *be immersed in* the unplannable, emergent, and always-becoming qualities of translocal placemaking and vernacular reinvention (W. Gaver, 2022).

The idea of co-creation as a lens for researching these chameleonic translocal practices became the starting point for the second study of the Design phase. As indicated by the contemplations above, I aimed to have participants co-create on their own terms, playing a facilitatory role.

Here, I reflect on translocal vernacular reinvention in relation to my own experiences. The reinventive tactics I enact daily are learned communally. Watching livestreamed movies together while in voice calls, creating shared group chats, drawing on shared canvases, using Discord servers as rooms to decorate, and so on, are all tactics I adapted from observation of others. In other words, the practices of translocal placemaking do not simply live in independent "bubbles" but are often threaded together by practices of communal learning. Similarly, many people in translocal situations already know how to craft mediated places but may not recognise such practice knowledge as formal knowledge.

Different practices and tactics also not deployed symmetrically: public and private, intimate spaces overlap each other, signifying a scalable co-presence (Costa et al., 2022) where different applications are interdependently used at different privacy levels. A family might have a private WhatsApp group, and they might also be Facebook friends replying to the same friends' posts; they might hold separate discussions "elsewhere" in each platform, as if in adjacent rooms or buildings. In other words, different platforms are not discrete cells to which interactions are confined.

Speaking to the above observations, a pluriversal view of translocal places is a reminder that each dweller is the expert in their own lived contexts and also that these lived realities are porous to each other, with practices and ideas being transmitted and practised communally. To understand something so dynamic and context-sensitive, I saw usefulness in eliciting playful, exploratory tactics that test and reimagine the mediating space itself. There was an opportunity for the final research phase to be more like the provocations: invitations to play.

The final phase aimed to develop a rich picture of how places are being made translocally through vernacular reinvention. It deployed a workshop instrument, both to elicit creative expressions about translocal places *and* to host reinventive placemaking tactics in situ (Ørngreen & Levinsen, 2017), experimenting with the vernacular-improvisatory codesign methods developed in this chapter. One major contribution of this design provocations study to the thesis' research programme was that third Place Provocation (*Corkboards*) was adapted into a digital space for conducting a remote asynchronous workshop. The next chapter (Chapter 9) presents the findings of that workshop study.

Chapter 8: Mapping Transplaces: Placemaking through Storying in Technology-Mediated Transnational Relationships

Up to this point, the research studies of this thesis project had emphatically revealed that people *are very skilled in breaking things to make them work for themselves*. This is what is signified by the concept of vernacular reinvention. It inverts the power dynamic between the designer and the user: through vernacular invention, users become designers in their own right, reshaping technologies playfully to better address their situated needs (W. Gaver, 2002).

The place provocations reiterated the suitability of creative, practice-based approaches to researching technology-mediated placemaking. The provocations demonstrated how—more than interesting anecdotes—creative co-production itself could act as an instrument of knowledge gathering about translocal placemaking, capturing irreverent behaviours that are otherwise attenuated by instruments demanding a formal register of communication. In contrast to how most software is built, the participants foundationally influenced how the provocations developed through a back-and-forth of ideas with the researcher/developer.

In this final study of the Design phase and the thesis project as a whole, I sought to engage co-creative methods to address the gaps revealed by previous phases. A co-creative approach "provide[s] space and tools for knowledge co-production, engaging communities, [and] for generating data beyond the scope of most interview-based methods" (Kunt, 2020, p. 90). Addressing the above opportunity, this phase enacted a vernacular reinvention–inspired workshop study, with the dual goals of eliciting both storytelling about translocal placemaking as well as acts of placemaking in situ. It aimed to tacitly invite placemaking to understand patterns of motivations, tactics, and materialities, from the abstract to the specific. As the researcher, this workshop additionally involved improvisation and

reinvention on *my* part—reimagining the elements of the conventional workshop methodology to function in an asynchronous online context. This chapter explores the process of developing the study design for this final phase of the research projects, presented as Publication 5: "Mapping Transplaces."

8.1 PREFACE

To explore the practice of vernacular reinvention as a framework for design research, the fifth study of the research project was conceptualised as an asynchronous workshop study within an unconventional multiuser platform. Inspired by the feral mapping work *Feral Atlas* (2020) and multiuser dungeons (Tomek et al., 1999), the workshop space utilised a custom-made virtual whiteboard that could be configured flexibly to evolve with users' interactions. This aimed to allow a plurality of incongruous, layered expressive modes to coexist, supporting multiple users in cultivating diverse niches within a shared multiplayer space as well as interacting with each other.

That said, my research thus far had clearly shown that places emerge from habits, priorities, needs, resources, and opportunities for meaningful dialogue, both verbally and tacitly through co-creative actions. Simply bringing people into a shared workshop space would not necessarily make placemaking happen. Since one of the intentions of this workshop was to contemplate how vernacular reinvention becomes placemaking, the development of the methodology and research design would be a part of the knowledge produced by this study.

Within a creative practice lens of this thesis project, I considered it important not to demand a single way of being or doing. When looking for vernacular reinvention—as the place provocations (Section 6.2) showed—there was richness to be gleaned by offering participants simple but diverse tools that are amenable to reinvention.

As such, I engaged a codesign workshop method to bring the methodological insights from the provocations study (Chapter 7) to address the survey's research questions (Chapter 6). It set out to enact co-creation as a way of revealing a view from everywhere, through a two-pronged approach: (a) thematic analysis of stories, anecdotes, and discussions about translocal placemaking, and (b) in situ observation and analysis of participants' vernacular reinvention and placemaking with the malleable interface.

It employed an asynchronous workshop method as an instrument for surfacing rich, nuanced data about translocal interactions which the qualitative survey instrument had elided. A core aspect of this research design was to facilitate participants in interacting with

each other, and to support flexible interaction among a globally distributed cohort in different time zones. I sought to cultivate a space where participants could talk to each other about the project, allowing for collaborative problem-solving and synergies to emerge (G. Harper & Kroll, 2008).

Drawing from my practice knowledge about organising collaborative creative projects, I recognised the importance of sustaining morale and interest via a schedule of check-ins. Towards all these goals, I devised creative prompts inspired by cultural probe materials (B. Gaver et al., 1999) which aimed to invite a broad range of responses, and to be "misinterpreted" to elicit creative responses. While the material prompts of the study emerged from the survey results, I also took direction from the methodological insights of the theory-forming study (Chapter 5) to structure the observation and analysis here. In that earlier study, participants were given only a basic prompt to build a shared home base; the diverse creative tactics they enacted were not prompted by facilitator directions, but rather emerged dynamically. Offering participants an open-ended prompt and a wealth of tools, rather than instructing them (as in "build a house at this location with these materials"), kept the study open to such emergent behaviours. That lesson was applied in the structure of the workshop phase.

In terms of *where* the workshop would be organised, I sought to deploy the workshop method asynchronously, as part of the study's contribution to knowledge about how people create transplaces at a distance. Recent research in online creative workshops, particularly during the COVID-19 pandemic (Gonsalves et al., 2023), has engaged videoconferencing software as a vehicle for discussing and sharing knowledge and tools with participants. However, videoconferencing software largely does not support persistent sessions that can be revisited over several days. An instrument that could be configured, facilitate multiple modes of creative expression, and record rich data from distributed participants was necessary. Addressing this need, I developed the third Place Provocation, *Corkboards* (Chapter 7), into a collaborative whiteboard application to function as the workshop space. Developing the platform myself afforded me the opportunity to fine-tune it to capture the kinds of interactions and data that the research needed. These priorities included tagging features, configurability with HTML, image, and video embeds, and a way to replay a time lapse of participant alterations.

Initially, I referred to this board as the "collaborative virtual whiteboard", then the "infinite board", and finally as the *(In)Finite Canvas*, following the incorporation of a weave

pattern in the background of the board, and as a play on McCloud's (2000, p. 222) "infinite canvas".

8.2 PUBLICATION

The manuscript for Publication 5, "Mapping Transplaces: Placemaking through Storying in Technology-Mediated Transnational Relationships", is presented starting on the next page, preceded by a statement of contribution of co-authors:

STATEMENT OF CONTRIBUTION OF CO-AUTHORS

The authors listed below have certified that:

1. they meet the criteria for authorship and that they have participated in the conception, execution, or interpretation, of at least that part of the publication in their field of expertise;
2. they take public responsibility for their part of the publication, except for the responsible author who accepts overall responsibility for the publication;
3. there are no other authors of the publication according to these criteria;
4. potential conflicts of interest have been disclosed to (a) granting bodies, (b) the editor or publisher of journals or other publications, and (c) the head of the responsible academic unit, and
5. they agree to the use of the publication in the student's thesis and its publication on the QUT's ePrints site consistent with any limitations set by publisher requirements.

In the case of this chapter: **Mapping Transplaces: Placemaking through Storying in Technology-Mediated Transnational Relationships (under review)**

Contributor	Statement of Contribution
Amari Low	Conceptualization, methodology, data collection and analysis, writing (original draft, review and editing)
Marcus Foth	Data analysis, writing (review and editing)
Jane Turner	Writing (review and editing)

Mapping Transplaces: Placemaking through Storying in Technology-Mediated Transnational Relationships

Abstract

As communication technologies advance, more families and romantic partners are maintaining relationships across vast distances, cohabiting technology-mediated spaces in lieu of physical proximity. Such translocal relationships establish a sense of home and shared place amid the unique logics of technology mediated spaces. In this article, we report the findings of a collaborative mapping workshop seeking to understand the ground-level practices of translocal technology-mediated intimacy, with a view to rethinking how we design interactive technologies for the relationships that rely on them. We invited 10 participants to co-map stories of their experiences maintaining familial or romantic relationships via networked technologies like the internet, telephone, and physical mail. Through participatory thematic analysis of the narrative data and in-situ workshop engagements, we posit the new concept of Transplace to understand technology-mediated placemaking as affective entanglements of physical, geographical, and technological entanglements, rather than considering technology as a way to erase distance and difference.

Statements and Declarations

Ethical Considerations

Ethical approval was obtained from [redacted for anonymous peer review] to commence the study.

1 Introduction

In the past two decades, advances in networked technologies like the internet have made it easier to maintain familial and romantic relationships over a distance. Those who do so often encounter a sense of translocality—global movements of people, information, and capital across distant localities—in their everyday intimacies (Appadurai, 1995).

Although members of such translocal relationships do not live together, the importance of shared places and 'shared living' (Neustaedter and Greenberg, 2013: 43) continues to be important. Places are crucial for relationship deepening (Tuan, 1979), as sites of affective meaning where dwellers' sentimental attachments are anchored to

configurations of space (Foth and Guaralda, 2017; Graham, 2009; Relph, 1976; Tuan, 1979).

In long-distance relationships, this sense of place must often be remediated via networked technologies (Madianou and Miller, 2013)—such as social media, telephones, and physical mail—which are often not designed to fulfil these needs. Experiences and intimate gestures that are taken for granted in co-located relationships, such as acting in tandem or nonverbal affectionate gestures, must be negotiated through their structuring logics and limits.

As a result, users tend to 'hack' technologies towards unanticipated usage patterns, adapting them to support their diverse, unique and situated relationship practices (Hassenzahl et al., 2012; Lindtner et al., 2012). Examples include the use of video calls as ambient windows that transmit sensory data (Neustaedter and Greenberg, 2012) and 'squilloing' (The Sydney Morning Herald, 2002)—ringing someone on the phone without being answered to establish shared attention without call fees. The dwellings that emerge through these tactics are shaped as much by how dwellers reinvent technologies as they are by the technologies themselves (Hassenzahl et al., 2012: 30:2; Madianou and Miller, 2013).

Previously, sites of computer-mediated connection have been referred to as 'cyberplace' (Wellman, 2001). More recent research contemplates the idea of polymedia practices (Madianou, 2021; Madianou and Miller, 2013) where relational activities do not only occupy individual technologies but draw several together into ecologies attuned to interpersonal and cultural contexts (Madianou, 2021; Watson et al., 2020). However, there is less research that looks at what these polymedia ecologies mean for how we design technologies to support the relationship practices relying on them.

Our article reports on the findings of a collaborative mapping workshop aiming to address that gap. Understanding how polymedia and technology design intersect through subjectivist ontologies of place, we recognised translocal relationship practices as place*making*: the development of relational attachments that assert shared dwellings as continuities across heterogenous digital-physical fabrics.

Inhabiting a custom-built collaborative mapping web application as the workshop space, 10 remote participants shared and intertwined stories about connecting with family members or romantic partners at a distance. Addressing the intersubjective nature of place, the workshop gathered diverse narratives of translocal placemaking and analysed them through a participatory thematic analysis.

The workshop data revealed the diverse everyday 'storying' (Akram, 2023) and configurative practices by which placemaking occurs in technologically mediated contexts. We surfaced a plurality of context-sensitive practices that habituate a sense

of continuity and shared place across geographical disjoints, physical materialities, and ecologies of networked technologies, unfolding differently in each relationship context. We propose to refer to these co-produced life-worlds as *transplaces*, signifying an emerging multilocal, multi-layered ontology of place. Through the lens of transplace, the findings reveal lessons for rethinking how we design interactive artefacts for translocal placemaking.

2 Translocal Placemaking

In this section, we constitute the idea of translocal placemaking. First, we look at how place is connected with interpersonal relationships, a connection that becomes complicated as networked technologies increasingly mediate human connections transcending national borders (Section 2.1). We explore a body of research that looks at technology-mediated social connection (Section 2.2) and how coherent sense of place is negotiated across digital spaces through the idea of life-worlds (Section 2.3).

Finally, we highlight the need for more interaction design research that honours the pluriversality of translocal places and attends to the context-sensitive meaning-making processes that produce them at the ground level (Section 2.4).

2.1 Translocal Place

Place refers to the phenomenon in which humans orient themselves in the world through networks of subjective attachments to space (Tuan, 1979). Places are more than just tangible configurations of physical material; they also '[encompass] social, cultural, and psychological spaces … shaped by the existence of multilayered actors co-existing in it' (Y. Luo and Leitao, 2024: 3). Places are also understood to incarnate, materialise and anchor interpersonal relationships in space, as in homes and dwellings (Ingold, 2013; Tuan, 1979).

The study of *placemaking* is interested in how such places form. Conventionally, placemaking considers how governments and corporations construct towns and neighbourhoods from the top down, but increasingly also contemplates the slow, bottom-up processes by which citizens affectively configure built space (Foth and Guaralda, 2017; Gonsalves et al., 2021b).

As trade and communication technologies advance, human lives, social networks, and places increasingly overlap multiple physical locations. The term 'translocality,' coined by Arjun Appadurai (1995), refers to an understanding of places as local nodes in the confluence of global forces like 'the nation-state, diasporic flows, and electronic and virtual communities' (*ibid*, p. 197). Under a translocal worldview, places are identified by flows, heterogeneities, and 'interconnected networks which generate hybridized identities – both individual and spatial' (Akram, 2023: 253).

Importantly, translocality emphasise the *pluriversality* of place—sustaining diverse and vastly differing ways of being 'coexisting in harmony yet retaining their differences' (Y. Luo and Leitao, 2024: 5). Localities do not merely live at the mercy of global flows; they diffract and transform global phenomena across their diverse contexts. As Ingold (2013) describes, rather than being reliant on the structures of global networks, places are *meshworks*—continually re-negotiated among those who navigate, traverse, and dwell in them, producing sites of subjective meaning through everyday practices.

Speaking to this view, Akram (2023) puts forward the concept of *engendering* as a framework to connect translocality and placemaking. Based on how new migrant neighbourhoods form, engendering encompasses three processes: *spatialising* (developing the social character of a place as distinct from its surroundings), *situating* (interconnecting place with broader geographies and identities through movement and journeys), and *storying* (forming ensembles of meaning through affective everyday traversal). Akram emphasises that understanding translocal placemaking demands attention to the affective, narrative processes of meaning-making by which place dwellers produce place every day.

Thinking with translocal placemaking can be useful for not only physical neighbourhoods, but also the places formed through technology-mediated relationship practices, which often transcend bounded localities but are identified by similar dwelling and engendering processes. Below, we extend the above frameworks to comprehending such mediated contexts.

2.2 Translocal Relationships

The proliferation of translocal trade and communication networks has also produced a growing number of translocal relationships, often maintained through digital technologies like text messaging, voice calls, videoconferencing, physical mail, and more (Janning et al., 2018). Whether familial, romantic, or otherwise, relationships maintained at a distance experience translocality on a microcosmic scale—they encounter prohibitive national borders, disparate time zones, cultural differences, and other pervasive intersections of global and local phenomena within their everyday lives (Zamanifard and Freeman, 2019).

In such relationships, bodies and practices themselves are translocal, navigating technology-driven information flows, cultural exchanges, and material mobilities at the ground level. These acts of navigation do not involve physical re-location, but traverse a 'symbolic space made up of technological affordances, algorithms and APIs' (Madianou, 2018).

Nevertheless, such relationships still maintain similar priorities of affirmation, shared history, shared places, and 'shared living' (Janning et al., 2018; Neustaedter and Greenberg, 2013)—only, the places being made in these relationships are primarily

scaffolded by networked technologies (Madianou, 2021). Without regular physical proximity, technologies must be made to meet placemaking needs, and as a result, relationships maintenance activities must adapt to their affordances and limits (Alinejad, 2019; Lim and Suh, 2014; Ruppel et al., 2018).

Technologies fundamentally structure the interactions that occur within them (Dourish, 2006): they determine not only what practices are possible through them, but also the tonality and affect with which they are done. Watching a show together in a co-located relationship is usually trivial, but establishing a sense of 'watching together' in a translocal relationship relies on combining voice calls, video streams, and even virtual realities (Rzeszewski and Evans, 2020) that were not necessarily devised for this purpose.

Many instances have been observed of translocal interlocutors 'appropriating' (Lindtner et al., 2012) technologies towards usage patterns unanticipated by their designers. Examples include using video calls as ambient windows that transmit sensory data to 'connect two locations in a more permanent fashion' (Neustaedter and Greenberg, 2013: 51), and squillo, the practice of ringing a phone without being answered to establish a moment of shared closeness (Hassenzahl et al., 2012). Users often also achieve a sense of varied terrain by recombining technologies into ecologies where each communication channel entails different tones, affects, and privacy levels (Costa et al., 2022; Ruppel et al., 2018).

The prevalence of such practices underscores the technological fluency and habituated reinventiveness that translocal relationships tend to elicit. Madianou (2021) puts forward the theory of *polymedia* to describe such qualities of mediated connection. In polymedia, intimacy is modulated through the considered, fluent, and fluid use of multiple technologies assembled into communicative ecologies (Hearn and Foth, 2007). Technology shapes not only pragmatic acts of connection but also the languages and affects of translocal intimacy.

Polymedia reiterates the pluriversality of translocal technology-mediated relationality: there is no singular mediated relationship experience; each suite of practices is informed by diverse cultural and interpersonal contexts, differing from every other.

2.3 Translocal Life-Worlds

Polymedia is useful as it draws connections between technology usage practices, local cultural contours, and translocal placemaking. Another useful theory that complements it is Hardesty and Sheredos' (2019) virtual worldly ontology. This ontology considers how game players dwelling together across multiple virtual realities assert a sense of social and experiential continuity across them, such that the constructed nature of virtual space recede from awareness—that is, it becomes a life-world (Coates and Seamon, 1984). The establishment of such life-worlds is a kind of placemaking that

cultivates sites 'laden with shared meanings … that solicit appropriate actions' through accumulative relational entanglements (Hardesty and Sheredos, 2019: 367).

The virtual worldly ontology is an opening for thinking about the role of placemaking in scaffolding continuity across polymedia environments. Translocal relationships negotiate polymedia ecologies by engendering places, the way Akram (2023) describes: *spatialising* the multi-layered technological fabric as a continuous experiential life-world; *situating* relationship practices among networks of broader distributed communities; and *storying* to negotiate and habituate coherent subjective meanings across these fragmentary spaces.

2.4 Storying with Translocal Placemaking

Past research notes that the fields of geography and design cross-inform through their mutual interest in how human actions shape the material world. Exemplified by architecture and product design, one may consider how design 'generates space that human geographers study' while geography '[develops] language, culture, sight and sound as a source for contemporary design activities' (Harland and Santos, 2014: 1–2).

This is a useful framing for considering the places cultivated through networked devices and practices. In translocal polymedia realms, the technologies that carry interactions and sustain placemaking—from postal systems to virtual realities—are produced through design practices. There is room, thus, to interrogate how design practices can respect the pluriversality of translocal relationship practices and places.

However, current research about interaction design for long-distance intimacy has largely not considered translocal thinking. In a field that has historically centred the 'issue-resolving cure-all' (Cross, 2023: 8) solutionism of design thinking, interaction design research often investigates or invents ICT artefacts striving to fix separation based on assumed universal priorities of intimacy (Hassenzahl et al., 2012; Li, 2019; Li et al., 2023; Mueller et al., 2005). Rarely do such projects address how geographic specificities contextualise relationship practices (Gielis, 2009) or the assertion that separation cannot be 'solved' by technology use alone (Madianou, 2016: 199).

To translate sociological knowledge into lessons for interaction design requires fine-grained, dweller-led perspectives that can illuminate translocal technology use from within. In connection to this, Akram (2023) emphasises a need for more research that presents translocal places as an 'ensemble of narrative' (*ibid*, p. 254) told from the ground-level, resisting the stratifying effect of a top-down view. Looking to South Asian oral histories, Akram considers places as meshes of layered narratives, attending to which requires engaging with 'the ethos of equity and community, bringing forth polyvocal and community-driven storytelling practices' (p. 256).

Our study set out to construct a polyvocal understanding of technology mediated placemaking by considering the complex ecologies into which not only technologies, but also physical spaces and relationship practices, are entangled. Extending both Madianou's (2021) polymedia thinking and Hardesty and Sheredos' (2019) ontology of virtual worlds, our study sought to understand how members of translocal relationships negotiate life-worlds and continuities across the heterogenous, multi-spatial logics of polymedia.

Our collaborative mapping workshop drew on *mapping* as the practice of visualising and representing narratives of place, where maps 'tell stories of some sort, be they of measurement or culture' (Turner et al., 2013: 8), and in doing so, 'embody, reaffirm and publicize the personalisation of place' (Taçon, 1999). Beyond charting physical spaces, our collaborative mapping aimed to also visualise dynamic and subjective relations—how the people and elements of place are enmeshed with each other. Our methodology, which we detail in the next section, underpinned a mapping process that was collaborative, reflexive, and always-becoming, looking to maps and mappings as 'both the stories and story tellers' (Turner and Taboada, 2020) and giving voice to the spectrum of subjectivities that form place.

3 Methodology

Situated within a programme of research into technology-mediated placemaking in translocal relationships, this study explores a methodological implementation of findings from earlier research phases. Translocal placemaking is a dynamic, ever-evolving process constituted from diverse social meaning-making practices (Ingold, 2013). Those practices are not necessarily thought of by the actors as 'placemaking.' To generate knowledge on translocal placemaking thus required attention to the everyday 'layperson' perspectives forming an intersubjective view of place (Foth et al., 2009). Within this framing, our collaborative mapping workshop study asked the questions: *How do placemaking practices in translocal relationships adapt to and reflect their technological and affective contexts? How can understanding these bottom-up practices help us rethink technology design for translocal placemaking?*

The first question asserts a pluriversal understanding of translocal place. Centring storying—the everyday sense-making processes by which dwellers co-develop the affect of places (Akram, 2023)—we deployed a collaborative mapping workshop method to elicit participant stories about placemaking through networked technologies (Section 3.2.1). We approached the collaborative mapping workshop as a narratively oriented practice, able to thread an open-ended inquiry along everyday practices.

The second question scaffolds a pathway for analysing the findings. To allow the rich plurality of grassroots perspectives to reveal alternate design practices, we saw value in letting the participants, who are immersed in everyday translocal relationality, interpret

and highlight the salient themes in each other's stories. To do so, we organised a participatory thematic analysis (Braun and Clarke, 2012) among participants through social tagging tools (Trant, 2009) (Section 3.2.2).

Importantly, narrative and subjective data have the potential to surprises researchers, producing unanticipated emergent outcomes. In design research, data are increasingly being rethought for their ability to produce insights beyond the problem framing of the research (Gaver et al., 2022; Hepburn, 2020). To keep our study open to emergent findings, we adopted an abductive mode of enquiry (Arefi and Tayyebi, 2024). Complementing established frameworks like thematic analysis, our analysis included reflexive engagement by allowing the participants and data to guide us towards activation and development of new theories.

Instead of seeing long-distance intimacy as a problem to be 'solved' with design, we sought to transform perspectives about interaction design through on-the-ground insights into what roles technologies occupy in the users' lives (Munro, 2016).

3.1 Participants

One aim of our study was to capture the asynchronous tactics of translocal placemaking. To meet this objective, we employed a purposive sampling method, recruiting participants located in different continents and time zones. We sought adults with recent experiences maintaining familial or romantic relationships over long distances, prioritising familiarity with internet technology as it ensured participants could engage fluently with the workshop instruments. Accordingly, the workshop was designed for asynchronous, geographically distributed participation.

We first sought participants from among those who had voluntarily left their contact details in a previous study within the same research programme. Further participants were recruited through public calls-for-participations disseminated through social media websites like LinkedIn and Tumblr.

10 participants were recruited to the workshop (Table 8.1). Participants were located in Australia, Italy, the United States, Colombia, Scotland, New Zealand, and Norway. All personally identified themselves as people with family members and romantic partners living overseas, and had kept in touch with their families and romantic partners through the internet in the past 6 months. During informal discussions, many participants emphasised the personal significance of the subject of connection at a distance.

Table 8.1: Study participant demographic details

Participant	Age	Country of birth	Country of residence during workshop	Who they keep in touch with
P1	22	Italy	Italy	Sibling(s)

P2	30	Singapore	United States	Parent(s), sibling(s), friend(s)
P3	22	Colombia	Colombia	Romantic partner(s)
P4	35	United States	United States	Romantic partner(s)
P5	26	Scotland	Scotland	Romantic partner(s)
P6	Not shared	Singapore	Australia	Children, romantic partner(s)
P7	50	Austria	Australia	Sibling(s), stepchildren, extended family, friend(s)
P8	28	Sri Lanka	New Zealand	Parent(s), sibling(s), friend(s)
P9	31	Australia	Norway	Parent(s), sibling(s)
P10	37	Iran	Australia	Parent(s), sibling(s)

We sought a small cohort in order to foster a supportive environment where interpersonal connections could surface nuanced life stories and personal entanglements. We recognised the crucial importance of participant safety towards developing this trust, and created private channels for participants to discuss any discomfort or unhappiness, as well as 'lounge' channels where informal conversations unfolded among participants, such as those about their frustrations with living far away from loved ones.

3.2 Workshop Design

Our collaborative mapping workshop leveraged creative production as an instrument for eliciting narratives of everyday experiences (Bell, 2009). We were interested in surfacing on-the-ground narratives of lived experiences and practices, where all views interrelate and contribute constructively to our apprehensions (Connelly and Clandinin, 1986: 295; Foth et al., 2009). Researching with narrative data foregrounds a *view from everywhere* (Foth et al., 2007)—an understanding of place as a pluriverse, supporting many ways of being—and we were interested in preserving the inherent plurality of the data rather than extrapolating findings to the general.

Placemaking practices are highly sensitised to personal and cultural contexts, as signified by the idea of storying (Akram, 2023). Workshops, as participatory action research instruments that invite many people to sense-make together, can support non-researchers in applying such practices and intuitions of everyday life in a research space (Thoring et al., 2020). In addition to gathering reported data, workshops are also

spaces for witnessing and documenting practices in action, opening pathways for interrogating dominant research and professional practices (Ørngreen and Levinsen, 2017). By activating practice knowledge in this way, workshops remain sensitive to the situated knowledges that constitute participants' everyday expertise in their lived realities (Avison et al., 1999; Cox et al., 2021).

Situated in the above understandings, our workshop was designed as *a space for translocal placemaking to happen*: participants located in different continents could make a place together and at the same time share stories about other translocal placemaking encounters. Threading inquiry along their practices, we sought to capture both narrative accounts and situated tactics, surfacing knowledge that is heavily contextualised by the technology-mediated social space—for instance styles of humour that use visual images, or interactions that use spatial layouts.

Narrativity was framed with the practices of mapping, which are closely tied with narrative in that they are able to surface layered, subjective, and evolving perspectives of place (Turner and Taboada, 2020). By mapping layered narratives of translocal placemaking in a workshop, we sought to reveal its plurality without 'flattening' findings to a single disciplinary view.

Our workshop design was adapted from past participation action research workshops aimed at remote co-creation (Genereux and Satterfield, 2022; Gonsalves et al., 2021a). To adapt the workshop format to support remote collaboration, we conducted it over a longer period of 10 days, supported participation at flexible hours, and combined two persistent virtual spaces—a virtual whiteboard and a text-based Discord chatroom. By prioritising an extended, slow format, we sought to invoke ambient ways of cohabiting virtual spaces (Hardesty and Sheredos, 2019; Hjorth and Richardson, 2014; Madianou, 2016).

Throughout the workshop programme, the first author acted as the main facilitator. Participants were invited to join a Discord server created for the study and received access to the *(In)Finite Canvas*, a custom-built virtual whiteboard where the main workshop was conducted (Figure 8.1). Eight participants joined the server, while two opted to receive communications through email.

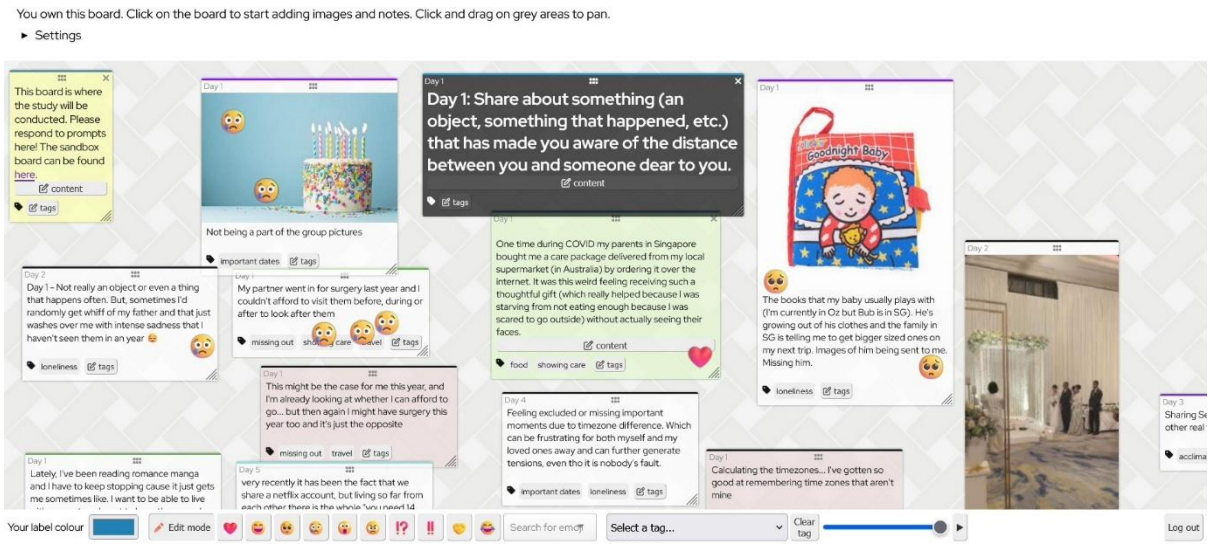

Figure 8.1: The (In)Finite Canvas interface.

Before the study, participants were informed of our objectives of playfully mapping their translocal relationship practices. Participants were told that they were not expected to participate more than once a day and could do so at any suitable time. Participants received video instructions on using the *(In)Finite Canvas* and were instructed to respond to all workshop tasks on the board. They were also prompted to let their thoughts and explorations meander from the prompts and to respond to others on the board if they wished to.

Over the course of the workshop, participants flexibly engaged with creative tasks on the *(In)Finite Canvas* and communicated with each other on the Discord server. The workshop programme was structured into three phases: (i) social mapping, (ii) social tagging, and (iii) focus group/interviews.

3.2.1 Social Mapping

The *social mapping* phase ran across the first seven days of the workshop. We designed this phase with inspiration from past work in social cartography (Klaebe et al., 2007; Mapes and Koopman, 2020)—a community-led process where cartographic instruments are appropriated in a participatory manner, allowing participant-mappers to surface and visualise on-the-ground knowledge about space and place (Moore and Garzón, 2010).

Unlike past work, our social cartography was not based on geographical maps, given the fluid, often incorporeal technology-mediated geographies of interest (Hine, 2000). Instead, the spatial relations in our mapping were constructed *ad hoc* as the study progressed.

The *(In)Finite Canvas*, an application developed by the first author for this study, acted as the space where participants answered creative prompts and communicated. Similar to virtual whiteboards deployed in past virtual creative workshops (Genereux

and Satterfield, 2022; Heng et al., 2022), the *Canvas* allowed participants to configure its surface co-operatively, in real-time, persistently across multiple sessions, and with a high level of personal expressivity and customisation. Participants could create 'cards' containing customisable text, images, background colours, and hypertext markup language (HTML), reposition any card on the board, and place emoji stickers to indicate quick reactions (Figure 8.2), similar to emoji reactions on platforms like Facebook (Tian et al., 2017).

Figure 8.2: Emoji reactions placed by participants.

To scaffold a reciprocal co-creativity that was sensitive to participants' exploration trajectories, the *(In)Finite Canvas* application was adapted as the study progressed, with new features added based on participants' interactions and interests. Conducting the study in a custom application allowed for such reflexive adaptation, among other features designed for this research (Table 8.2).

Table 8.2: (In)Finite Canvas features

Feature	**Rationale**
Persistent and synchronous board editing	Real-time collaboration (study design)
Customisable card background colours	Expressive, affective configuration (study design)
Global ability to reposition all cards; content editing restricted to owned cards only	Real-time collaboration; expressive, affective configuration (study design)
Rich HTML content embeds	Expressive, affective configuration (study design)
Tagging system	Study design

Access to application codebase and database	Reflexive adaptivity of platform (study design)
Animated Graphics Interchange Format (GIF) support	Responding to observations
Tag highlighting and renaming	Responding to observations
Card timestamps	Responding to observations

During this social mapping phase, participants were sent one creative prompt per day through both email and Discord, and asked to respond to the prompt on the *(In)Finite Canvas*. Drawing inspiration from the collaborative storytelling practices of story-making games (Turner and Taboada, 2021), the facilitator acted like a 'game master,' devising each prompt reflexively on the day it was posted, in response to the prior days' engagements and the general trajectory of interests. Such improvisatory adaptation was crucial for keeping the workshop activities sensitive to the dynamic, on-the-ground narrativity of the data.

The format of this social mapping phase was casual, flexible, and open-ended, inviting playful interchanges and promoting informality and humour. Giving participants the ability to heavily configure and position their responses and to shape the direction of the creative prompts, we aimed to seed transformative sense-making and storytelling by activating an exploratory and inventive attitude to knowledge creation.

3.2.2 Social Tagging

The narrativity of the mapping tools we used in the social mapping phase of research (Section 3.2.1) was complemented by the thematic sense-making of the second phase: the *social tagging* phase (Section 3.2.2). Here, facilitator and participants collaboratively tagged the anecdotes with themes that stood out to them. This was useful for directing the workshop's narrative outputs towards meaningful patterns of interpretation in 'a mutual researcher-participant reconstruction of meaning in action' (Connelly and Clandinin, 1986: 295). This collaborative sense-making process aimed to clarify relations and patterns among diverse experiences without simplifying or essentialising them.

The social tagging phase began on the fifth day of the study (overlapping with the social mapping phase) and ended on the ninth day. During this phase, the *(In)Finite Canvas*' tagging feature was activated to allow participants to tag themes and patterns. This phase invoked a social tagging ethos, that is, 'the practice of publicly labelling or categorizing resources in a shared, on-line environment' (Trant, 2009: 1). In social tagging frameworks, datasets are made accessible through collaborative categorisation

by many actors, developing communal systems of organisation that 'more accurately reflect the population's conceptual model of the information' (Quintarelli, 2005).

Inspired by folksonomies and participatory thematic analysis (Braun and Clarke, 2012: 58), our tagging phase invited participants to collaborate with the facilitator in organising the data based on what arose as pertinent to them. To sensitise coding to thematic framings from the literature, tagging began with a 'start list' of codes (Kalpokaite and Radivojevic, 2019) from an earlier stage of the research programme. Participants developed and reinvented the start list, leading to the generation of novel tags and themes. The communal framing of this phase complemented social mapping (Section 3.1.1) in surfacing bottom-up, dweller-led relationships with networks of information.

3.2.3 Focus Group Debrief

The third phase, the *focus group debrief*, began on the final day of the study. This asynchronous focus group was based on past work into developing focus groups for virtual research (Low et al., 2023; Turney and Pocknee, 2005; Vicsek, 2016), seeking to enrich analysis of the data with an understanding of participants' intentions and feelings (Gill et al., 2008).

Participants were gathered to discuss their feelings and clarify their intentions while engaging with the social mapping and tagging phases. For those who joined the Discord server, the discussion was conducted in a Discord text channel. Participants who did not do so were invited to answer the questions in an email interview.

3.3 Evaluation Methods

Evaluation of the workshop data included four data sources: (i) observational data recorded as field notes; (ii) narratives shared by participants in the form of text and visual data; (iii) the tangible configuration of the virtual board space; and (iv) text logs from the focus group debrief.

Analysis of the virtual board's configuration contextualised the participants' contributions within the space and time of the workshop (among other overlapping space-times), which contained 'insights about specific behaviours or aspects of the environment' (Thoring et al., 2020: 5041). Following Hine's (2000) note that virtual research should attend to platforms as both spaces and artefacts, we considered the evolving spatial configurations of the board in tandem with the material's thematic content. The configuration process, including the placement and movement of objects, was captured through field notes and time lapse recordings.

Our evaluation was based on an abductive mode of enquiry, aiming to follow the ad hoc, bottom-up meaning making processes that constitute placemaking (Arefi and Tayyebi,

2024). As our 'storying' lens reminds us, diverse, complex conditions produce an endless array of lived realities in translocal relationship contexts. Different relationships invoke different patterns of technology use based on communication cultures, needs, and resources; for instance, some families may favour phone calls while others play video games together.

We were thus less interested in inferring the general nature of translocal placemaking by applying established theory to observations (a deductive mode) or deriving generalisations from examining specific cases (an inductive mode). Attending to abduction, we aimed to let our data *lead us* towards new ways of thinking (Timmermans and Tavory, 2012), by foregrounding the tacit knowledge of non-researcher participants who are unconstrained by the linearity of conventional academic inquiry (Rust, 2004).

Thinking abductively, we enlisted geographical frameworks to analyse the board's layout (Section 5.2.2). We recognised that the 'messy' digital materiality (Pink et al., 2020: 13) of our data was not completely chaotic but resembled an urban geography, both in its origin (socially inhabited and developed over time to respond to diverse priorities), and in its emergent structure (consisting of nuclei and concentric clusters with interconnections between them). Thinking with the pattern languages of Alexander et al. (1977), we used urban space analogies to understand the board layout as a spatial meshwork of digital objects and conceptual 'tunnels' to other cyberplaces (such as participants' personal text message logs).

This spatial analysis complemented our thematic analysis of the narrative data. Following Braun and Clarke (2012), we approached social tagging as a participatory coding iteration, which was developed through researcher-led iterations of clustering to surface patterns and throughlines across the data. Altogether, a complete picture of the workshop outcomes was derived by intersecting and triangulating (Thoring et al., 2020: 5039) both spatial and thematic analyses.

4 Findings

This section outlines the data collection phases of the study and the important findings emerging from them. Participants were inducted over the course of a week, during which the facilitator created a 'sandbox' board where they could explore the *(In)Finite Canvas*' features in a relaxed environment and uncover technical bugs before the research began. Once all participants were inducted, the workshop commenced with the social mapping phase.

4.1 Phase 1: Social Mapping

At the start of each day of the social mapping phase, participants were issued a creative prompt and invited to respond by creating cards on the research board. At times,

participants responded to earlier prompts on later days of the study, 'catching up' on ones they had missed. Based on this observation, the number of prompts was reduced from the planned 10 to seven.

At the start of each day, the facilitator crafted a prompt ad hoc, based on sentiments expressed during prior activities. For example, after observing that participants focused on the cultural specifics of their sense of distance on Day 1, they crafted the Day 3 and 4 prompts to explore these subjects in more detail. This improvisatory prompt-making process attuned the mapping process to the participants' interests and energy level. The final list of prompts resolved through this process is shown in Table 8.3.

Table 8.3: The facilitator prompts for the social mapping phase.

Day	Prompt
1	Share about something (an object, something that happened, etc.) that has made you aware of the distance between you and someone dear to you.
2	What are some activities you do to feel closer, in sync, or like you're side-by-side?
3	Find the world map in the centre of the board. Choose an emoji sticker that no one else has placed on the map yet. Using that sticker, mark where you are on the map, and where the loved ones you keep in online contact with are! 🗺️
4	What social/cultural differences (or similarities) stand out between your distant loved ones' local region and your own? Do you do or share anything culturally specific in your interactions?
5	Share about a time when you felt limited or empowered by long-distance communication technology—where it seemed like the tech wasn't enough, or surprised you in what it was capable of.
6	Post a picture that captures something that's brought joy in your relationship(s) 😄
7	When you think about the future of your relationships that are currently online, what are the biggest emotions you feel?

Day 1's prompt aimed to ease participants into sharing about their experiences through a simple touchstone: an event or an object that made them notice distance. To contrast Day 1, Day 2's prompt then invited discussions of *closeness* and proximity.

Day 3's prompt, a geographical mapping exercise, emerged after participants volunteered geographically specific information to contextualise their experiences. Consequently, Day 4's prompt aimed to elicit specific details relating to Day 3's responses.

Day 5's prompt about technology was again based on the research objectives, but to maintain our participatory trajectory, the participants were polled for which framing they preferred: 'times you felt limited or empowered by the technology you have available' or 'unusual things you've done over the internet / that you never thought could be done over the internet'; they preferred the former.

Because responses to Day 5 had more negative sentiments and were text-focused, Day 6 asked for images that brought joy, engaging a nonverbal element and eliciting a positive sentiment. Finally, Day 7 was presented as a conclusion, allowing participants to reframe their experiences through a future-oriented view.

4.1.1 Board Geography

The 'geography' of the board at the end of the study is shown in Figure 8.4. At the start of the study, participants were free to answer prompts anywhere on the board. Nevertheless, cards were placed in a clear pattern, clustering near to where other cards had already been placed.

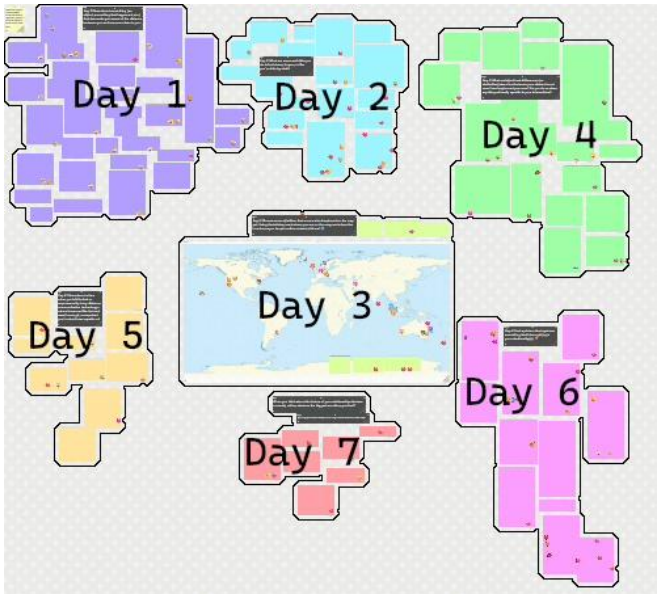

Figure 8.3: The geography of the final board, annotated to reveal the spatial layout of responses to each prompt.

It became evident on Day 2 that a clearer structure was necessary for correlating responses with the prompts they answered. The facilitator began creating black cards displaying each day's prompt in large font, beginning to scaffold the participants' use of the board space (Figure 8.5). This ad hoc facilitator-led adjustment was influenced by the participants' own spatial organisation decisions: because of the 'clumping' behaviour seen on Day 1, the facilitator began creating 'nuclei' with prompt cards for the responses to be clustered around.

Figure 8.4: A prompt card.

In total, 105 cards and were created, excluding prompts and instructions, and 93 stickers were placed. Every prompt except Day 7's was answered over a span of two to four days, attesting to the pattern that led to the number of prompts being reduced. Participants communicated using a combination of text, images, animated images, emoji stickers, and the positioning of their cards. Although HTML code was supported and mentioned in the induction information, it was not appreciably used by participants.

Plain text was the most common type of media created; all cards contained text. The image upload feature was also used in 20 cards to attach different types of material; P7 responded to Day 1's prompt with an image of a birthday cake to complement the caption, 'Not being a part of the group pictures,' while P8 used it to post a screen capture of a wedding they attended via a video call. In many such instances, participants used text and images to connect the mapping to other spaces, from video games and social platforms to memories of face-to-face encounters in physical localities.

We also observed that participants frequently rearranged cards (both each other's and the facilitator's) to make room for more responses. This became the subject of one 'debugging session' between P4 and the facilitator, when P4 found that certain cards could not be repositioned. Repositioning actions were occurring throughout until the end of the study.

Other than responding to prompts, participants were often seen responding to each other's cards. Participants often replied to each other's cards, usually by overlapping it with another card, creating staggered 'staircase' shapes. In other cases, participants used emoji stickers to 'react' to other participants' posts, expressing emotional responses without words. The range of emoji stickers was expanded to accommodate this form of expression. Both methods of responding were most often used to convey solidarity or highlight shared experiences, such as P4 relating to P3's experience of adjusting daily schedules to match their partner's, and P5 relating to P2's use of animal stickers in text messages (Figure 8.6).

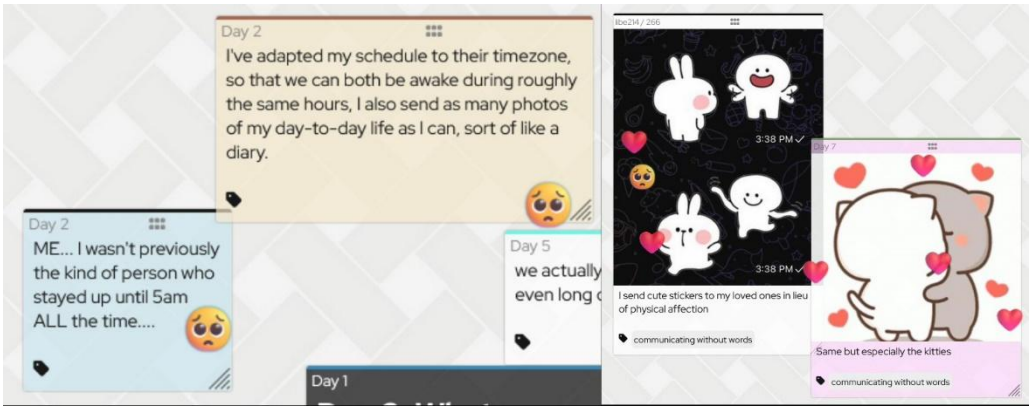

Figure 8.5: Two examples of replies indicated by overlapping cards and reactions signified by emoijs on cards.

While the initial project sought to map translocal placemaking without physical geography, we observed that participants often anchored their anecdotes to corporeal, geographical reference points. Addressing this, Day 3's creative prompt produced a visualisation of the geographical distribution of the participants and their loved ones (Figure 8.7). Reacting to the distances represented in this map, P4 noted that they felt 'emotional' while P3 celebrated that today's technologies made such relationships possible.

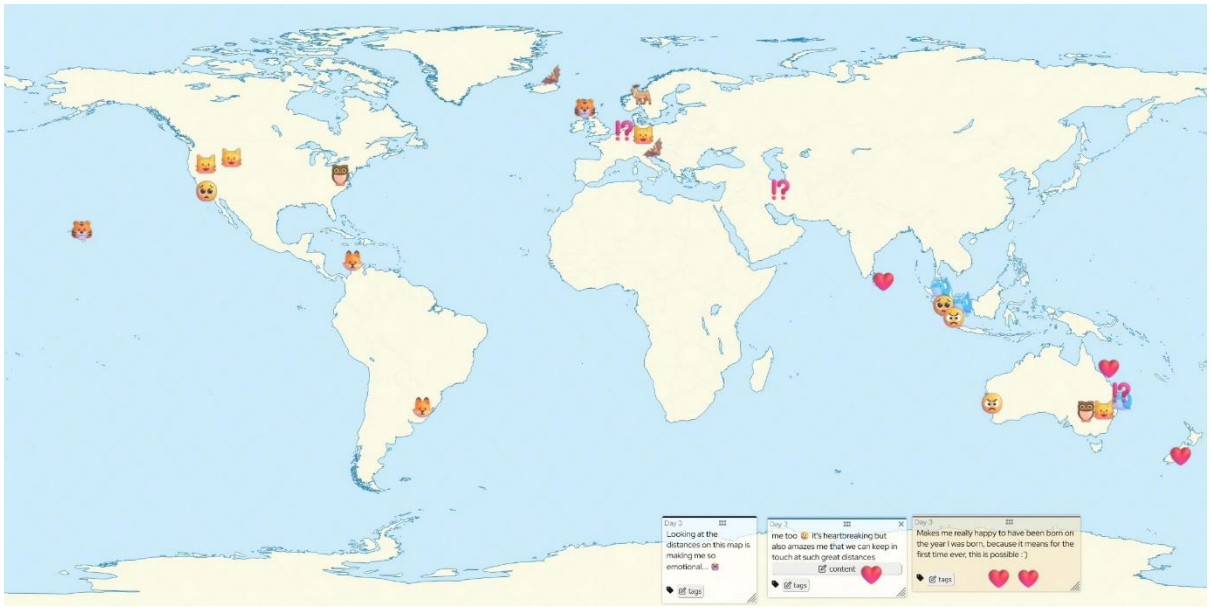

Figure 8.6: The Day 3 mapping task showing the locations of participants and their loved ones. Related locales are shown with the same emoji sticker.

Participant Stories

Across the responses to all prompts, participants documented diverse entanglements between corporeal and technology mediated experiences. Feelings of distance or frustration with technology were usually contrasted with a memory or conventional understanding of co-located intimacy. For instance, responding to Day 1's prompt, P5 shared a meme of a 'two-sentence horror story' ('I reached for my worm. no worm.') illustrating how an instinct for physical contact produced a jarring awareness of its

absence. Expressing a sense of ‘guilt’ and ‘missing out,’ P8 shared a screen capture of themself attending a wedding through Zoom, wherein their face was displayed in a separate frame from their friend’s.

Participants also often described geographical disjoints like the difficulty of navigating desynchronised time zones. These were perceived as not only pragmatic obstacles but also ambient and sensory markers of distance, highlighting experiential gaps in life-worlds:

> the conversations are happening during the pattern of their daily lives during the day but mine are always early in the morning to midday (P9)
>
> Calculating the timezones… I've gotten so good at remembering time zones that aren't mine (P4)
>
> I've adapted my schedule to their timezone, so that we can both be awake during roughly the same hours (P3)
>
> The daylight/lack thereof in video calls (P2)
>
> …always share the weather difference between Australia (QLD) and the Netherlands, […] the weather condition[s] make their own specific culture, like how we dress and how they do, the way of entertainment, and so many other things which are different and unique to our place (P6)
>
> They [family] call from outside often and the noises remind me of the serenity and nature I’m missing that is the opposite of my world now. (P9)

P2, living through the 2025 Los Angeles fires at the time, described how the fires had become a part of the placial fabric of their relationships, underscoring a temporally situated disjoint, felt through climatic changes, as well as their sense of precarity and displacement.

These experiential gaps do not only affect digitally mediated experiences but also extend to face-to-face encounters; P3 mentioned how, when their partner visited them, ‘we had to stay in a high altitude city’ because ‘the temperature is always around 30°C unless you're high up in a mountain.’

In many cases, participants highlighted the structural difficulties of meeting, conversation, and gift-giving, in contrast with the ease of doing so in person. Several participants concurred on the prohibitive costs of air travel and sending physical mail:

> The 16h flight I must take to see them (P2)
>
> 5 hour flight, plus another 14 🙃 (never mind the $1000+ round trip cost) (P4)
>
> Oh, I so hear you! My longest trip was about 50 hours until I was finally in my bed. (P7)

> I've forgotten how difficult it is to share physical creations with people who live far away. Shipping costs can easily reach hundreds of dollars for even the smallest of packages. (P3)
>
> Yeah, I also wish they were cheaper, then you could also ship yummy snacks :) (P7)
>
> The conspicuous difficulty of conducting activities that would be trivial in person through digital technologies—like watching shows together or having verbal conversations—was highlighted repeatedly, an experience that P4 described as 'hav[ing] a screen between us':
>
> How hard it is for us to even coordinate watching a TV show together when it's day in one country and night in the other. (P4)
>
> very recently it has been the fact that we share a netflix account, but living so far from each other there is the whole 'you need 14 days access key' deal with Netflix (P1)
>
> Whenever I have the energy and time to speak over the phone, is their night and sleeping time, and vice versa. (P6)
>
> Spent five hours on a WhatsApp call accompanying a loved one who was throwing up all night. (P2)

Amid these struggles, participants expressed solidarity for each other's anecdotes about the difficulties of meeting, the absence of tacit sensory aspects of togetherness, and the grief of missing life events (Figure 8.8). They did so through both text replies and emoji as quick non-verbal expressions of solidarity, resembling physical gestures in co-located interactions.

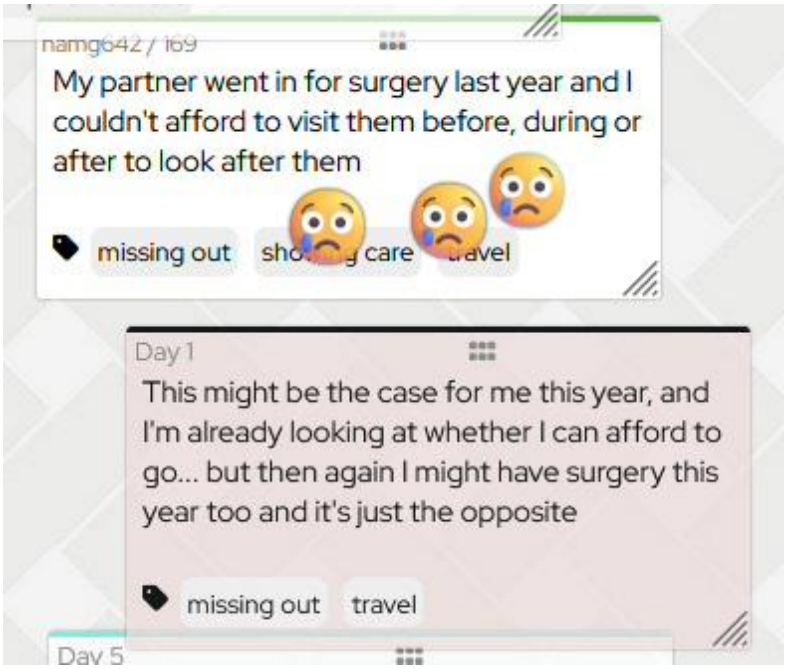

Figure 8.7: P4 responding to P5's anecdote, with several crying emoji stickers.

When discussing what they did to feel closer, participants frequently mentioned tactics of networked technology usage. Participants shared about how, beyond using technologies as communicative channels, they found new ways to scaffold a sense of shared living or joint action:

> we actually play ttrpgs together, like dnd, even long distance we can play through call (P1)

> We've spent so many virtual hours in MMOs together, running around doing things side by side, or just hanging in call while we each do our own stuff. Our first 'dates' were spent drinking bad, cheap alcohol and co-oping in the original Dark Souls - highly romantic 😂 (P4)

> We have this group chat where my parents and sister share everything from mundane to the extraordinary. … If my parents do or say something funny my sister sends me a message in the group that usually starts with :'Today your mommy/ daddy…' they're the best thing about the group chat. (P8)

Technology use was often described in ways that indicated viewing them as dwelling spaces, or windows between homes, rather than communication tools—such as with P4 and their partner 'hanging in call while we each do our own stuff' or P6 '[g]etting parents to show me whats Mum has cooked for the family.' In one case, P8 talked about how they would 'log into [parents'] CCTV system … and see if they've gotten up because usually my father switches off this one light outside the first thing when he wakes up.'

Highlighting the unique spatial logics of technology mediation, participants shared various ways in which long-distance communication intersected with their misaligned

geographical locations to create opportunities to be together or engage in playful practices that are less viable in co-located situations:

> I felt empowered by long distance technology when I called my boyfriend on long drives. Speaking through my car's sound system, it felt like he was right next to me although he was on the other side of the world. (P9)
>
> On weekends I call my parents as soon as they wake up because it'd be around 3PM for me and I'd be home instead of being at uni. (P8)
>
> Food is actually one of the main cultural aspect[s] that we exchange when interacting. Also, wildlife and grocery store 'discoveries'. Things that we all do in our daily lives, but there are still quite a lot of differences on how things work across different countries. (P7)
>
> I felt so useless but at the same time I probably wouldn't have been able to spend the same hours in person with them (P2)

These cases illustrate efforts to resituate a sense of continuity across the conspicuous disjoints described earlier in this section. Wherever tacit physical 'hanging out' was impossible, participants' tactics strove for ambient co-presence: staying apprised of mundane daily details like meals and waking times, quietly engaging with different activities in a shared video call, and more. Wherever time zones created gaps, participants enacted tactics creatively exploiting those misalignments.

The above anecdotes were materialised through participants' accounts of artefacts of closeness and relational anchorage, from physical belongings invested with affective meanings to photographs documenting times of togetherness, both face-to-face and virtual (Figure 8.9). Much like Tuan's (1979) observation that sense of place can be anchored in portable belongings, these artefacts attest to the relationship's continuing history and materially embody its 'placeness.' Translocal connection is identified not only by time apart, but also time together; these artefacts of closeness anchor affective memories of physical co-location in the present.

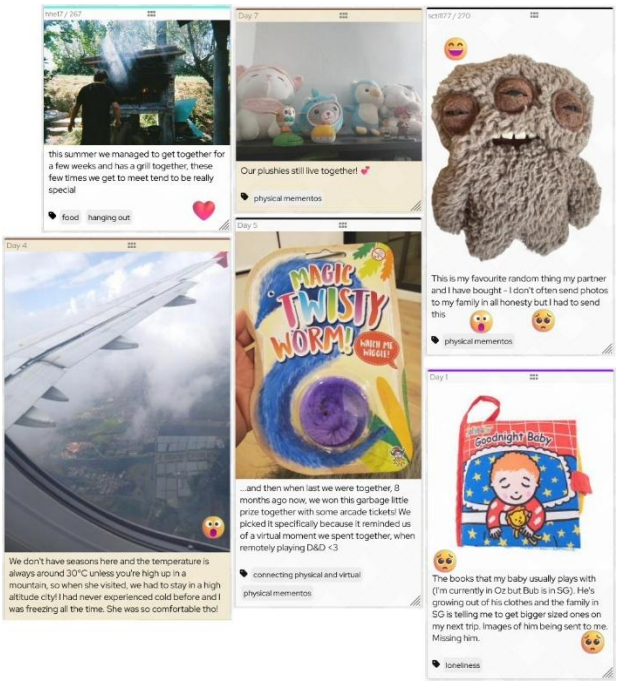

Figure 8.8: Some artefacts of closeness shared by participants.

4.2 Phase 2: Social Tagging

On the fifth day of the workshop, the tag feature was revealed, allowing participants to tag cards with shared themes. This phase was approached as a participatory coding phase, allowing the participants to surface their perceptions of important patterns in the data.

Coding began from a start list, and participants were prompted to extend this list with tags of their own. Five participants (P1, P3, P4, P5 and P8) participated in this tagging process, tagging cards 134 times along with the facilitator. These tags developed a vocabulary by which to understand and relate anecdotes, which a researcher-led clustering phase then surfaced. Table 8.4 shows the list of tags applied to cards and their thematic clusters.

Table 8.4: Tags used during the social tagging phase.

Tag	Origin	Occurrences	Clusters
voice / video calls	Start list	10	Technologies
games & play	Start list	7	Tactics, technologies, actions/activities
loneliness	Start list	7	Emotions, motivations
time zones	Start list	7	Times and dates, geographies
limitations of tech	Start list	6	Physical entanglements
hanging out	Start list	5	Actions/activities
important dates	Start list	5	Times and dates, content/subjects

life updates	Start list	5	Actions/activities, content/subjects
physical mementos	Start list	5	Technologies, tactics, physical entanglements
communicating without words	Start list	4	Tactics
physical mail	Start list	4	Technologies, physical entanglements
showing care	Start list	4	Motivations, actions/activities
devices as windows	Start list	3	Tactics, technologies
reinvention	Start list	2	Tactics, motivations
waiting	Start list	2	Actions/activities, emotions
collaboration	Start list	1	Tactics, actions/activities, motivations
connecting physical and virtual	Start list	1	Tactics, physical entanglements, motivations
devices as avatars	Start list	1	Tactics
livestreaming	Start list	1	Technologies
news & current affairs	Start list	1	Times and dates
text messaging	Start list	1	Technologies
food	Participants	10	Physical entanglements, geographies, content/subjects
travel	Participants	10	Geographies, actions/activities, content/subjects
Acclimation	Participants	7	Emotions, tactics, motivations
missing out	Participants	6	Emotions, motivations
culture	Participants	4	Geographies, content/subjects, physical entanglements
climate	Participants	3	Geographies, content/subjects
covid-19	Participants	2	Geographies, times and dates
wildlife & animals	Participants	2	Geographies, content/subjects
Anticipation	Participants	1	Emotions
fear	Participants	1	Emotions
fiction & stories	Participants	1	Tactics, actions/activities, content/subjects
Joy	Participants	1	Emotions
public transport	Participants	1	Geographies, content/subjects
daily routines	Participants	3	Actions/activities, times and dates, content/subjects

Of the participant-created tags, many referenced emotional experiences including joy, anticipation, loneliness, and fear. Others highlighted topics relating to geography

(climate, time zones, food, travel, public transport, culture, wildlife) and daily life (daily routines, life updates, food, public transport). These tags and patterns were drawn into the thematic analysis as a participatory coding phase (Section 4.4).

4.3 Phase 3: Focus Group Debrief

After the workshop, a focus group debrief clarified participants' intentions and sentiments, supporting interpretation and thematic analysis of the data. Five participants, P2, P3, P5, and P7 joined the focus group, while P8 responded to an email interview. Although it was organised as a discussion, all participants except for P8 only responded once to each prompt, sometimes responding to and developing earlier comments. This is in line with observations of past asynchronous focus groups: asynchronous formats tend to elicit less interactivity but lengthier and more thoughtful answers (Vicsek, 2016: 1234).

In this phase, participants reiterated a sense of connection and solidarity with other participants. P3 referred to a sense of 'kinship and understanding' and feeling 'connected to everyone else through the shared experiences,' while P8 described this as 'a feeling of belonging when everyone reacted to each other's posts and related to what others were saying.' Participants also expressed positive sentiments about the asynchronous workshop format, referring to it as 'a really good idea' (P7), stating that 'it really works for this kind of project' (P5), and that they 'enjoyed' it (P8).

Some highlighted idiosyncrasies of this asynchronous format: P2, P5 and P8 observed that it was easily incorporated into their daily schedule during periods of free time, regardless of where they were. P8 noted: 'I could do it in my own time plus the prompts came around the time I turned in every day.' Such engagements resemble ambient dwelling or play (Hardesty and Sheredos, 2019; Madianou, 2016) where the user is neither fully 'in' the usage scenario nor 'outside' it, but threads technology use through daily routines.

However, some technical limitations affected the 'ambient' usage of the *(In)Finite Canvas*. P2 mentioned difficulties with navigating the interface on a mobile device, while P7 noted that 'it was not always clear 'where' on the map the next day would be posted,' highlighting technical and navigational concerns have to be addressed for future deployments of such ambient research instruments.

4.4 Thematic Analysis

After the workshop concluded, the first author imported all data into NVivo for a follow-up phase of coding, extending the tag list as a set of codes, then clustering them. The following additional codes were generated during this follow-up phase (Table 8.5).

Table 8.5: Codes generated during the follow-up thematic analysis phase.

Codes
photographs
financial limitations
sensory details
hopes
technology augmentation

The clusters produced in this stage densely intersected each other, with most codes grouped under multiple clusters. For example, the *daily routines* theme was clustered under both *Tactics* (as it concerns how technology use is threaded through everyday life), and also *Times and dates* (as an instance of how time and schedules inform relationship activities).

Once complete, the final list of clusters was refined. We removed the *Content/subjects* cluster because it was too broad and combined the ambiguous *Emotions* and *Motivations*. These final clusters are shown in Table 8.6; a detailed list of all codes and their clusters can be found in Appendix 1.

Table 8.6: Coding clusters.

Cluster	Description
Activities	Translocal relationship maintenance practices
Media	Channels and materials that carry and mediate translocal relationality
Emotions and motivations	Internal/mental experiences that shape priorities and interests in translocal relationality
Tactics	Approaches to using and reinventing media and technologies
Physical entanglements	Physical objects and localities implicated in translocal relationality
Geographies	Cultural and geographical contexts that shape translocal relationality
Temporal entanglement	Ways that synchronisation, misalignment, and passage of time shape translocal relationality
-	-
Difficulties	Obstacles that are prominent in translocal relationality but negligible in co-located relationships

4.5 Interactive Work

The workshop findings revealed the dynamic, open-ended, and pluriversal diversity of the participants' individual relational contexts. The workshop data, which statically captured the experiences of our cohort of 10 participants, was thus an inherently incomplete picture of translocal placemaking.

Ann abductive approach entailed disrupting the staticity of our empirical data and interrogating its incompleteness. We re-presented all anecdotes and tags in the form of

an interactive map application. Participants were consulted on the presentation of this work. The resulting interactive map, made available online to the public, visualises the relations within the data and allows visitors to extend the web of relations by uploading their own responses to workshop prompts, or further tagging the existing data.

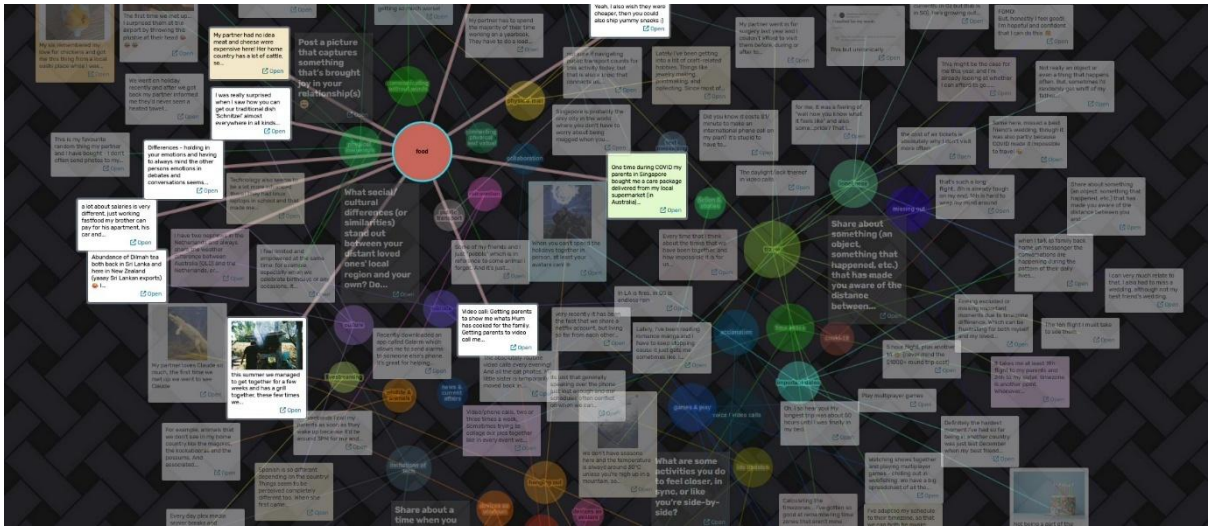

Figure 8.9: The interactive work emerging from the findings.

We were inspired by the visual descriptiveness of geographical maps, while subverting their two dimensionality by letting the data be dynamically rearranged. The anecdotes we received were replete with invisible thematic relations, like 'tunnels' connecting distant localities. We looked to underground city maps and subway network maps as examples of how such 'underground' connections are illustrated (*Figure 8.10*). Using three different 'views' that reorganise nodes around different types of connections (stories, tags, tag clusters), the application remaps the data's landscape, changing with every public contribution.

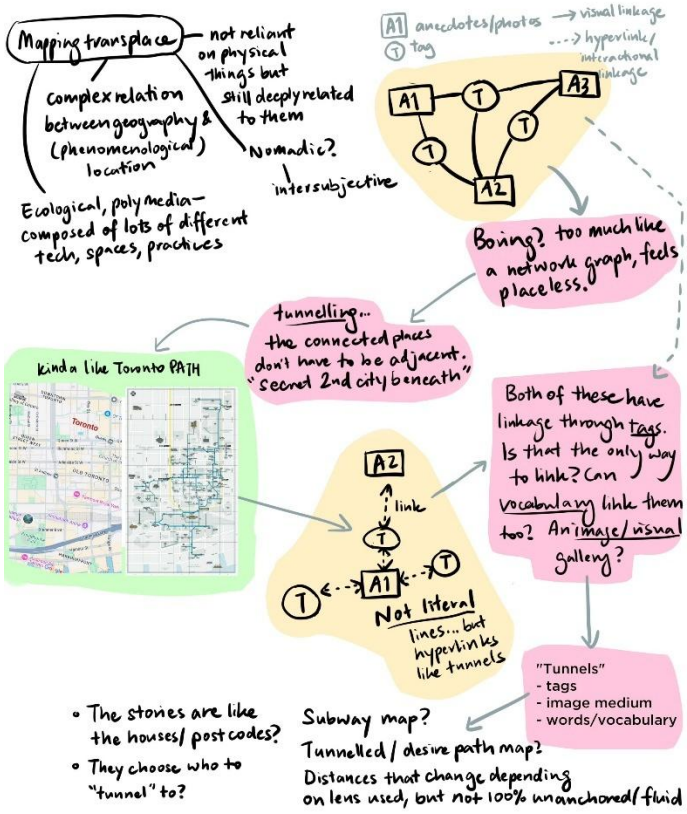

Figure 8.10: Ideation notes for Mapping Transplaces.

By supporting continual extensibility well beyond the span of the workshop, this application speculates on how interaction design can address the dynamic complexity of translocal relational spaces, which static data may not reveal.

5 Discussion

The goal of this research study was constructivist: to discover how translocal placemaking practices unfold in diverse relationship contexts. We undertook a collaborative mapping workshop study, gathering life narratives and thematically analysing them to answer our two research questions.

The first question was: *How do placemaking practices in translocal relationships adapt to and reflect their technological and affective contexts?* To answer this question, we enlisted collaborative mapping as a method for visualising the storying processes that produce places as sites of intersubjective meaning. This entailed a study that was narrative and abductive, led by the place dwellers and sensing their everyday practices. To achieve this, we approached the workshop as a reflexive instrument where participants could direct the path of inquiry. The workshop gathered and intersected narratives of translocal mediated relationship practices, and simultaneously elicited placemaking within the workshop space.

Analysis of the resulting data was guided by our second research question: *How can understanding these bottom-up practices help us rethink technology design for translocal placemaking?* In a participatory coding phase, participants and researchers coded patterns across the anecdotes through tagging, allowing them to highlight themes they perceived as important. Through both this participatory thematic analysis and the subsequent translation of the data into a public interactive work, we foregrounded non-designers' tacit knowledge and allowed our inquiry to depart from deductive disciplinary approaches.

Below, we discuss the study findings with respect to this question, including our main contribution to knowledge: an ontology of translocal place that extends beyond just digital spaces/practices and entangles physical and imagined fabrics interdependently. We propose to refer to this as *transplace*. We discuss the important insights found in the thematic analysis outcomes (Section 5.1), developing them towards a theory of transplace (Section 5.2) and exploring its implications for the way we think about the relation between technology and translocal relationships.

5.1 Disjoints and Acclimation

Of the participant-created tags from the social tagging phase (Table 4), we highlight the following: *acclimation*, *time zones*, *missing out*, *climate*, *food*, *physical mementos*, and *current affairs*.

Time zones and *climate*, clustered under *Geographies*, were frequently associated with accounts of experiential misalignment and efforts at realignment. There was an abundance of anecdotes about this geographically oriented sense of distance, felt most strongly by participants via differences in ambient details and daily routines bleeding into interactions: differing amounts of daylight during video calls, different seasons, misaligned daily schedules, and contrasting weather.

Climate and time are both markers of distance with significant sensory and experiential impacts, emphasising irresolvable gaps and disjoints in ambient relational life-worlds. We theorise that these markers of geographical difference are prominent because they *necessarily* cannot be erased by technology: when communicators interact across geographical distance, there is no way to elide time and climate differences as an experiential factor.

Consequently, efforts to establish translocal closeness often centre *acclimation* across these temporal and climatic differences. Acclimation tactics bridge a sense of continuity across—not in spite of—divergent localities. Some reinventive practices take climate and time misalignments into account, as seen with P8 checking in on their family in the early morning through their CCTV stream, and P3 and P4 adjusting their sleep schedules to bring their waking hours in closer alignment with their partners'.

Food and *physical mementos* were both clustered under 'Physical entanglements.' Like climate and time, these tags emphasise how translocal relationships are anchored in the physical world beyond virtual artefacts, experiencing cultural disjoints that cannot be erased by technology. They also correspond to tangible elements that make up mundane co-located co-presence, like meals and physical gestures.

Many anecdotes tagged under these two themes were accompanied by photographs taken by the participants (Figure 8.11). Far from rendering virtual connections less important, these physical artefacts are *entangled with* technology-mediated experiences. A few talked about sharing food and physical objects both via digital practices and when meeting face-to-face. P7 describes how, at birthday celebrations, their family would 'carry [them] around on their phone and pass [them] on the everyone, or put the phone somewhere, where [they] can see the birthday kid blowing the candles of the cake.' P6 concurrently associates their son with the book that he plays with and the photos they have received of him growing up in their absence.

Figure 8.11: Participants shared photographs relating to food memories and physical mementos they associated with their translocal relationships.

The participants' tactics in configuring the board also revealed how physical and technological layers are stitched together in practices of active entanglement. Participants engaged with the workshop while in bed or between their other tasks, concurrently sharing photographs of physical artefacts in their physical spaces and telling stories about the digital practices intertwining them.

As encapsulated by P4's worm-on-a-string which entangled online gameplay memories with situated ones, and P7's anecdote of exchanging grocery store discoveries which interlinked digital practices with local emplaced cultures, translocal practices weave mediated and corporeal experiences together into coherent, continuous relational fabrics—close at hand, enduringly present, and spanning continents at the same time.

In these and more cases, physical and virtual modalities of connection are not categorised separately, but form an interdependent continuity. Evidently, in translocal placemaking, technology-mediated practices, physical localities, imaginative practices, face-to-face experiences, and physical artefacts of closeness are continually being 'knitted' together, asserting a sense of reality that spans and reconciles all of the above.

5.2 Transplaces

The findings of our study assert a distinct translocal ontology of place which we propose to refer to as *transplace*. Transplace encapsulates the places and placemaking that emerge within the unique conditions of translocal contexts—most conspicuously the situating of relational life-worlds across diverse and fragmentary fabrics, composed of multiple layers of digital media, distant corporeal localities, and intermittent face-to-face encounters.

In each life-world, different combinations of personalities, priorities, and preferences produce different transplaces, each enlisting unique imaginative approaches to world-making (Choi, 2010; Lammes, 2008). Together, they signify a pluriverse of life-worlds, emerging in ways that are sensitive to diverse lived contexts. These are negotiated ad hoc amid different endemic resources and priorities, and they do not follow a schema, despite the tendency for past design work to assume so.

Transplace builds on earlier concepts like cyberplace (Wellman, 2001) and polymedia (Madianou, 2021) by encompassing not only computer-mediated practices but also their complex overlaps with corporeal locations, close and distant, and affective meaning-making processes. Transplace offers ways of rethinking how we design technologies for closeness at a distance; we explore them below through three design implications.

5.2.1 Transplacial Geographies: Physical and Mediated

The first implication of our findings is: Technology-mediated translocal practices and physical spaces/practices are inseparably intertwined.

Our study uncovered how familial and romantic relationships across distance engage combinations of co-routines, casual gestures, and communicative practices to enmesh networked technologies and physical spaces into relationship life-worlds.

Both workshop findings assert how physical and technological layers are not merely separate existential realms, but are actively being entangled with each other through practices that reach fluidly across disjoints and divides. These observations attest to how geographical realities (time zones, cultures, climate, living spaces, face-to-face encounters) are not made invisible or irrelevant but are inseparable from mediated translocal relationality.

Technological practices work, then, to make sense of and assert placial continuity across geographical disjoints and mediated togetherness in tandem. Those living in different time zones used temporal mismatches to accompany each other during busy hours; those living in distant cultures invented ways to share everyday elements of culture through the internet. Such reinventive tactics are also *acclimatory* tactics: they

exploit technological pathways that make a multilocal life-world 'make sense.' Designing with transplaces in mind means designing connective technologies that are not completely detached from the physical world, but can be adapted to mesh with diverse geographical contexts. This involves keeping in mind physical contexts of use, like how technologies interact with living spaces, time zones, portability and mobility.

5.2.2 Transplacial Spatial Configuration Tactics

The second implication of our findings is: Dwellers of transplaces cultivate a rich sense of place by imaginatively reinventing available technologies in affective, context-sensitive ways.

Because transplaces enmesh physical materialities and virtual spaces, 'transplace-making' differs from placemaking in physically emplaced communities. Our asynchronous workshop activated the participants' expertise in navigating such translocal forms of placemaking and being-together (Madianou, 2016). When inhabiting the *(In)Finite Canvas*, they reinvented its configurative capabilities for broader expressive functions than intended to bridge over the disjoints of asynchronous communication, for instance using overlaps to create meandering networks of replies across several days.

Thinking abductively, the final board output resembled an urban neighbourhood developed through slow, citizen-led mechanisms (Foth and Guaralda, 2017): incrementally curated by asynchronous dwellers to meet diverse priorities, with clear spatial patterns motivated by considerations of dwelling, navigation, and wayfinding. Many of its emergent structures resembled Alexander's (1977) urban patterns: prompt card 'landmarks' became 'nuclei,' which responses clustered concentrically around, and objects were placed near or overlapping related ones to show interconnections, sch that 'fingers' of related cards developed in visually connected structures.

This layout clarifies the outcome of many ad hoc social negotiations: communally conscious repositioning and reorganisation 'made room' for additions and bridged connections between different participants' contributions. The prompt cards played a top-down scaffolding role, structuring how the virtual space developed. By allowing even that structure to be altered by the participants, a geography was co-cultivated with room for everyone's participation. In this way, the workshop board transformed from an application interface into an accumulatively 'lived-in' structure incarnating many relational engagements.

The workshop board did not merely signify one single place, however. There was an evident array of 'tunnels' to many different places outside it—physical localities, personal virtual social spaces, and ongoing relationship practices—drawn into the workshop board through participant narratives. These outcomes reveal some of the granular processes by which transplaces are cultivated, stitching together multitudes of

spaces—physical, digital, imagined, hybrid, and more. Here, transplace reframes the designing of networked technologies beyond the paradigm of single, detached virtual platforms, towards designing them as parts of ecologies of diverse technologies, each with different access levels, textures, and tonalities. Designers may contemplate designing technologies with traits that support their usage in combination with other technologies and as a part of daily practices: interoperability between different devices, facilitating usage in between daily activities, and so on.

5.2.3 Transplace As an Ontology of Entanglements

The third implication of our findings is: Transplace, which characterises relationships through acclimation rather than erasure of disjoints, interrogates assumptions and dichotomies in the prevailing research.

For two decades, technologies have increasingly complicated how we experience place across distance. At the ground level, translocal relationship life-worlds inherently experience desynchronised time zones, different climates, divergences in personal practices according to distinct local cultures, and more.

Tactics of acclimation are what stitch transplaces together across such geographical divides and technological constraints. Practices such as persistent voice calls to create a sense of casual conversation, checking in with family members through CCTV footage, and playing tabletop games through voice calls and virtual boards were a few examples of acclimation at work. Importantly, acclimation is not the same as erasing distance or recreating physical proximity. It is a kind of mental *habituation,* in lieu of the taken-for-granted intimacies of co-location. It is signified by activities that link digital and physical layers into continuous practices (Section 5.2.1).

Thus, transplace puts question the tendency for design research to approach technology as a way to either imitate or replace physical intimacy, missing the richness produced when communicators creatively negotiate distance and gaps. While these design fabrications are, it is also useful for design researchers and practitioners to attend to the pluriversal realm of translocal relationship practices, considering how their design work functions in dialogues with existing relationship practices. There is rich potential for communicators to negotiate their own methods of addressing their relationship needs, sometimes in unexpected ways. Rather than designers imposing intimacy solutions, participatory design is crucial, welcoming users as co-producers of the form and function of designed artefacts.

Conclusion

This article presents an asynchronous collaborative mapping study where 10 participants with translocal familial or romantic relationships shared and intersected stories of maintaining shared places through networked technologies. By inviting

participants to engage in narrative and spatial storytelling, the workshop surfaced situated, relational knowledges that are often tacit and remain inaccessible through conventional methods such as interviews or surveys. Intersecting views from interaction design, geographical studies, and sociology, the analysis of findings revealed diverse practices by which places are cultivated in translocal relational contexts.

Through analyses of the data, we intersected polymedia (Madianou, 2021) and Hardesty and Sheredos' (2019) virtual worldly ontology through the new framework of *transplace*, which understands translocal places as meshworks of physical, cyber-, and mental spaces. Transplaces are produced when dwellers acclimate coherent life-worlds across geographical gaps and ecologies of technologies in situated, context-sensitive ways. To consolidate our idea of transplace, we presented three design implications:

(i) Technology-mediated translocal practices and physical spaces/practices are inseparably intertwined;
(ii) Dwellers of transplaces cultivate a rich sense of place by reinventing available technologies in affective, context-sensitive ways; and
(iii) Translocal placemaking is mapped in acclimation across temporal and geographical gaps rather than the erasure of them.

Contrasting the trend of design research which creates remote intimacy solutions that approach technologies as isolated spaces and ignore local specificities, these implications provide pathways to rethinking how interaction design becomes part of the ecologic practices of translocal relationships.

There are some limitations to the study. As we only conducted one iteration of this study with 10 participants, it is likely that not all pertinent experiences and themes were surfaced. As our data is inherently incomplete, we have made the study data extensible by the public, with consent, through an interactive map designed with participant input. Other participatory work may extend these findings by engaging a broader range of perspectives. In terms of study design, participants noted the difficulty of using the *(In)Finite Canvas* on mobile devices, highlighting the need to support participation through mobile devices to best leverage ambient and flexible modes of engagement (Hjorth and Richardson, 2014).

Through its engagement with situated narratives, our collaborative workshop study captured space and place as meshworks of lived experiences and intersubjective storying practices. Altogether, transplace asserts that research into translocal relationships and technology-mediated placemaking must increasingly respect the physical and geographical entanglements implicated in technological practices and vice versa, rather than approaching technology as a way to repair, resolve, or erase geographical disjoints.

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8.3 POSTSCRIPT

As noted in the above publication, I sought to illustrate the dynamic spatiality of the workshop results by translating the anecdotes and tags into “Mapping Transplaces”: a feral map that can be accessed and altered publicly. The mutability of this map is crucial towards disrupting the staticity of the workshop data and interrogating its inherent incompleteness. “Mapping Transplaces” incorporates the participants’ preference that the original wording of their stories be preserved in the name of authenticity. It visualises the rhizomatic space of places revealed over the course of the workshop, taking visual direction from Beautiful Trouble (Beautiful Trouble, Inc, 2024) in presenting interactive clusters of related tags: Difficulties, Activities, Media, Tactics, and so on.

“Mapping Transplaces” has been made available to the public at https://place.circlejourney.net, along with the design work for all the earlier phases of the research. Addressing the “feral mapping” sensibility of the workshop outcomes with the participatory capabilities of the web, this map can be reshaped by visitors through the addition of more stories and rearrangement of nodes.

Inspired by the workshop study’s outcomes, I have also created an informal interactive work called the *GeoGuestbook* where visitors can create persistent messages to loved ones living far away (Figure 8.12).

Figure 8.12

The GeoGuestbook Interface with User-Created Messages

The decision to publish all of this thesis project's design work to the web, altogether, aims to speak to the project's ethos of communal co-creation, co-production, and produsage that has gradually emerged across its phases. By making these applications available to future users, it aims to share the knowledge learned about uplifting users as codesigners of design experiences towards "placeful" interactive applications and platforms.

Chapter 9: Transplaces—Discussing the Key Finding

The foremost revelation surfaced by this thesis project was the need for new theory and language for addressing translocal placemaking and relationship practices. These ideas live at the intersection of multidisciplinary views: subjectivist understandings of space/place and its making, ontologies of virtual and imagined realities, sociological perspectives on mediated relationship practices, and others. A theory of translocal placemaking had to intersect all of these views and contemplate the foundational role of design (both designer-led and user-led) in negotiating across these disciplines and shaping the real, lived experiences of translocal placemakers.

The five studies of this project had incrementally revealed the unique ontological condition of translocal mediated places, which live across media that are fundamentally designed and alterable. They enmesh and layer many types of spaces, not just digital but also physical and mental, and not just single isolated experiences but intersubjective worlds connected across social networks. In these contexts, even ideas of closeness, dwelling, and simultaneity are consolidated in different ways from how we conventionally understand them.

Beginning with the two studies of the Design phase, I began to address the above opening by developing the idea of **transplace**. Transplace emerged from, and owes much to, Hardesty and Sheredos' (2019) virtual worldly ontology and Madianou's (2021) theory of polymedia life. What transplace does is extend the ontology of virtual worlds in translocal cultural directions by contemplating it as a key quality of polymedia practices. This chapter outlines the idea of transplace in full, as well as the key role of vernacular reinvention in rehabituating a sense of ambient togetherness within the limiting "play rules" of translocal mediated lifeworlds.

9.1 ARRIVING AT TRANSPLACES

The idea of transplace was seeded in the first and second publications (Chapters 3 and 5) where the concepts of *co-construction* and *dialogues of alterations* were devised to characterise the findings. The idea of "co-construction" arose in Publication 1 from recurring observations of locative game players cooperatively building complex in-game formations ad hoc—that is, "accumulative and collaborative physical inscription in public space, whether through explicit co-constructive negotiations between players or through the accretion of efforts" (Chapter 4).

During the observation of *Terraria* players in Publication 2, co-construction emerged again as a theme. Through the analysis of the findings, my prior idea of co-construction was developed into a more granular concept of *dialogues of alterations*—cooperative creative activities scaffolded by tacit dialogue and implicit cue-taking, made possible by the configurability of internet-mediated spaces and their low barrier to entry (of which *Terraria* is one instance). These dialogues of alterations are motivated by a sense of place: they clarify orientation, identity, and affective relationships with spaces, and are driven by the place dwellers' intimate familiarity with those place-attachments.

This idea of ad hoc co-constructive engagements was incrementally developed across Publications 3 through 5 into knowledge with pragmatic applicability in professional and communal contexts, first through a qualitative survey (Chapter 6) then through iterations of participatory design work (Chapter 7 and 8). Across these three studies, what was revealed were not mere isolated *acts* of impromptu co-construction, but *cultures* of vernacular reinvention of community-transmitted practices and knowledge. Dwellers playfully translated mediating realities—often disjointed and constrained by pervasive limitations—into fertile ground for placemaking. Such vernacular reinvention cultures strive to reconcile a sense of place and continuity across the complex constellations of mediating physical, virtual, and imagined spaces.

Importantly, the results of Publications 3 through 5 made clear that these translocal places are not *enclosed within* virtual spaces, nor determined by how any single technology is designed. Rather, dwellers inhabit these technologies complementarily as ecologies of spaces and practices—digital, imagined, *and* physical. Individual digital practices are enmeshed within these social formations which together construct the kind of place I refer to when I say "translocal place". Such places, like Tuan's (1979, p. 417) fields of care, are woven from networks of relationships, can have fuzzy boundaries, and do not project a

conspicuous form to outside viewers. They can also be seen as extending Madianou's (2021) notion of polymedia life via Ingold's (2013) meshwork view of place and movement.

There was a need for new vocabulary to refer to such translocal places—honouring not only the reinventive polymedia usage of mediating ICTs, but also the fact that they are not *just* digital but include geographical contours, physical transmissions and encounters, and mental places constructed through active imagination, in postphenomenological fashion. "Translocal place" became "transplace", better emphasising how these places transcend single territories, media, physical locations, and networks.

9.2 DEFINING TRANSPLACES

Transplaces are the places that emerge when people reinvent the available resources in pursuit of a sense of being-together across distant localities. The term "transplace" honours the fact that such mediated translocal geographies are both places *in fact*—as considered through a relational ontology (Halstead, 2021; Tuan, 1979)—and places *in symbol*, being identified as such by inhabitants. They also exist beyond and between what we traditionally understand as places ("trans-" as in "translocal").

Transplace-making is navigated by different sets of cohabitants amid potentially infinite permutations of relationship practices and priorities: because every relationship entails different needs and material conditions, a pluriverse of transplaces emerges, embodying "many ways of being in the world, many ways of knowing reality" (Querejazu, 2016, p. 3).

The geographical parallelism between transplaces and physical places follows a rich tradition of scholarship detailing placeness in virtual space (Adams, 1997; Álvarez & Duarte, 2018; Ash & Gallacher, 2011; Dourish, 2006b) and interconnected internet spaces as ecologies (Hearn & Foth, 2007; Madianou & Miller, 2013). Following Tuan (1979), places (particularly fields of care) are identified by networks of subjective associations anchored in space through slow dwelling and habit formation. This description is also apt for transplaces.

However, place as understood above usually implies anchorage in a physical medium, and transplaces differ from conventional places in this crucial way: they are not coextensive with physical space, nor mapped one-to-one with it. Transplaces do not have static, measurable forms; they are consolidated by an understanding that they phenomenally exist. One's sense of location in a transplace is not always mapped in three-dimensional positioning, movement, and orientation. Individuals may easily exist in several different

locations or layers of a transplace at once, transiting rapidly and ambiguously between them (Hardesty & Sheredos, 2019). Transplaces are kaleidoscopically diverse, signifying a plurality of ways of being, and they can be as irresolvably different from each other as the communities and practices that create them.

This idea of transplace diverges from many common trajectories of design research into mediated connection (Hassenzahl et al., 2012; Li, 2019; Mueller et al., 2005). It considers ecologies of physical, virtual, mental, and imagined places as interdependent parts of transplace, rather than viewing internet technologies as mere bridges between physical dwellings or considering individual virtual placemaking practices in isolation. The practices by which transplaces are cultivated may be as diverse as: strangers collaborating to build replicas of real-world cities in *Minecraft*; long-distance partners roleplaying imagined narratives by jury-rigging text chatrooms, voice calls, and interactive gameboards; parents and children cooking together over Zoom; and permutations of all of the above and more. These examples illustrate both the diversity of practices that may be enlisted in the course of building transplaces as well as what unites them: that they answer a need for mediated co-presence and relationship deepening when physical co-location is not possible. Thus, while beginning from a physical space analogy, these fluid and incongruous relational geographies are the kinds of places that are difficult to map conventionally.

9.3 HOW TO RESEARCH TRANSPLACES

Transplaces are a kind of geography emerging upon the terrain of translocal connection, each completely different from the rest, even in terms of how and why they are established. They are not a pale replica of real-world geography, and to understand them, they need to be met on their own terms, with their own vocabulary.

An earlier version of the thesis' research plan had described "a playful 're-locative' creative work for translocal young adults", envisioning a social cartography following Sinker et al. (2013). But there are challenges with mapping online translocal relationships in the conventional sense. A traditional cartography—even with a participatory ethos—would involve "flattening" a dynamic phenomenon that did not translate directly to fixed points in any space, physical or otherwise. A static reporting format was a plane projection, imposing a hegemonic lens upon the placial subject and losing interpretative plurality in translation. Domesticating the richness of transplacial practices into a static, communicable format would thus, by its very nature, fail to capture the terrain.

Such plurality poses a problem to traditional methods of research, which early researchers of virtual worlds already recognised well (Boellstorff et al., 2012; Hine, 2000). Translocal placemaking is a habituated tactic of connection, often known through doing—a kind of practice knowledge (Section 2.2.2). Any research that approaches it must also be sensitive to such everyday knowledges, which are situated in lived realities, and thereby inherently emplaced and inseparable from the ground-level contexts of everyday life (Graham, 2009; Haraway, 1988).

As has been noted in past research, traditional instruments of inquiry are often unsuitable for exploring phenomena that are themselves plural, interpretative, and irremovable from context (Candy, 2006): they may reveal the lay of the land, but cannot capture the experience of being there. To reflect on such interpretative truths, Bell (2009) proposes creative production as a research instrument, which "enable[s] the exploration of facets of the narrative that [are] impossible to explore through research based solely on documentary evidence" (p. 259). Each creative output relating to a theme or phenomenon is a window into a house of many rooms, or so to speak, each one becoming "the enactment of different realities" (Berridge, 2008, p. 3).

There is an array of methodologies engaging creative production in one form or another, from exploratory design-research methods like cultural probes which leverage creative modes of engagement (B. Gaver et al., 1999), to the investigation of creative practice itself as the framework in practice-led research (Candy, 2006). The plurality of transplacial experience pointed towards creative practice as a kaleidoscopic lens of inquiry: a lens that can reveal a multiplicity of views on the subject, to suit this project's interpretivist and transdisciplinary aims (Carpentier, 2016). Rather than imposing a discrete research objective on the participants as we did in the survey, creative practice would allow participants to choose their own lens and enact their vernacular expertise in creating and navigating transplaces, remaining open to what emerged and adapting the research accordingly.

9.4 FROM DOCUMENTS TO ANTHOLOGIES

Beyond practice-based methods, *co-creation*—or creative production as a communal practice—can be a useful way of elucidating the multitudinous, pluriversal subject of transplaces. Co-creative methods live under the umbrella of participatory action research (Fenge et al., 2011; Giannachi et al., 2020; Hearn et al., 2009), a family of methods that aim to decentralise knowledge construction away from the institutional researcher and towards the participants, to access their expertise in their lived experiences (Carpentier, 2016).

Under the paradigm of participatory research (Reason, 1998), the research process is alive and in dialogue with the community—approaching the participants as fellow researchers leveraging their tacit knowledge rather than as specimens to be studied.

Within a co-creative framework, the researcher occupies the role of a guide or curator. By gathering a multiplicity of voices and practices under a shared work, gestalt narratives emerge with the potential to subvert or expand ways of thinking about pluriversal subjects. This approach to curated co-creation has been explored by past projects where it has been a frame for exploring diverse marginalised perspectives (Fenge et al., 2011; Gonsalves et al., 2023; Tsing et al., 2020) and radical speculative futures (Sheikh et al., 2023). Such anthologies need not take the form of traditional gallery experiences, as exemplified by *TransHuman Saunter* (Gonsalves et al., 2023) and *Feral Atlas* (Tsing et al., 2020): the inputs of many participants can be digitally interspersed across space and time, and interact with spatiality and temporality in surprising ways.

However, co-creation is a vast umbrella under which a diverse range of practices congregate. To structure *this* thesis' approach to co-creation, I looked again to the idea of *mapping* as a way to apprehend and communicate places, considering how cartographic traditions are deeply tied with creative production and offer semiotics for communicating place (Section 2.6).

9.5 MAPPING TRANSPLACES

To map transplaces, then—given the above understanding of them—would require disruption of many of the base assumptions of geographical mapping. To do so, one might look to conceptual definitions of mapping (Section 2.6.1) to represent places that do not have visible, fully corporeal existences and exist as much in relational concepts as in tangible configurations.

De Certeau (1988) describes how looking at a city from above offers the viewer a totalising—literally top-down—understanding of place. From that position, the viewer perceives urban space as a strategic abstraction and cannot surface the phenomenon of traversing its streets. Historical maps—particularly in the Western European tradition—present such reductive top-down perspectives of space and place: they essentialise ecology, vegetation, and transient layers into colonialist, capitalist, and otherwise politically motivated schematics (Abrams & Hall, 2006; Sletto, 2020). They encapsulate a "view from nowhere", one only interested in decontextualised, universal ideals of geography (Foth et al., 2007). An enduring quest of geographical scientists is to map the ocean floor, the last

unmapped place on Earth (Wölfl et al., 2019), which merely lays the ground for the eventual exploitation of that terrain as another territory or resource (Bedford et al., 2022).

However, transplaces are incongruous, hidden, and chameleonic, all of which the traditional map is ill-fitted to capture. All transplaces are not made equal. This is a postphenomenological view: technologies encounter bodies in different ways across a plurality of contexts (Richardson & Wilken, 2012). Technological access differs globally along vectors of structural inequality, and the transplacial tactics of those in the Global South can be a world away from those of dwellers in the Global North (Nassanga et al., 2013; J. Turner, 2015). Some communicators enjoy meeting and bonding in video games, while others, most often older adults, find them prohibitively difficult to use and inhospitable to closeness. Encountered and shared ad hoc and in secret, like de Certeau's (1988) ghost stories, transplaces defy totalisation, and are inherently not knowable to the panoptic surveillance instruments of the Capitalocene.

So, "How do we map transplaces?" is a trick question: to "represent" transplaces, we must presume that there is a totality that *can* be represented and fall into the trap of recreating the hegemonic lens. Instead, mapping transplaces is mapping the view from the street. If these places are alive and hold agency, then it is a matter of how we *give their dwellers voice* so that they may speak their own stories. Such a mapping must be dynamic, evolving, and critical of the power relations embedded in traditional schemata of mapping (Choi et al., 2024).

In other words, the question requires us to reconstruct understandings of how space and place can be communicated. How to map to foreground interpretative plurality has been a driving question in radical cartographic schools of thought (Abrams & Hall, 2006). Researchers in the field have advanced mapping traditions that implode assumptions of what a map is. They are no longer just flat, readable documents devised from precise mathematical projections and surveying, along cartographic conventions proliferated by colonial and extractive understandings of terrain (Sletto, 2020). These "new cartographic" movements aim to release maps from the idioms of political control, to reveal a view from everywhere beyond the politically and economically motivated lens of top-down governance (Sletto, 2020).

One example explored in the context review (Section 2.6.3), *Feral Atlas*, illustrates the use of internet-based technologies for antihegemonic ways of mapping. In the instance of the *Feral Atlas*, one sees a way of mapping that considers material, relational, and narrative dimensions as foundational aspects of reckoning place. Likewise, being in virtual worlds

underscores the relationality of place: by the fact of our dwelling there together, there is place, and it need not be justified in any other way (Hardesty & Sheredos, 2019). Just as that dwelling is messy, contradictory, and pluralistic, so are the transplaces that form through that dwelling—incomprehensible to the computations of the top-down observer and comprehended only by the inhabitants who experience them from within.

But many of these mappings will not borrow form and method from conventional cartography at all. Already, the view from the streets is constructed from ground-level, tactical making practices that embody bottom-up ways of seeing, which may often be tacit, enacted without strategic intentions of mapping. These tactics can be valuable to transplace as well. Following past work in amateur photography and photo-sharing (Pink, 2011; Hjorth & Pink, 2014), everyday visualisation practices can be rethought beyond just the kinds of image-making that tell stories about physical space. As highlighted by how participants in my workshop study collaged images of both corporeal and digital locations to signify the gestalt of their relational experiences, it can assert the indelible links between layered physical, digital, and imagined realities and subjective experiences, too.

In essence, mapping transplaces must entail honouring the view from everywhere without exposing these places to public voyeurism in the way that ocean maps expose the sea floor to mining. It is imperative to begin from empowering transplace-makers to share and enact their lived knowledge on their own terms rather than those of disciplinary research. Therein, one could perhaps jury-rig an authentic—but never *complete* nor *totalising*—picture of the manifold secret worlds of translocal placemakers.

9.6 DESIGNING WITH CULTURES OF TRANSPLACIAL REINVENTION

Transplace presents clear implications for the relationship between interaction design and translocal placemaking. In transplaces, technologies are both the instruments and the spaces where placemaking occurs. Consequently, technology design plays a material role in determining the fundamental structure of the lifeworlds anchored in them, and what relational interactions are possible through them. While not universal, many transplaces negotiate what has been termed "platform capitalism" (Srnicek, 2017): the corporatisation of social internet platforms into products serving the interests of profit. Often designed on axioms of standardisation and optimisation to support capitalist interests (Avram et al., 2019), such software eliminates variation and texture from their mediated spaces. Much like the replicable standardisation of house designs in physical

suburbs (Sabie et al., 2020), this obstructs the processes of placemaking—the embedding of memory, culture, and identity into spaces through reconfiguration

As such, transplaces must provide what many such platforms do not: textured and varied geographies that sustain plural, dynamic material conditions and affective priorities. Towards achieving this, transplacial dwellers enact a plethora of transformative playful tactics, reappropriating and reinventing technologies in infinite variations towards a rich sense of being-together. The creation and assertion of transplaces becomes a kind of resistance, invoking tactical reinventions of technology use (Beautiful Trouble, n.d.) that transform them to achieve what they are often not designed for: a sense of being together.

Such reinventive tactics signify a kind of democratic, user-led design-after-design (Ehn, 2008; Redström, 2008) where users participate in redefining technologies through appropriative usage, extending them beyond the original design intent. In the case of transplaces, design-after-design is enacted as intersubjective dialogues of alterations among dwellers which are open and sensitive to their diverse and evolving conditions.

In Chapter 6, I referred to these as virtual cultures of vernacular reinvention. To facilitate discussion of the interdependent relationship between vernacular reinvention and transplace-making, I revise this terminology into **cultures of transplacial reinvention** (since transplace already implies a vernacular quality). People are already enacting this in tacit, habitual, and communally developed ways. This is what is meant by a *culture* of reinvention: it is similar to *jugaad* and *gambiarra* in the way that it is realised differently in different geographical contexts.

If transplaces are quilts, then transplacial reinvention is the stitching that affirms connections across the spatial fabrics comprising them—physical, virtual, imagined, and more. Transplacial reinvention acclimates ambient togetherness and relational continuity across variegated mediating spaces and technologies, many of which constrain transmissions into bytes, parcels, or written pages. Transplacial reinvention is, in a sense, how transplace dwellers play with the game rules of translocal connection, their tactics attuned at all times to the varied affective goals of remote intimacy.

Designing *for* transplaces then means designing for cultures of transplacial reinvention. Because transplaces are as diverse as their inhabitants, it is not possible for top-down design to solve for every possible use of a technology within a transplacial ecology. Instead, designing for transplacial reinvention means designing more *openly* and *attentively*. Past research has already discussed how thinking with produsage and design-after-design reshapes how we conceptualise the agency of users in the design process

(Redström, 2008), suggesting design practices that invite democratic co-determination of use by designers and users together.

Designing for transplace asks for the same: allowing everyday practices of dwelling to radically transform the forms and functions of technology beyond design intent. In addition to the above, this thesis proposes another dimension to designing for transplace: an ethics of attunement (Chapter 7) that looks to dwellers as experts in enmeshing technology use with their diverse relational conditions, and their context-sensitive patterns of usage as the materialisation of pluriversal ways of being. Much like Brand's (1995) idea of buildings that learn, designing technologies for transplace means designing *technologies that learn*. Design for transplace is guided by an openness to, and respect for, the insolvability of its endeavour.

Chapter 10: Conclusions

This research project began from a curiosity about the technology-mediated practices being undertaken to create a sense of shared place in translocal relationships, as well as how to design in was that are more sensitive and welcoming to those practices. Being structured by a practice-based methodology, the research plan scaffolded room for the emergent outcomes of each phase to determine the direction of subsequent phases (Section 3.4). The result has been a path of inquiry whose meandering is an important vector of its knowledge production.

By intersecting data from academic inquiry and practice-based co-creation, this project has produced both empirical and practice-based contributions to knowledge. Empirically, it advances research about technology-mediated placemaking in translocal relationships under the idea of **transplaces**. In terms of practice, it develops interaction codesign approaches that are open to situated, context-sensitive **cultures of transplacial reinvention**.

This final chapter summarises the project's process, findings, and contributions to knowledge. It then resituates the research project within the lived realities outlined in the Introduction (Chapter 1) and ends with some concluding remarks.

10.1 A MAP OF THE PATH OF INQUIRY

At its core, this research project sought to explore sense of place in relationships that are maintained across distant localities, and the role of technology in scaffolding a mediated sense of place in those translocal contexts. This research interest stemmed from my personal experiences of separation, grief, and virtually mediated connection during the COVID-19 pandemic and therefore this thesis began by positioning itself within this personal and temporal context (Chapter 1). Through the Literature and Context Review (Chapters 2 and 4), this thesis document grounded the research interest in the extant academic knowledge *and* creative works on the relevant subjects of space/place, translocality, technology, mediation, mapping, and play.

To address the research interest identified by the Context Review, the project then laid out two research questions, to be addressed with a two-part research plan (Chapter 3): to find out how families and partners living far apart establish a technology-mediated sense of place in their relationships (Preparatory phase) and to reimagine interaction design that could better support placemaking in translocal relationships (Design phase).

Working within a constructivist epistemology, the project adopted a practice-based methodology to structure the work, bringing the action knowledge of both the researcher and users to bear through various methods from design practice. The practice-based methodology sought to centre the everyday knowing-in-action possessed by those who engage in transplace-making. Following a relational view of place, I looked at the data not as material to be aggregated but as narratives embodying subjective perspectives, every instance or datum being useful and important knowledge enriching apprehensions of the whole. To address the research subject of translocal placemaking, I combined the frameworks and ontologies of place from two broad disciplinary perspectives: sociological and technological. I drew together theories of translocality, transnational co-presence, and virtual placemaking, approaching networked technologies not only as tools but as spaces, and exploring not only how they are *used* but also how they are *inhabited*.

The two phases of the data-collection plan were then undertaken, consisting of four studies resulting in four publications that incrementally connected the diverse disciplinary and practitioner views with communal lived contexts. It began first by forming theory (Publication 2, Chapter 5) then investigating current community needs (Publication 3, Chapter 6). The core finding of the latter—of cultures of vernacular reinvention—was translated into vernacular-improvisatory codesign practices via a design provocation methodology (Publication 4, Chapter 7). Publication 4 surfaced the notion that translocal places are being made not only *within* individual discrete digital platforms but woven as meshworks *across* digital, physical, and imagined spaces, rendering prior terms like "virtual placemaking" and "cyberplace" insufficient to characterise them accurately. This resulted in the development of the term *transplace*, as outlined in Chapter 8. Both findings, transplaces and codesign with vernacular reinvention, were then applied and refined in an asynchronous workshop enacting co-creation through the research process (Chapter 9).

10.2 CONTRIBUTIONS TO KNOWLEDGE

The thesis' contributions to knowledge can be summarised as follows.

1. When placemaking in translocal mediated contexts, dwellers must often resituate a sense of shared place bridging disparate localities, cultures, technologies, and realities by playfully and transfomatively negotiating the "play rules" imposed by these spatial contexts.
2. To design for translocal placemaking entails designing in dialogue with the cultures of vernacular reinvention that produce these places—tactics that elevate dwellers as codesigners of interactive artefacts through their affective and context-sensitive reappropriations.

I encapsulate the thesis' contribution to knowledge with the term **transplaces**, as a way of thinking about the translocal lifeworlds where mediating technologies are both the instruments and the spaces of connection, and where places can span heterogenous ecologies of physical, virtual, and imagines spaces that fundamentally diverge from corporeal space/place.

In combination with the above, this thesis also presents the idea of **cultures of transplacial reinvention** as a characterisation of the transformative spatial tactics by which transplaces are negotiated across geographical, temporal, and technological disjoints. Transplaces are *meshworks* stitching together layered spaces and practices. Via vernacular acts of reinvention, transplaces are always being intersubjectively co-produced in ways that respond sensitively to diverse relational contexts and priorities. In this way, they are "care-ful" configurations that support relational needs; the practices of transplace-making being co-developed among communities of care, then transmitted in both social and intimate relational contexts.

The way to address the research questions, then, is not a need to design *better technologies* to support co-presence and placemaking in mediated relationships. Countless scholars before myself have already explored diverse design responses to this opportunity space (Hassenzahl et al., 2012), and many of these technologies are already commercially available. However, none of them "solve separation" in totality, and most will always be inaccessible to some who need them. **The most sustainable way to support translocal relationships—and the only one that build true resilience—is to facilitate *reinventive, adaptive tactics* which respond to specific contexts and are already being enacted (sometimes with difficulty).** These tactics are always being enriched in a process of doing and discovery.

That said, the research did reveal the ways that digital platforms work *against* placemaking, and how the dwellers' adaptive tactics often had to solve around these

limitations. Frequently, the technologies people use to connect translocally are the same ones that others use—text messaging, social media, video games, and phone calls, among others. Conventionally, these programmes are designed as products serving corporate interests, adhering to inflexible release schedules (J. Teixeira, 2017), standardised and conventional design axioms (Wong, 2021), algorithmic content ranking, advertising, and so on. Together, these produce the "conditions of power" (Madianou, 2021, p. 6) that structure and modulate the interactions and experiences afforded by these applications.

There is a parallel to be found in architecture studies, where the standardisation of suburban houses flattens away the texture of identity, cultural history, and practice memories through which place develops (Sabie et al., 2020). Amid the conditions of platform capitalism, the most accessible communication technologies are also, similarly, standardised to "flatness" in service of comfort, optimisation, and profit (Avram et al., 2019; Srnicek, 2017). These qualities render such platforms antagonistic to placemaking, within which reinvention, reimagination, and improvisation arise as vital tactics to re-establish a "careful" sense of place.

In other words, there is still ample room for interaction design to be better, and betterment does not entail a single ideal design intervention or method, but a different way of thinking about design that respects adaptive cultures of vernacular reinvention. That is to say, it is not for us to invent prescriptive solutions but **to design to make room for translocal placemakers to fashion tactics that are sensitive to their own endemic needs and limitations.**

Speaking to this view of communities of care and designing to invite vernacular reinvention, I have made all design work emerging from this thesis project available at https://place.circlejourney.net, where projects can be interacted with and altered dynamically and persistently.

In terms of positionality, this thesis also contributes a phenomenological view of networked technologies not as a *new force* acting on relationships, nor as channels being exploited as tools, but as worlds and spaces, embedding logics of reality which foster playful, transformative placemaking tactics.

Past research *has already* contemplated the monumental shifts that technology has brought about for long-distance relationship practices (Alinejad & Ponzanesi, 2020; Madianou, 2016; Madianou & Miller, 2013; Neustaedter & Greenberg, 2013; Ruppel et al., 2018). This thesis project signifies the next step in the progression of those ideas: a perspective from a time and culture in which these relational conditions are no longer new

nor isolated to specific demographics but have matured in both form and familiarity—where virtual spaces are commonly being inhabited as primary spaces for relationship deepening, both by necessity and by choice, and cultures are already forming around such contexts.

10.3 THE MAGIC RING: REVISITING THE RESEARCH QUESTIONS

Let me take a moment to spin an analogy about crochet. I learned to crochet amidst lockdown-imposed isolation during the COVID-19 pandemic. When a crocheter is looking to make something, they usually begin by searching for a pattern. This is made easier by the internet, where communities of crocheters often share their patterns, transmitting them communally across internetworks. Crochet patterns are usually codified as diagrams or blocks of text. Below is an excerpt from the pattern that I used most frequently (Fay, 2020):

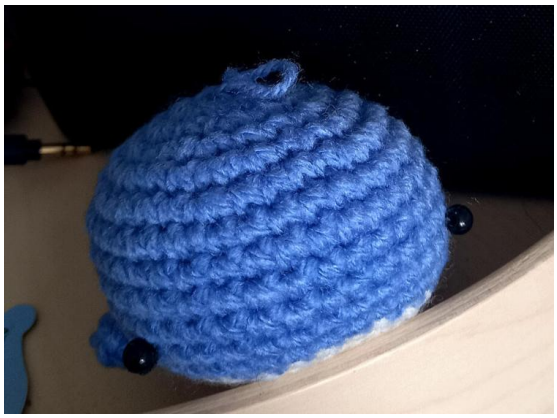
```
R1: 6 sc in magic ring (6)
R2: [Inc] x6 (12)
R3: [Sc, inc] x6 (18)
R4: Sc, inc, [2 sc, inc] x5, sc (24)
R5: [3 sc, inc] x6 (30)
R6: 2 sc, inc, [4 sc, inc] x5, 2 sc (36)
R7-11: [Sc] x36 (36) 5 rounds
```

And so on.

To those unfamiliar, this may look like a mathematical formula or a programming language—but this block of text encodes the instructions to create a whale (Figure 10.1). It begins in what is referred to as a “magic ring”: a loop of yarn that can be adjusted flexibly to size, upon which all further stitches are made in a layered, spiralling fashion.

Figure 10.1

A Crocheted Whale



When the pattern enters the hands of the maker, the maker changes it through subjective, affective interpretation. One may select a yarn colour that the creator may never have contemplated. One may use two types of yarn of different gauge, causing parts of the creation to be mismatched in size. One may spill coffee while crocheting, staining some of the threads brown.

In creative practice-based research, theory-forming is akin to the process of locating a crochet pattern. One positions the inquiry in relation to lived realities, then decides how to go about researching within that understanding. An ontology becomes an epistemology, which becomes a methodology. But as creative practitioners, our research often includes a stage where the research must dialogue with an intersubjective reality via participants and practices. At the point where one brings the theory to interface with reality, one often finds that the pattern, in all its meticulous design, *cannot account for everything that really happens and everything that is true*.

However, while adrift on this ocean of contingencies, it is the initial theoretical underpinnings that identify the endeavour of research. By starting with a whale pattern and iterating successively on that initial magic ring, I can be sure that the result will resemble a whale. And I know that I am doing practice-based research—as opposed to concocting a creative project out of programming languages and university funding—because the research is scaffolded by the established methodological work of design and practice-based researchers who came before me.

The abductive mode (Timmermans & Tavory, 2012) embodied by such inquiry—and the messy notion that the outcomes may not dovetail with the plan nor theory—is the basis of knowledge production in practice-based and design research, despite it often being

frowned upon by institutions of knowledge (W. Gaver et al., 2022). Rather than being falsifiable through empirical research, pre-existing theory acts as a springboard towards new understandings when approached in an abductive mode.

The research project that this thesis reports was fundamentally abductive and emergent, reconsidering its precepts and apprehensions of the issues of interest with the results of every research phase. This is the heart of its rigour: remaining open not to falsification but to being "led away" by new and surprising data (Timmermans & Tavory, 2012). What structures this, then, is a hermeneutic spiral of reflective practice: where the inquiry does not simply ramble on but reiterates itself in cycles of contemplation and dialogue with the world.

Especially in transdisciplinary fields like design and human–computer interaction, where there is a need to approach "wicked" problems (Pohl & Hirsch Hadorn, 2007) through collaboration across disciplinary fields, one often finds that the formulation of the research problem through a disciplinary lens cannot address the true breadth of the issue within its broader social context. A crucial facet of participatory research is that it reveals any hasty assumptions about the community's problems, needs, and preferences that may have been encoded in the research design. The emergence of the research was noted in Section 1.7 and here, I reflect on how it has manifested in this research project.

As I was conducting the research for this thesis, my methodology evolved together with the findings, and each time I revisited the research design, some element of it had to be changed. Iterations of community involvement revealed the technological solutionist attitude embedded in the initial framing of the research problem, which had assumed that there was a problem that could be solved with a disciplinary research intervention. Over its course, the research project gradually opened itself up to the view from everywhere, finding that the communities in question embody different ways of being, and require very different tactics to address their endemic priorities. They were diverse and sometimes contradictory: some families thrived online, while others struggled with the play rules imposed by internetworks. There was no silver-bullet design intervention to address all translocal placemaking needs.

As such, this thesis' most important contributions are to develop new ways of seeing and to propose design practices that meet the multitudinous ways of being found in translocal lifeworlds, which transplaces embody. Designing for translocal placemaking asks us to depart from the conventions of software design imposed by the interests of the capitalocracy: profit, surveillance, and control. This is not an endeavour in inventing a new

framework from whole cloth: place-centred design is *already* seen in the realms of arts practice and game design. Both spheres became the source of many methods and toolsets that I enlisted in the many stages of this research, including Dena's (2017) elements-behaviour-experiences (EBE) framework and tabletop game–inspired story-making (J. Turner & Taboada, 2021), to name two. This was my "pattern", so to speak.

Just as industry knowledge can disrupt and bring new insight to academic modes of thinking, it also brings pitfalls. In this project, this was signified by the way techno-solutionism revealed itself as embedded in the design-thinking method that many designers coming from industry are taught (Richterich, 2024). The research data yielded by the intermediate stages, rather than becoming input into the design-thinking cycle, functioned as a springboard to interrogate the shortcomings of design thinking itself. Here, the dialogue between disciplinary and communal knowledge allowed me to challenge this foundational principle of design practice whose solutionism I had unknowingly imported.

Encapsulating the transformation of my thesis has been the evolution of its title. Initially, the project was called "Re-Locative Media", a play on "locative media" that gestured to the "reconnective" and "healing" role of networked technologies and internet media within relationships impacted by distance. As research progressed, I found that the "re-locative" framing was too entrenched in a solutionist view, as if the technology were here to *recreate* something that was missing, or to erase a point of disjointedness. I slowly gravitated towards the translocal/transplace terminology, more descriptive of what I had found in the course of inquiry: that people will make place even in the most unlikely circumstances, even where one might presume placelessness. Design cannot fix this "problem", but it can connect knowledges together, and stitch together the view from everywhere, one thread at a time.

10.4 THE WHALE

Through successive iterations, this research project's spiralling path of inquiry has coalesced into the shape of a doctoral thesis. Within its practice-based methodology, I have repeatedly contemplated my personal context as part of the research's positionality. In this final section, I reflect on the impact of the research on my life and practice.

At the start of this thesis document, I referenced the idea of a red thread running through it from start through end, drawing together its narrative. But perhaps it would be more personally resonant for that thread to be blue. I started crocheting a whale at the beginning of my Doctor of Philosophy journey and, to this day, it sits unfinished on my

shelf. Likewise, the intensity of my full-time enrolment under the constraints of my student visa have limited me to visiting my family only once a year.

Even while being a migrant who keeps in touch with my family online, it was necessary to undertake this research as a participatory project in order to foreground perspectives beyond my own and a diversity of contexts in which translocal placemaking occurs. I have an extensive network of friends across the world who, like me, make relational places over the internet every day, and each of us does it differently.

My viewpoint is limited by who I am: I am English-language-educated, come from an upper-middle-class family, and migrated by choice. This shaped my access to resources, access to my home country, and the nature of the alienation I have experienced in Australia. I am autistic, queer, and suffer from post-traumatic stress disorder. This affected how I experienced separation from family and friends, and the relocation of my relationships to the online medium when I migrated. To invite others to research with me as collaborators was the only way to begin respecting the kaleidoscopic richness of translocal life across many worlds.

So here, in my thesis' final paragraph, all the stitches and weavings of its thread—red or blue or whatever colour it may be—must supposedly come together in its final design. But that design is always-imperfect and always-becoming, and it can only *signify* something much vaster than itself—

Figure 10.2

Three Completed Crochet Whales

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