

INTRODUCTION

Encouraging Relational Technologies in British Columbia

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WE BEGIN BY introducing ourselves, two settler scholars who teach and do research within the Institute of Critical Indigenous Studies (CIS) on Musqueam territory at UBC-Vancouver. As a linguist working in long-term partnerships with Indigenous communities to support community-led language revitalization, Daisy has increasingly engaged a wide range of technologies, tools, systems, and practices in her work, from collaborative transcription to natural language processing. Dave's scholarship of new media and digital storytelling within a decolonial framework has also drawn him closer to game design, extended reality, and immersive theatre. Our shared love of lo-fi audio, comic books, video games, zines, and other DIY creative media directly reflects our belief that technologies, and the knowledge of how to create them, can – and should – be accessible to local communities, even though they are usually not.

With this in mind, we co-founded the Community Engaged Documentation and Research (CEDaR) Space within CIS as a collaborative lab-studio for community-led innovation grounded in local contexts, politics, and protocols. CEDaR projects range from an interactive map at the Museum of Anthropology that showcases contemporary recordings of BC Indigenous languages to a mobile app that unlocks site-specific installations of *hənq̓əminəm* audio on campus.¹

Our research-creation at CEDaR seeks alternative strategies for developing technologies with community partners. Instead of moving fast and breaking things, “in the name of progress, of disruption, of building the future,”² we move slow. Iterative development allows progress to pause, or stop, as needed, in response to community partners

¹ University of British Columbia, “CEDaR Space,” <https://www.cedarspace.ca/>.

² Brian Merchant, “Government by Grok: How and Why Elon Musk is Trying to Automate the Federal Government,” *Blood in the Machine*, 5 February 2025, <https://www.bloodinthemachine.com/p/government-by-grok>.

and cultural protocols. Crucially, such alternative processes require us to build local, place-based rhizomatic structures of knowledge-creation, knowledge-sharing, and knowledge-stewardship. These structures decentre specialized training, demystify black boxes, and redistribute expertise from the centre to the margins. Though it may be counter-intuitive, we have also found that some concepts borrowed from the tech industry serve our community research partnerships well, such as the practice of “Agile” software development, which values “individuals and interactions over processes and tools; ... collaboration over contract negotiation; [and] responding to change over following a plan.”³

Inspired by our work with CEDaR, this issue of *BC Studies* gathers examples of digital practices in British Columbia that are embodied, interactive, and situated under the term *relational technologies*. It showcases just a few of the ways that creators, developers, and scholars are actively designing, mobilizing, and theorizing relational technologies in service of communities. In this introduction, we each offer our individual reflection on the concept of “relational technologies” before offering our joint elaboration of it. We then briefly describe the contents of this special issue.

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Daisy Rosenblum: In early spring, large milky swirls of Pacific herring (*Clupea pallasii*) gather along the shores in British Columbia, their eggs and spawn turning the navy water turquoise. A few years ago, alongside colleagues in the Gwa’sala-Nakwaxda’xw Language Program, I learned how to set out lines with ti’yu (branches for herring to spawn on)⁴ tied at evenly spaced intervals, in order to gather a’ant (herring eggs),⁵ a beloved delicacy and one of the earliest fresh foods whose return signals the end of winter. Indigenous nations along the Pacific Northwest coast share this practice, submerging kelp fronds, cedar mats, and boughs of hemlock, red cedar, or spruce near the shore before a spawn.⁶ Photos, videos, and

³ Kent Beck, Mike Beedle, Arie van Bennekum, et al., “Manifesto for Agile Software Development,” 2001, <https://agilemanifesto.org/>.

⁴ First Peoples’ Cultural Council, FirstVoices [Kwak’wala dictionary], s.v. “ti’yu,” accessed 20 February 2025, <https://www.firstvoices.com/kwakwala/words/716a651d-2eb7-4bbe-94dd-c7e39ea8d74e>.

⁵ First Peoples’ Cultural Council, FirstVoices [Kwak’wala dictionary], s.v. “a’ant,” accessed 20 February 2025, <https://www.firstvoices.com/kwakwala/words/a6285999-a357-4f3d-b91d-e7b41cf6d07c>.

⁶ Anne Salomon, Dana Lepofsky, Heather Earle, and Melissa Poe, “Herring Egg Gardens of the Northwest Coast,” 2022, <https://www.seagardens.net/herring-gardens>; Dana Lepofsky and Mark Wunsch, “Pacific Herring Past, Present and Future,” 2021, <https://www.pacificherring.org/home>.

descriptions of this year's spawning event scrolled through my social media feed this past week via a Facebook page managed by the Island Marine Aquatic Working Group (IMAWG), a consortium of fifteen First Nations on Vancouver Island and surrounding coastal regions. Herring egg gardens, and all of the traditional ecological knowledge (TEK) surrounding them, are a prime example of an ancient relational technology with continuing relevance. Herring eggs are keystone species for Indigenous communities along the coast, embedded within social, cultural, trade, and culinary networks. Roe-on-kelp, or ROK, is now cultivated and sold to partners across the Pacific as a high-priced delicacy in Japanese sushi restaurants. In the spirit of setting out a line tied with spruce branches, this special issue of *BC Studies* strings together research, creation, and reflection on the theme of relational technologies.

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David Gaertner: In her 1998 essay "Aboriginal Narratives in Cyberspace," Cree/Métis filmmaker and creator of the BC-based IM4 Media Lab Loretta Todd critiques the ways digital technologies, particularly early virtual reality (VR), perpetuate settler colonial epistemologies by severing users from land, community, and their own bodies. Todd argues that immersive digital environments often facilitate a form of escapism, one that mirrors the colonial logics of displacement and alienation. Virtual worlds, in this context, function as a continuation of historical processes that displace Indigenous Peoples from their territories, favouring commodified, disembodied experiences over relational, place-based ways of knowing. Todd's analysis calls for a revaluation of how digital spaces could instead be designed to reinforce connections to place, embody respect for the land, and foster a sense of responsibility and kinship with the natural world, challenging the prevailing tech-driven narratives of dislocation and disenchantment. "Aboriginal Narratives in Cyberspace" concludes with a forward-looking vision that suggests an alternative path for technological development. Todd envisions a future where technologies foster a deeper connection to our surroundings, communities, and physical selves. She proposes a pivot from virtual reality to augmented reality, hinting at a digital space where technology enhances, rather than replaces, our engagement with the real world: "As cyberspace develops, perhaps it will examine augmented versus immersive technology. Perhaps it will explore narrative forms in which

you do not leave your body or soul.”⁷ Todd does not directly distinguish between Indigenous and settler VR users, but she highlights fundamental differences in their engagement. She critiques the dominant Western ontology that underpins cyberspace, describing it as a product of a long history of disembodiment, alienation from land, and the pursuit of transcendence. In this framework, VR and digital technologies extend a settler-colonial impulse to escape the material world and impose hierarchical control over virtual and physical spaces alike. She asks whether Indigenous presence can be articulated in cyberspace in ways that resist colonial erasure without reinforcing extractive and commodified digital landscapes.

I am moved by Todd’s call for embodied, relational, and place-based technologies. I understand relational technologies as a means of amplifying and extending our inherent relationships with community, land, non-human entities, and ideas. This perspective challenges the often abstract and disembodied nature of contemporary digital technologies, advocating instead for approaches that honour the intrinsic relationships we hold with our environments and each other. The contributions to this special issue of *BC Studies* advance and expand what is possible in terms of relationality in cyberspace and open up new opportunities to think about how digital technologies can serve as sites of critical making, community-building, and knowledge-sharing beyond the extractive logics that currently fuel our digital environments.

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Culture is composed of technologies: stories are technologies, and so is language. Music, and the tools we use to make it, both tangible and intangible, are technologies. Here, we define *relational technologies* as analog and/or digital tools that connect us in generative ways to each other, to the places where we find ourselves at any given moment, and to our own bodies and selves. The QR codes along the Black Strathcona walking tour, a Musqueam blanket woven by Debra Sparrow at her studio on Granville Island, a Gitksan adaawk listing place names for witnesses at a feast, an augmented reality app installing poetry in the Dr. Sun Yat-Sen Classical Chinese Garden, a Twine game created by youth from six Stó:lō communities about their ancestor Kw’í:ts’téleq

⁷ Loretta Todd, “Aboriginal Narratives in Cyberspace,” in *Immersed in Technology: Art and Virtual Environments*, ed. Mary Ann Moser and Douglas MacLeod (MIT Press, 1996), 193, <https://doi.org/10.7551/mitpress/3678.003.0012>.

and his adventures: these are all examples of the rich range of relational technologies grounded in the place currently called British Columbia.⁸

The word *technology* easily calls up marketing images of iPhones, Teslas, TikTok, game consoles, the code that runs these things, and the uncertain, vaguely understood, and threatening landscape of so-called artificial intelligence. From the printing press, to the moving assembly line, to the Univac 1, to semiconductor nanochips, to ChatGPT, technologies have continually become more complex, more powerful, and more removed from what we can make on our own. Corporate technologies are shaped by the colonial-capitalist paradigms that made them; it seems they can't help but impose the same modes of extraction, occupation, and destruction that created them.

Proprietary digital tools, from social media to large language models (LLMs), operate on an extractive logic that severs reciprocity in favour of commodification. These systems do not foster genuine connection but instead simulate relationality to harvest data – social media monetizes our networks, while AI models impersonate human expression, distorting communication into a one-way flow. Rather than reinforcing the rhizomatic, interdependent systems that bind communities together, these technologies erode them, transforming digital spaces into engines of colonial capitalism that exploit both digital territories and the labour embedded within them.

Our concept of relational technologies is developed in response to artificial intelligences, machine learning models, data-mining, and algorithmic assumptions that impose alienation on physical and digital territories, bodies, and futures. Relational technologies, in contrast, nurture rhizomatic constellations of kinship among human and non-human partners,⁹ and cultivate networked digital space.¹⁰ By connecting us more deeply to each other, our stories, and to the places we inhabit, they establish an alternative reality and future.

⁸ Gordon McLennan, Black Strathcona Project, Creative Cultural Collaborations Society in Partnership with Vancouver Moving Theatre, 2014, <http://blackstrathcona.com/interactivity/>; Salish Blanket Co., “Honouring Traditional Salish Weaving & Textiles,” 2024, <https://www.salishblanketco.com/>; Margaret Anderson and Marjorie Halpin, eds., *Potlatch at Gitsegukla: William Beynon's 1945 Field Notebooks* (Vancouver: UBC Press, 2000), 15; Centre for Digital Media “Innovative AR App Uses Geo-Location to Deepen Poetry Experience,” 6 May 2024, <https://thecdm.ca/news/ar-site-specific-poetry-app>; Stó:lō Xwexwilmexw Government in collaboration with CEDaR, *Kw'í:t's'téleg*, video game, Twine, released 5 May 2022.

⁹ Jason E. Lewis, Noelani Arista, Archer Pechawis, and Suzanne Kite, “Making Kin with the Machines,” *Journal of Design and Science* 3.5 (2018), 4, <https://doi.org/10.21428/bf4fd97b>.

¹⁰ Marisa Elena Duarte, *Network Sovereignty: Building the Internet across Indian Country* (Seattle: University of Washington Press, 2017), 9.

Relational technologies, as we conceive of them, emerge from development processes that design from the margins¹¹ and orient toward justice.¹² Relational technology development also refers to the reappropriation, remixing, and improvisation¹³ by which local communities and cultures reclaim sovereign territories within spaces that are not made for or by them. Pre-Musk, generative communities such as #BlackTwitter formed spontaneously, generating new opportunities and pathways. Auteurs found and grew audiences on YouTube. Traditional food marketplaces, potlatch calendars, and language revitalization still thrive in Facebook groups and pages.

These development processes, as well as the technologies they generate, have the potential to leave space for co-creation with communities, with non-human partners, and with chance. Karlene Harvey's cover illustration of the Pacific herring, and the network of knowledge about how to gather their eggs, are both emblematic of longstanding relationships underlying human presence in what is currently called British Columbia. As one of twenty guardian species appearing on a set of divination cards created for the artist and educator Laiwan's 2022–23 project *How Water Remembers*, this herring reminds us of the potential for multidirectional relationships guided by collective care for other beings in this ecology. The *How Water Remembers* project generated shared experiences of place, through collaborative making, divination cards, scavenger hunts, counter-mapping, cross-community story sharing, and translations. A selection of these materials, which can also be seen as relational technologies, is reprinted in *This Space Here*. The other contributions assembled in this issue present diverse examples of relational technologies in British Columbia, which cohere around their generative attention to place, community, and well-being. Each contributor approaches relational technologies from their own perspective, expanding on the concept in unique ways that arise from their specific experiences in this province.

Denise Fong's article, "Curating 'Chinese Canadianness,'" demonstrates how community-engaged curatorial practice fosters community building through the co-creation of digital spaces and tools with

¹¹ Afsaneh Rigot, *Design from the Margins: Centering the Most Marginalized and Impacted in Design Processes – from Ideation to Production*, Technology and Public Purpose Project (Belfer Center for Science and International Affairs, Harvard Kennedy School, May 2022), 3, <https://www.belfercenter.org/publication/design-margins>.

¹² Sasha Costanza-Chock, "Introduction: #TravelingWhileTrans, Design Justice, and Escape from the Matrix of Domination," in *Design Justice: Community-Led Practices to Build the Worlds We Need* (MIT Press, 2020), 6, <https://designjustice.mitpress.mit.edu/pub/ap8rgw5e>.

¹³ Nettrice R. Gaskins, *Techno-Vernacular Creativity and Innovation: Culturally Relevant Making Inside and Outside of the Classroom* (MIT Press, 2021), 6–7.

communities rather than for them. Fong reflects on how museums can establish what she calls relational curation, facilitating community-driven meaning-making processes through engagement with storytelling technologies. The participatory approach to curation in the exhibition “A Seat at the Table: Chinese Immigration and British Columbia” (ASAT), which Fong analyzes, exemplifies how museums can become spaces of community engagement, where curators act as facilitators rather than preservers of knowledge. ASAT’s methodology involved community members directly in the curatorial process, ensuring the exhibition reflected the lived experiences and aspirations of Chinese Canadian immigrants in British Columbia. This participatory process, a form of relational curation, made the museum experience more relevant and meaningful to members of the Chinese Canadian community in the province. Multimedia tools and digital storytelling enhanced engagement, making narratives accessible and interactive. For Fong, a key aspect of how relational technologies build community is the deliberate effort to redistribute the power to create knowledge, prioritizing the voices and experiences of those whose story is being told.

“Coordinating Connection: Establishing a Dementia-Inclusive Digital Community,” by Ania Landy, Paulina Malcolm, Karen Lok Yi Wong, and Alison Phinney, describes the rise of an online community among people living with dementia and a team of researchers working with them during the COVID-19 pandemic. When restrictions on meeting in person suspended their planned project and the group expressed a desire to continue, researchers revised their ethics agreement and consent process, and moved to an online platform. The move online resulted in more frequent meetings and increased access and engagement from more diverse and remote communities throughout the province than would have been possible with the original in-person format. The article describes what researchers learned about effective strategies for creating a sustainable, safe, and caring digital community for people living with dementia. These strategies centre the relationships among participants, as well as participants’ local networks, and the potential for collaborative creativity.

In “Conceptualizing Relational Technologies for Native Hawaiian (HI)Stories and Contemporary Realities in the Pacific Northwest” by Candace Kaleimamoowahinekapu Galla, Anastasia Zhuravleva, and Firth MacKenzie McEachern, protocol and place serve as fundamental methods for engaging with culture in the digital world. Focusing on the lived experiences of Kānaka Maoli (Native Hawaiians) in the Pacific

Northwest, their approach recognizes that digital technologies are not neutral but deeply embedded in cultural contexts. The authors conceptualize relational technologies as a means to create a digital archive that respects and preserves the diasporic Kānaka Maoli community's history. Their research note documents the creation of a digital map of Hawaiian place names and histories in the region. Based on an in-depth annotated bibliography, the map visualizes the spatial and temporal scale of Hawaiian influence in the Pacific Northwest, providing a bird's-eye view of the enduring presence of the Kānaka Maoli. By embedding cultural protocols and place-based knowledge into the mapping process, Galla's project exemplifies how relational technologies can support and sustain Indigenous sovereignty and cultural integrity.

Working with video games instead of GPS, Josh McKenna likewise centres cultural protocols and land-based perspectives. He describes two such projects in his research note, "Métis Storytelling through New Media as a Means of Virtual Sovereignty," which examines how video games can be relational technologies that actively uphold Indigenous – in this case Métis – sovereignty. Rather than treating digital platforms as neutral or universal, McKenna centres Indigenous epistemologies, reinforcing land-based relationships, and fostering solidarity across different territories and knowledge traditions. Through both narrative and gameplay mechanics, the video games McKenna has developed invite players to engage meaningfully with Métis heritage, cultivating a form of virtual sovereignty that is deeply connected to storytelling and Métis relationships with the land. For McKenna, relational technologies can prompt physical and sensory experiences through virtual means that enhance users' awareness of relationships between cultural heritage and environment. By accurately representing the stories, cultures, and perspectives of the Métis and other Indigenous nations, the game becomes a relational technology that fosters cultural education and builds community.

Janey Lew and Samantha Nock, educators and strategists at UBC's Centre for Teaching and Learning Technology (CTLT), contribute an episode of the podcast *Stories in/relation*, in which they interview Ayaka Yoshimizu, an associate professor of teaching in UBC's Department of Asian Studies. Yoshimizu discusses how she incorporates Indigenous-Asian relationality and local Indigenous knowledge in her classes. As is clear from their discussion, the process of developing, recording, and editing the podcast created a container for Yoshimizu, Lew, and Nock, a space within which to share their positionalities and experiences

engaging with Indigenous contexts at UBC. As Nock says, the recording of their conversation captures a moment of *visiting* as research practice, through which listeners are invited to consider their own learning and unlearning within colonial institutions.¹⁴

In Courteney Morin's conversation with Paul Seesequasis about his long-running Indigenous Archival Photo Project,¹⁵ they consider the historical role of photography in relation to Indigenous lives, communities, and memories, alongside the Project's retrieval, reorganization, and re-presentation of these images. The project page on Facebook, a prime example of reappropriation within an extractive corporate space, is a relational technology that allows each photo posted to become a nucleus for collective contextualization, reclaiming and renaming of images that have been separated from their context. Seesequasis also describes how changing algorithms on social media have reduced the potential for community connections on Facebook, Instagram, and other platforms where Project images are shared, reminding us of the precarity of these spaces. In reflecting on the processes of community consultation, approval, and permission that accompany Project exhibitions at local museums, Seesequasis also shares an example that illustrates the need to move slowly and hold space for uncertainty and conflict within process, exemplified by the continuing process of negotiating an agreement between the Nelson Gallery and the Sinixt and Ktunaxa Nations about how to manage the photos and their permissions and attributions.

In "Apping a City through Verse," Jonathan Hennessey explores the creation of the City Poems application, a relational technology developed at CEDaR Space. Developed in partnership with Fiona Tinwei Lam during her tenure as Vancouver's Poet Laureate, the City Poems app guides users to the physical locations that inspired poems collected by Lam through her City Poems project. By avoiding maps, the app introduces productive uncertainty as a feature, not a bug, of its design.¹⁶ Instead, the app's navigator guides user attention toward the immediate environment, encouraging the experience of being lost

¹⁴ Janice Cindy Gaudet, "Keeoukaywin: The Visiting Way – Fostering an Indigenous Research Methodology," *aboriginal policy studies* 7, no. 2 (2019): 47–64, <https://doi.org/10.5663/aps.v7i2.29336>.

¹⁵ Paul Seesequasis, Indigenous Archival Photo Project, accessed 20 February 2025, <https://paulseesequasis.com/>.

¹⁶ m.c. schraefel and Michael Jones, "Discomfort: A New Material for Interaction Design," *Frontiers in Computer Science* 5 (9 August 2023): 2, <https://doi.org/10.3389/fcomp.2023.958776>; Helen Halbert and Lisa P. Nathan, "Designing for Discomfort: Supporting Critical Reflection through Interactive Tools," in *CSCW'15: Proceedings of the 2015 ACM International Conference on Computer-Supported Cooperative Work and Social Computing* (New York: Association of Computing Machinery, 2015), 349–60, <https://doi.org/10.1145/2675133.2675162>.

as well as finding one's way. The navigator responds in real time to environmental data such as tide level and soil moisture, giving voice to the land and reminding users of their connection to the natural world, promoting community-engaged, culturally grounded interactions with Vancouver's neighbourhoods and the palimpsest of cultures in them. By translating place-based knowledge into digital space without the abstraction of a map, City Poems resists and reframes colonial logics of place while honouring and amplifying community knowledge and perspectives.

Patrick Pennefather, David Gaertner, and Kris Krüg describe the formation of a community around monthly in-person meetups in "Reflection on a Situated AI Community of Practice: What We Might Learn from a Vancouver-Centred Use Case." As they say on their website, "this ain't your average meetup. We're exploring the dynamic intersection of AI and creativity—bringing together researchers, artists, tech enthusiasts, entrepreneurs, experts, students, and more!" This approach aligns with Landy et al.'s principles for building a thriving online community, reflecting key factors that have contributed to the success of these events." The authors identify several features, practices, and activities that have promoted inclusivity, collaboration, engagement, and sustainability within their AI Community of Practice. By orienting its practices to the local contexts of Vancouver, the meetup series established a creative ecosystem fostering opportunities for playful and curious innovation. These gatherings set the stage for new relational technologies to emerge.

By prioritizing grounded and relational methods of gathering, storing, and mobilizing knowledge, relational technologies challenge dominant models of digital knowledge production, offering alternative frameworks that centre accountability, reciprocity, self-determination, and community. This special issue is not just about documenting these diverse efforts. It is also about advocating for the sustained support and investment necessary to ensure such technologies' longevity and impact. Relational technologies require robust technical, financial, and administrative infrastructures to sustain and protect community knowledge systems. This commitment is essential to fostering what Vine Deloria describes as "wise and substantial"¹⁷ knowledge stewardship practices – approaches that repatriate and amplify Indigenous intellectual traditions while resisting the extractive tendencies of colonial knowledge infrastructure. As the pieces in this special issue demonstrate, such approaches

¹⁷ Vine Deloria, *The Right to Know: A Paper* (Washington: Office of Library and Information Services, US Department of the Interior, 1978), 13–17.

have wide-ranging potential to benefit all communities, including but not limited to Indigenous ones. Relational technologies offer an alternative to extractive, surveillance-driven digital infrastructures. They disrupt the illusion of seamless digital capitalism, advocating instead for platforms that prioritize collective knowledge-making, protect data sovereignty, and embed cultural protocols into digital design. Rather than extracting value from users, they cultivate reciprocal relationships by fostering community-driven curation, enabling localized storytelling, and designing with – not for – communities.