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Playing Speculative Cat's Cradle: Reckoning with the Feminist Potentialities of Twine

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Abstract: Inspired by the feminist possibilities within digital technologies and acknowledging their limitations, the authors examine the collaborative process of creating Twine workshops for three conferences, the International Communications Association, the Canadian Communications Association, and the Open Technology in Education, Society, and Scholarship Association. The workshops engaged with Twine as an interactive tool for reckoning with narratives of Empire through feminist, nonlinear, non-normative, creative expression and explored how embracing the ethos of Twine might enable collaborative analog ideation. In Twine, we see ways to bifurcate from libertarian normalizations of individualism and instead posit "playing with speculative cat's cradle" as a prompt from Donna Haraway to collectively reckon with, re-imagine, and co-experiment with burgeoning forms of digital expression to shape otherwise thinking and future possibilities. Drawing from our respective fields of expertise (digital cultures; communications; history; gender, feminist, and women's studies; environmental studies; writing and rhetoric; game studies), we examine the opportunities and limitations of Twine and reflect on the process of forming a feminist collaboration. We highlight processes and relationships rather than solely focusing on outcomes as a deliberate feminist intervention against neo-liberal results-oriented approaches to research and suggest that a component of feminist collaboration is being open to nonlinear, ongoing, and iterative work together.

Keywords: Twine; speculative fabulation; feminism; collaboration; creative practice; nonlinear storytelling

Résumé : Inspirées par les possibilités féministes offertes par les technologies numériques, tout en reconnaissant leurs limites, les auteures examinent le processus collaboratif de création d'ateliers sur Twine pour trois conférences, soit celles de l'International Communications Association, de l'Association canadienne de communication et de l'Association pour l'ouverture/les technologies en éducation, dans la société et pour l'avancement des savoirs. Les ateliers ont mobilisé Twine comme outil interactif permettant d'aborder de manière critique les récits de l'Empire à travers une expression féministe, non linéaire, non normative et créative, tout en explorant la manière dont l'adoption de l'éthique de Twine pourrait favoriser une idéation analogique collaborative. Dans Twine, nous voyons des façons de s'écarter des normalisations libertariennes de l'individualisme et proposons plutôt de « jouer à un jeu de ficelle spéculatif » en suivant l'appel de Donna Haraway à réfléchir collectivement, à réimaginer et à coexpérimenter des formes émergentes d'expression numérique afin de façonner d'autres modes de pensée et de futures possibilités. En nous appuyant sur nos domaines d'expertise respectifs (cultures numériques; communications; histoire; études féminines, féministes et sur le genre; études environnementales; écriture et rhétorique; études des jeux), nous examinons les possibilités et les limites de Twine et réfléchissons au processus d'établissement d'une collaboration féministe. Nous mettons l'accent sur les processus et les relations plutôt que de nous concentrer uniquement sur les résultats, comme une intervention féministe délibérée contre les approches néolibérales axées sur les résultats en recherche. Nous suggérons aussi qu'un aspect de la collaboration féministe consiste à être ouvert à un travail commun non linéaire, continu et itératif.

Mots clés : Twine; fabulation spéculative; féminisme; collaboration; pratique créative; récits non linéaires

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Sarah Choukah is a transmedia artist and researcher, and assistant professor in digital communications and media studies at the Université de l'Ontario français in Toronto. Her research combines digital technologies with transdisciplinary practices across bioart, creative computing, interspecies collaboration, and feminist and posthuman approaches. She has a longstanding relationship with *Physarum polycephalum*, a slime mold that challenges anthropocentric notions of intelligence and invites alternative modes of decentered, more-than-human sensing and thinking. Her current work explores hybrid, modular, bioelectronic art gardens as experimental spaces, as well as modes of belonging and collective action at the margins of big tech, with a particular concern for minority francophone communities navigating predominantly anglophone digital systems.

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"Everything is a parking lot or landback." – participant in one of our Twine workshops

While digital technologies are embedded in exploitative practices within the current colonial context (Chan 2013; Couldry and Mejias 2018; Arora 2019; Benjamin 2019; Milan and Treré 2019), they also offer "new possibilities of politics of difference" and "understanding locations" (Lothian and Phillips 2013; Tuzcu 2016; Lewis et al. 2018; Philips 2021). Inspired by these possibilities, the authors, all members of York University's Feminist Digital Methods Research Cluster (FDMRC), examine the process of creating workshops for three conferences held in 2023, the International Communications Association (ICA), the Canadian Communications Association (CCA), and the Open Technology in Education, Society, and Scholarship Association (OTESSA). The workshops engaged with Twine (twinery.org), an open-source tool to create interactive, nonlinear, and choice-based storytelling. We were specifically interested in Twine as a collaborative and experimental tool for reckoning with narratives of Empire through feminist, nonlinear, non-normative, creative expression. We want to make a note that attendees of the three workshops by virtue of their attendance at these specific conferences were most likely well-versed in digital media and methods, which may have impacted on the effectiveness of the workshops. The results of the workshops should be understood as highly contextual case studies rather than generalizable universal templates.

From feminist perspectives, Twine is particularly interesting as a nonlinear narrative-building digital tool since it is accessible and free to use. Additionally, by having a low learning curve (Anthropy 2012; Evans 2020), Twine "challenges mainstream standards by subverting the celebration of difficulty, in both production and play" (Harvey 2014, 99). We do not position Twine as a technological fix, but as a tool to generate expansive thinking, engage in collaborative digital scholarship, and craft new meanings. In this article, we draw from Long et al.'s (2020) work on feminist collaboration and Donna Haraway's (2011; 2021) concept of feminist speculative fabulation in science fiction (SF). Haraway's (2021) metaphor of cat's cradle, which she uses to conceptualize threads between SF writers, resonates with our experiences collaborating with Twine together as we "pass patterns back and forth, give and receive, hold the unasked-for-pattern in our hands," reflecting on failure, Twine's limitations, and our own while also finding "something that works, something consequential and maybe even beautiful, that wasn't there before" (Haraway 2021, 10), as further explored below.

In this paper, we draw from our areas of study (digital cultures; communications; history; gender, feminist, and women's studies, environmental studies, game studies, and writing and rhetoric) and what Long et al. (2020) term "retrospective sense-making" to examine the opportunities and limitations of Twine as we have encountered them within the three workshops we developed. In particular, we explore our experiences of feminist collaboration using Twine and consider approaches to contravene the platform's limitations. We take our cue from Kuo (2020) to highlight processes, relationships, tensions, and challenges rather than solely focusing on outcomes as a deliberate feminist intervention against results-oriented approaches to research. We reflect on Twine as a tool for otherwise and nonlinear thinking. In the following sections of this article we first outline the process of coalescing, creating, and conducting three Twine workshops as a group over the course of one year. We then reflect on two guiding themes that emerged from this iterative workshopping process: nonlinearity and collaboration, which we see as building towards an idea of feminist digital play. Through our reflections on the workshops, we contribute to conversations about feminist methods and theories of the transformative potentialities of technologies, particularly how interactive and accessible tools can enable collective mobilization and resistance in the academy and beyond.

What if… we jam with Twine?

In the spring and summer of 2022, a group of feminist digital methods (FDM) practitioners organized York University's (YU) open access FDM Events and Conference with the aim to foster communities of practice. On July 14, 2022, YU's Centre for Feminist Research (CFR) hosted a virtual workshop titled "Feminist Possibilities of Digital Interactive Storytelling" proposed and authored by writer and lecturer Anna Lee-Popham, through which participants explored the use of Twine. During this generative, critical, and playful workshop, we realized we wanted to continue playing with Twine together. As we wrapped up the workshop, Sarah Choukah, Assistant Professor in Digital Cultures at Université de l'Ontario français, asked "What if we do Twine jam sessions?" and the idea of organizing more

opportunities to collaborate around Twine took root. In October 2022, we established a small Twine-making group as part of the new FDMRC Quilting Circle, supported by the CFR and YU Libraries' Digital Scholarship Centre and Media Creation Lab.

The FDM Events and Conference provided an initial opportunity to meet and learn from each other, laying the groundwork for playful feminist collaboration. With YU hosting the 2023 Congress of the Humanities and Social Sciences and engaging themes of reckoning and reimagining, we decided to propose our workshop to the CCA and OTESSA. The themes of reckoning and reimagining lend well to what Shira Chess names "radical play," an approach to play that is disruptive to the status quo in big and small ways (Chess 2020, 7). We also decided to propose our workshop to the ICA Games Studies conference preceding Congress. All three associations accepted our proposals of two-part workshops that first resourced participants in learning how to use Twine and then facilitated a co-creative play session.

Our experiences as a collaborative and multidisciplinary group of FDM practitioners have shaped our approach to writing this article. We are interested in and have grappled with the language of methods and methodologies. While readers of this article may be inspired to organize similar workshops or use our writing as a jumping off point for their own collaborative and feminist work/play, this article is not written with the intent of sharing data that can be verified and reproduced. Our process for writing this article is one of "retrospective sense-making" (Long et al. 2020), which involves selecting and interpreting our experiences. Part of that retrospective sense-making involves thinking through language and conversing about our (inter)disciplinary perspectives. We draw from qualitative research methods, which lend well to multidisciplinary collaboration as they are multimethod in focus and rely on naturalistic inquiry. Naturalistic inquiry observes phenomena in their "natural" setting. The settings of our workshops were informed by the delegation of space, by the associations we worked with, as well as by the materials we brought with us and the contributions of participants.

In addition to Long et al.'s (2020) work on feminist collaboration, we turned to speculative fabulation to conceptualize our expansive and critically playful collaborative storytelling. In her characterization of speculative fabulation in SF's terran worlding, Donna Haraway likens SF to a game of cat's cradle, imagining the collaborative worldmaking process of SF authors as "[…] giving and receiving patterns [...] relaying connections that matter, of telling stories in hand upon hand, digit upon digit, attachment site upon attachment site, to craft conditions for flourishing" (Haraway 2021, 10). Our collaboration can be similarly characterized as we grapple with Twine as a platform and as a way of thinking about playful feminist worldmaking. Although play is a core feminist issue (Chess 2020, 6), it is not necessarily fun (Sicart 2014). In making this statement, we are aligning our feminist approach to the ludic less with Zimmerman and Chaplin's proclamation of "a ludic century" characterized by a centering of digital games as exemplars of systems thinking and more with another manifesto, that of Donna Haraway's cyborg. Haraway embraces "humour and serious play" (Haraway 1991, 291), an approach to understanding the ludic as a dance between creation and destruction, between creativity and nihilism (Sicart 2014, 3). Taking direction from intersectional feminism, which refuses a universal perspective of reality and its histories (Lutz et al. 2011), we combined playfulness with a serious drive to make sense of power's fulcrums, structures, and devices (Back and Puwar 2012, 8).

According to Haraway (2011, 99), "twenty-first century technoscience and technoculture are nothing if not frontier practices, always announcing new worlds [...]." Drawing links between settler colonial nation-states, Haraway encourages settler-citizens of such states to "face settler heritage differently, to participate in decolonising generational practices, in a state of what [Deborah Bird] Rose calls 'responsive attentiveness'" (Haraway 2011, 100). On the subject of generational practices, the FDMRC centres early career scholars. Congress 2023's themes of reckoning and reimagining as well as engaging with feminist futurity and questioning the future of post-secondary education brought forward opportunities to discuss rank and tenure in an informal and playful space. Tenured or tenure-track professors and graduate students made up the majority of participants for our workshops with an interesting generational and professional rank dynamic in which those most senior learned from their junior colleagues. This generational dynamic differs from expectations of learning and mentorship in the academy.

During our Twine workshops, we inhabited fluid roles. However, one of us in particular—Professor Sarah Choukah—did the most thorough note taking and documenting. Choukah made handwritten notes during the workshops and used a 3D-scanning camera application for documenting the spaces where our workshops took place as well as objects participants created in the workshops (https://scans.minutiae.ca/catscradle/). Choukah shared the images and her notes with the rest of us by typing out the notes and uploading them, as well as images, onto a shared cloud drive. These notes and images, together with our individual notes and memories, were integral to our retrospective sense-making. It is through the process of collectively reviewing, interpreting, and discussing our experiences as organizers and participants of the workshops that two main themes emerged: feminist collaboration and linearity versus nonlinearity.

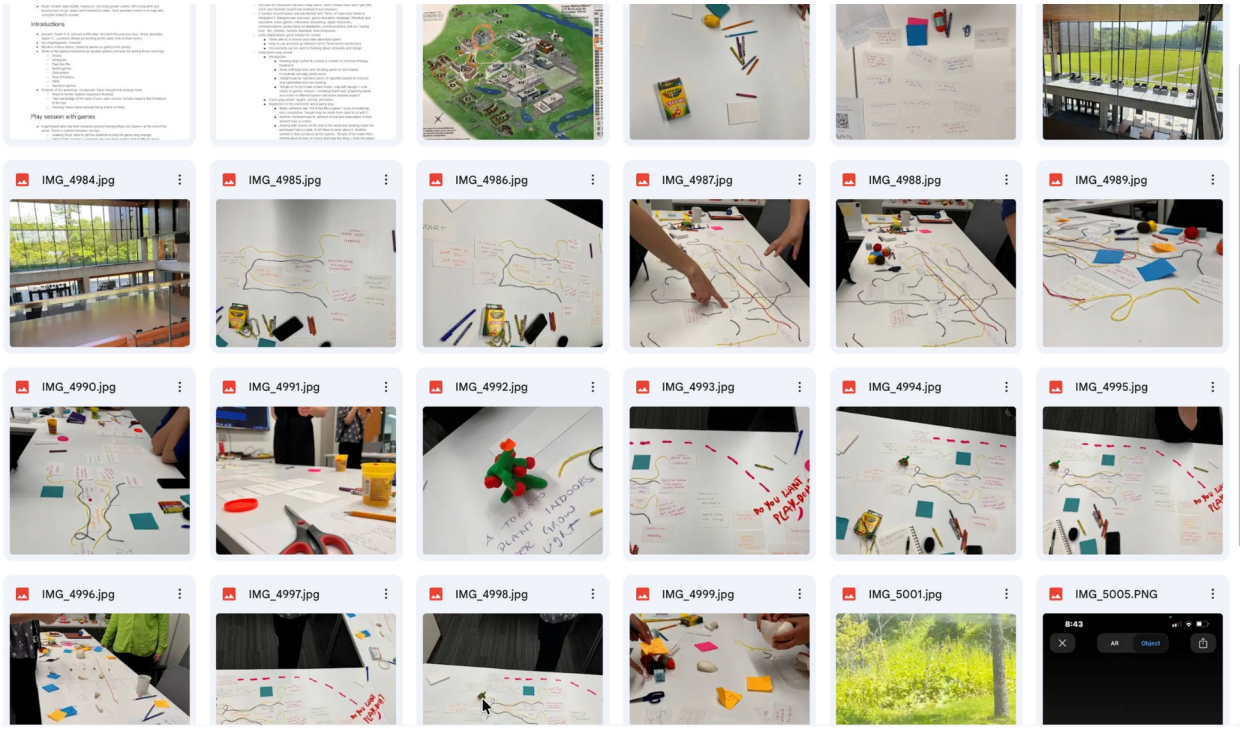

Figure 1: Screenshot of the shared Twine_Jam_Docs Google Drive folder, showing workshop photographs and handwritten notes uploaded by Sarah Choukah following the ICA and CCA sessions, May 2023.

Though each workshop was designed around feminist collaboration, nonlinear possibilities, conference thematics, and Twine, the workshops were also oriented around specific questions that were relevant to each association. In our first workshop with the ICA Games Studies Division, we reimagined roles and boundaries between "players" and "creators" of Twine games. We considered how collaboration could facilitate situated gaming experiences outside of platform economics and imperatives of connectivity, and what unexpected forms of play (including human and more-than-human experience) Twine could facilitate. For CCA, we engaged legacies of feminist collective diary practices and situated Twine and "Twine thought" as an alternative mode for collaboration. Finally, for OTESSA, we proposed to grapple with Anglo-centrism on Twine and in its code, reflecting on experiences teaching Twine in multilingual contexts.

Our focus on play and experimentation carried through the structure of our workshops. More than providing a tutorial explaining the basics and enumerating the ways in which Twine could be used in the classroom or in research, we hoped that participants would begin to imagine how embracing its ethos might unleash new possibilities for their work/play. Unsure of the number of participants that would attend each session as well as their familiarity with the platform, we devised three lively activities that would showcase the nonlinear thinking afforded by Twine without requiring technical know-how. This approach allowed us flexibility in working with participants with varying degrees of

experience with Twine and interests. It also enabled us to continue our learning when participants didn't attend, as was the case for one of the workshops (OTESSA). In this case, the three group members who were going to facilitate this workshop took the time to improvise with shifting the language of conversation to French, as the workshop we had developed for OTESSA was focused on a discussion about language and narratives of Empire and reflecting on our Twine-making and teaching experiences in English and French post-secondary education institutions and in open access virtual contexts. This created an interesting dynamic because two of the three group members were fully bilingual in English and French with French being their mother tongue. While the third group member was also bilingual, English was her mother tongue and language of much greater ease. This flipped the dynamic—as we normally spoke English at all of our meetings and workshops—and led us to reflect on what it means to attempt to speak in a nonlinear way in a language within which one is less at ease. We are interested in further exploring these reflections in the future.

In both the CCA and ICA workshops, the first activity set the stage for our collective endeavour and entailed playing through some inspiring examples, such as *Howling Dogs* (Porpentine 2012), *Queers at the End of the World* (Anthropy 2013), *The Temple of No* (Crows, Crows, Crows 2016), and *Tonight May Be* (Lee-Popham 2021). Participants shared their reflections regarding how these experiences related to gaming and storytelling. For our CCA workshop, this was followed with a thirty-minute tutorial introducing some of the elemental capabilities and magic of the Twine platform: how to create a passage, how to introduce options that link to divergent outcomes, and the rudiments of "what-if" statements, which allow Twine users to do different things depending on their previous experience in the story.

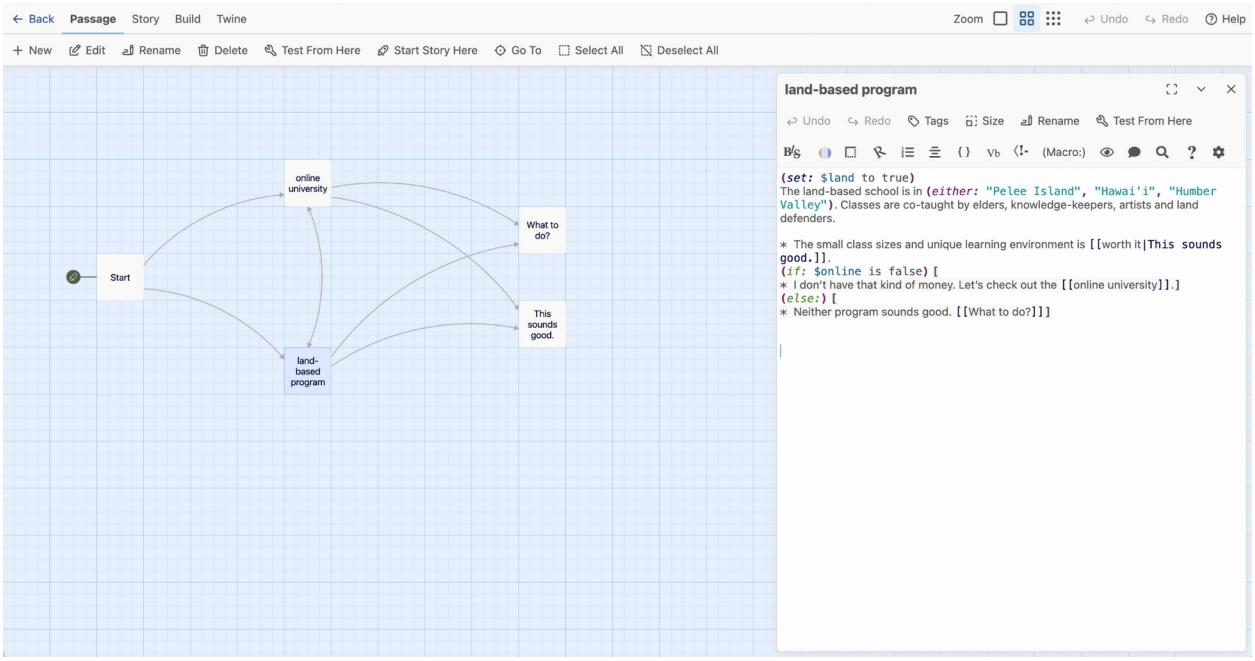

Figure 2: Screenshot of the Twine editor showing a branching narrative structure created during the CCA workshop at Congress 2023. The story map, built around the speculative prompt "What will the university look like in 100 years?," illustrates how participants used passages, links, and conditional logic (if/else statements) to create nonlinear narratives.

With this understanding of what Twine enables, we moved onto the second activity: analog ideation. Attendees were divided into two groups, each with two facilitator-participants, and each asked to play an improvisational game of "what if?" Based on a future-oriented prompt, "what will the university look like in 100 years?" (informed by the conference theme of "Reckoning" in conversation with institutional colonial legacies), a participant offered an initial speculation, beginning with the phrase "what if…." A peer built on this proposition, also using "what if…" as a starting point. And so on for a couple of minutes. From this collaborative narrative-building, each group was then asked to create a Twine-inspired plot using coloured flashcards, Post-Its, markers, and twine (as in thick string, which we included so participants could visually link the flashcards).

Working in an analog format not only eschews the need for technical know-how but also enables more collaborative thinking, with participants alternating between working as a singular unit and being responsible for building distinct pathways. With a draft physically mapped out, each group switched places, decoding the story their counterparts devised, before exchanging feedback by writing on sticky notes and placing them next to the relevant passages. After each group returned to their table, we moved on to the third activity, which we referred to, in jest, as "the curve ball."

On a table at the front of the room, several objects were displayed: seashells, a sprouting tomato plant in a pot of soil, Play-Doh, paper straws, plastic animals and dinosaurs, toy cars, minuscule pencil crayons, a tarot deck, and so on. These were items the group discussed in advance, reflecting what we had on hand at home that could be generative and flow from our own lives and personal interests (including gardening, parenting/children's toys, and foraging). Each team was asked to select one item, before any further instructions were given. Only then did they learn that they would have to find a way to integrate that prop into their creation as a transformative agent, that is, not as a character or a moment in the narrative arc but as a portal offering a new way of engaging with the storyworld they designed. For instance, a group in the first workshop that selected Play-Doh was inspired by its malleability, suggesting the addition of a "god mode" to their creation whereby the player no longer had to make decisions within the scripted options but could mould any thread they desired. During the CCA workshop, a team who also picked the Play-Doh (a crowd favourite) mused about how its smell evoked childhood. Based on that observation, the team introduced options to travel between, among, and along different time-space continuums. In both these cases, and with the other chosen objects as well, the "curve balls" encouraged participants to think well beyond the bounds of what Twine, as a technological fix, offers.

What if… digital play was feminist?

Digital technologies like Twine are paradoxical objects for feminist resistance. Historically "high tech" has been linked to the formation of masculinities, particularly in terms of the dominant discourses, images, and tropes prevailing around computing, identities that have shifted from "geek" to hegemonic with the increasingly lucrative and powerful role of technology in society. From the early days of mainstreaming of "new" technologies, those who worked on computers, networked communications, and the emerging Internet were upheld as paragons of technophilia—emotionally isolated, competitive, rational, and oriented towards control and achievement (Turkle 1984). This entanglement of technological competence and identity is referred to as technicity (Dovey and Kennedy 2006) and has informed the framing of tech subjects ranging from hackers to Silicon Valley visionaries to digital game players and makers as predominantly white, Western men.

If there is inherently a discursive connection made between masculinities and technology, it follows that young women and people of colour have been positioned as reluctant participants in need of coding camps and game-making clubs to recruit them into science, technology, engineering, and mathematics (STEM). Catherine Knight Steele challenges this logic presuming lack, noting "an overemphasis on coding and programming skills accepts mythology about Blackness, womanhood, and technology that does not serve Black women and girls" (Steele 2021, 2). Her work, in line with the research of the likes of Mar Hicks (2017), Laine Nooney (2013), Lisa Nakamura (2011; 2014) and Charlton D. McIlwain (2019), resists common stories told about participation and affective attachments (Ahmed 2004) in histories of technological development, unsticking the common associations and revealing that those often framed as "marginal" in tech have always been impactful if not recognized, central if not valued.

But still, legacies of hegemonic technicities have shaped digital technologies in important ways, informing their design and use (Edwards 2003), from the anthropomorphizing of user interfaces to counter stereotypes of feminine computer-phobia and ineptitude (Lupton 2000) to the racist imaginaries of search algorithms that reveal the deep-seated data discrimination programmed into supposedly neutral technologies (Noble 2018). The prominence of data extraction and exploitation within regimes of surveillance capitalism has provoked reflection on the relationship between digital technologies and histories of colonialism provoked by the framing of data as the "new oil" (Couldry and Mejias 2018). Ruptures with this overarching narrative of appropriation and control can be found in interventions like the Big Data from the South Initiative, where activities to resist and creatively subvert datafication are foregrounded (Milan and Treré 2019).

Our engagements with Twine are aligned with this ethos of reclamation and rupture, paralleling other feminist and decolonizing approaches to ludic technologies that acknowledge the dominance of hypermasculine production practices (Weststar and Legault 2018), spaces of play (Trammell 2023), and representational regimes (Lynch et al. 2016), while also revealing, imagining, and creating alternatives for digital play. Digital games have been in many ways the paradigmatic technology of hegemonic masculinity—oriented towards militaristic violence, command and control, the entrepreneurial self, monitoring and improving one's quantitatively-assessed biopower, consumerism and rampant consumption, the power of the individual, and of course zero-sum, meritocratic competition (Pérez-Latorre and Oliva 2017; Stallabras 1993). In their pervasive use of maps, conquest, and the Other in both mechanics and aesthetics, digital games also commonly rely on the normalization of imperialism and colonialism as motivating narratives (Mukherjee 2016). This goes beyond their representation and designed play experiences—the production context of games is known to be intensively exploitative, exclusionary, and extractivist in terms of both their workforces and environmental costs (Abraham 2022; Cote and Harris 2023). Indeed, Nick Dyer-Witheford and Greig de Peuter characterize digital games as the "exemplary media of empire" (Dyer-Witheford and de Peuter 2009, xxix). However, feminist, queer, and critical race scholarship, as well as the design and activism of historically marginalized communities, has for many years made interventions into this "hegemony of play" (Fron et al. 2007; Harvey 2019). A key artifact in this shift in discourse and practice around digital games is Twine.

Despite not being intended as a tool for game design but as a technology supporting the creation of nonlinear stories (Cox and Klimas 2024), Twine rapidly became synonymous with queer game-making and community formation and drew the attention of scholars for whom the radical democratization and politicized engagement with game development was an important challenge to the hypermasculine, toxic, and exclusionary context of this media form (Harvey 2014). Our work with Twine is indebted to the ways these communities and creators seize the mode of production for ludic creativity and the generosity of the open source community in responding to these uses of the tool. Our work builds on these resistant and generative engagements with Twine by considering the potential for reclamation of ludic technologies for feminist thinking, research-creation, and critical practices related to reckonings. This work doesn't affiliate with the instrumental approaches of "games-based education" and instead aligns with feminist approaches to technology, particularly with the injunction of Sharma and Singh (2022) to approach the question of how the medium is the message from a critical perspective.

What if… storytelling was purposefully nonlinear?

In developing these workshops, we were interested in the ways that nonlinear thinking could be explored through Twine as a tool to generate expansive thinking, engage in collaborative digital scholarship, and craft new meanings. Our orientations to nonlinearity varied across our disciplines. In game studies, nonlinearity is a presumed feature of the ludic form due to the agency of players. In addition, narrative-driven titles (which are often associated with marginalized makers and the use of Twine) have been denigrated within "hardcore" games culture as "not real games" because they eschew rule-driven competitive engagement. This debate, of course, overlooks the ways that platformized digital content is tightly controlled by game developers and publishers, limiting interactivity to only desirable ends, and how noncommercial tools like Twine enable much more open-ended engagements with both playing and making. At the interdisciplinary intersections of gender studies and Canadian history, teleological understandings of time and progress are troubled. In the field of creative writing, the braided essay (which weaves together different "threads" of a story) and other fragmented writing is often referred to when discussing nonlinearity. Yet theorists have suggested that nonlinearity "is part of the process by which language and literature are generated" (Livingston 2021, 271), is "always in operation in the writing process, [and] can also be deliberately enhanced" (Livingston 2021, 267). Across our disciplinary orientations, we were interested in exploring the use of Twine as a tool for otherwise thinking reflective of Black feminist, anti-colonial, and plural forms of futurism and design.

Early on in our development of these workshops, we articulated Twine as a hack of more conventional game development tools. Stemming from the limitations we had encountered as students and instructors of Twine (e.g., limited collaborative opportunities, steeper learning curve for more complex demands), we were interested in hacking the hack that is Twine. This, as we understood it, would involve inviting participants to engage in the nonlinear thinking

that is promoted through Twine without the constraints inherent in the tool. One illustrative moment came when a participant offered the line we use as our opening epigraph. The group treated "parking lot" and "landback" less as endpoints than as generative constraints: a deliberately blunt binary common in nonlinear narrative structures such as Twine's. In contrast, the situated, collaborative workshop experience fostered spontaneous unpackings, complications, and multiplications with Post-Its and twine. Participants treated parking as a narrative and material connector —linking vehicle-dependence and parking fees to questions of access and uneven futures—while also contrasting them with "landback" and asking questions about its potential, future incarnations.

From the "what if" exercise (outlined above), we wanted to provide participants with a strategy to engage in the nonlinear branching thinking that is enabled through Twine. The "what if" exercise was also used by Preda and Matei in their study of using speculative fabulation "to deconstruct the hegemonic temporalities of modernity" (Preda and Matei 2023, 318) with university students. Similar to our approach to inviting in nonlinear thinking, in their study, Preda and Matei "encouraged [students] to create counter-hegemonic representations [and] diverge from the norms and conditions of ordinary life" (Preda and Matei 2023, 325). From this, they suggest that "speculative fabulation is a resource that allows students to approach various contemporary issues and consider alternative solutions to social problems by pondering over what needs to be done in the present" (Preda and Matei 2023, 329). From our workshops, we found three key learnings we offer here.

First, participants in the CCA and ICA sessions developed two different approaches to organizing their stories. One group organized their stories towards what Sarah Choukah (in our discussions after the session) noted as "structure finding," whereby the focus was on developing a more linear structure with a more clear beginning and end. The other group oriented towards a more expansive rhizomatic structure based in what Sarah Choukah (also during our after-session discussions) noted as "story imaginings." Participants had different perspectives of how Twine informed their experience of linearity: One participant indicated that the branching structure of Twine sets up the expectation of what would come next, inspiring a more linear progression through a story, while another reflection from the discussion was that the "what if" activity and subsequent Twine-inspired approach to the analog exercise invited the story to exist outside the traditional constraints of narrative. A participant reflected that these two components, as well as the curve ball addition, resulted in an impression that the storytelling could begin from any moment—unlike the classic Hero's Journey—creating a sense of multimodality and a less rigid adherence to the story being only text-based. Another participant noted that the introduction of the curve ball made the story more linear. We were curious about how, for some, introducing an element of surprise might result in returning to a more linear narrative to attempt to move to "resolution." Another participant reflected on how each decision point opened up many other options, each of which could be further explored. For example, one group in the ICA workshop developed an underwater world and then created branching options that would lead towards assuming the underwater world existed or questioning the possibility of its existence, as well as determining the ease or difficulty of underwater existence. While these choice points may appear as a series of binary options, we would suggest instead that they exist as multidimensional components, in that both components from one decision point (e.g., assuming the underwater world existed and questioning its existence) could engage with both components from another decision point (e.g., underwater existence is easy or underwater existence is difficult), therefore enabling a series of interweaving options and inspiring expansive thinking.

Second, participants developed different ways to interpret each other's stories, which they were required to do without explanation from each other. During our co-creation session, we divided participants into two groups. Groups switched tables part-way through the session and interacted with each other's games. The feedback each group gave the other influenced the outcome of the game. This practice of switching tables disrupted a "god mode" or "god view" of the worlds we built. The approach of either "structure finding" or "story imagining" seemed to inform each group's interpretation of the other's story and the questions they subsequently posed (e.g., some questions were focused on trying to determine where the story began, where others were focused on different possible entry points into the story). Lastly, participants were impacted by each other's stories. In both the CCA and ICA sessions, the story that had been more linear became more rhizomatic and vice versa.

What if … collaboration in Twine was feminist?

Twine itself is a collaborative experience as players interact with the narratives/games authored with choices built in. These narratives/games, which often have autobiographical undertones, evoke a range of sensations and experiences that encourage players to feel along with the authors or their fellow players (though not usually simultaneously). Twine is not a multiplayer game. While reflecting on experiences teaching with Twine, participants discussed emotional responses to games like Anna Anthrophy's *Queers at the End of the World* in which players have ten seconds to choose how they will spend their last moments with the love of their life. Participants with experience teaching Twine and those in our workshops described playing Anthropy's Twine game as a "more lonely experience." Our workshops disrupted the individual experience of playing Twine games and brought the collaborative structure of Twine to the analog world. Analog collaboration put the choices on the table, literally, and participants shaped or developed them through play.

While conceptualizing our playful feminist collaboration, we drew from Long et al.'s (2020) three metaphorical frames: feminist collaboration as reflexive becoming, as proactive improvisation, and as co-learning partnership. Collaborative processes can be part of everyday organizing that resists and/or perpetuates inequality regimes—the interlocked processes and practices that sustain inequalities in organizations. It takes careful consideration to infuse feminist principles into collaborative processes. The conference themes of reckoning and reimagining offered an opportunity to reflect on systemic oppressions, taken-for-granted values, norms, and patterns of relating. Technoculture holds responsibility, or a duty of care, and possibility because it has the potential to expand capacity for responsive attentiveness (Haraway 2011). Inspired by Patricia Piccinini's visual and sculptural art representing "naturaltechnical" worlds—worlds in need of care and response—Donna Haraway asks: "How might a speculatively fabulated SF art object help morph eroded and disowned no-places into flourishing and cared-for places?" (Haraway 2011, 100). Reimagining relational dynamics is part of feminist praxis—including upholding an ethics of care, which adapts to changes, such as individual circumstances, group dynamics, collective tasks, and broader organizational, institutional, and cultural changes. Rather than aiming for a utopic vision of harmonious relating, Long et al. suggest that feminist collaborators attune to tensions and negotiations in the collaborative process (Long et al. 2020, 490). Attuning to tensions makes the effort of collaboration evident as well as negotiations of power, voice, and identities.

Tending to tensions in the collaborative process requires reflexivity. Long et al. (2020) explain reflexive becoming as a process whereby collaboration evolves and demands individual and collective reflexivity to uphold a feminist stance. Reflecting throughout collaboration encourages us to think about the ways we impact each other's participation, exclusion, and agentic expression. Throughout the duration of our collaboration, we have held regular virtual chats and maintained email communication. We have also met to debrief and reflect on the workshops. Our collaboration has been digitally mediated, relying on shared access to cloud drives, the use of word processors to co-write, and video and instant messaging communication platforms.

According to Long et al. (2020), feminist collaboration is proactive improvisation because it is constant creative work, it is shaped by time and access to resources, and it requires everyday acts of transformation within contextual constraints. The "what if" exercise is how we built worlds together in a short timeframe. But we also improvised as workshop organizers, notetakers, and participants. Some of us moved from one role to the other. On our last day of workshops, one of us was ill and unable to attend. Those who could attend the last workshop arrived to find no participants for the workshop.

Our collaboration as a co-learning partnership has a longer history and is situated in the aims of the FDMRC. We have been intentional about fostering communities of practice around feminist digital methods and organizing events that formally and informally facilitate learning together, from each other, and in partnership. Long et al. (2020) write that feminist collaboration is a co-learning partnership when the collaboration values connections, ethics of care, and equity. It also centres a sense of solidarity. In our case, solidarity is informed by our interests in FDM, Twine, feminist anticolonial speculative futurity, and feminist play. We also demonstrate care for one another throughout our collaborations by carpooling; sharing food and drinks at workshops; meeting up in advance of our workshops to walk and

talk; running each other's errands when time allows and cancelling unnecessary errands when time requires; taking over when one of us gets sick or has an emergency; and supporting the amount one can contribute and each other's boundaries.

Our collaborative process is layered and characterized by expansion and contraction. It is layered in the work of conceptualizing the workshop, its format, and in our intention to act as players in our gameplaying and participants in our workshops. Our collaborative process involves expansion and retraction as we navigate possibilities and home in on how those possibilities can be practically applied. As we prepared for our workshops, we noticed different behaviours among us as we shifted from more expansive attitudes to practicality and maintaining sustainability. Sometimes, contraction triggered intense feelings as possibilities closed and choices became more limited. Expansion and contraction was rapid in the workshops due to the time constraints. Our emotional reactions were informed by the so-called "post-pandemic" context: this was the first in-person Congress since the COVID-19 pandemic and many people were navigating grief while interacting in person for the first time.

Laughter, jokes, and humour facilitated our play as did our use of shared cultural references. Other popular SF, like Gene Roddenberry's *Star Trek*, offered ideas for our own worldbuilding. Invoking *Star Trek* in this setting was less about fandom than about reframing familiar franchise tropes into collaborative prompts—shifting from viewership to participatory worlding. In one exchange, "Beam me up Scottie" surfaced as a joke about escape, only to be met later with the counter-line,"Not today Scottie"—a small performative refusal that kept the group with the difficulty of imagining otherwise, rather than narrating a clean exit. Positive and nostalgic associations with the materials we used, such as Play-Doh and tiny colouring pencils, also facilitated our play. Holding space for our emotional expressions and experiences of play was important, though we did not coddle. As topics like death, the carceral, anti-Black and anti-Indigenous realities underlying utopian visions under settler colonialism, and the effects of climate change came up, the relationship between creation and destruction became evident (Sicart 2014).

We were not only interested in human experiences of Twine. We explored the possibility that Twine can facilitate nontextual, embodied, and more-than-human responses and/or experiences. In her speculative exploration of the significance for thinking, knowing, and living in more than human worlds, María Puig de la Bellacasa (2017) reframes care as a force distributed across multiplicities of agencies and materials, including the more-than-human. Puig de la Bellacasa differentiates between "thinking with care" and "thinking for." Whereas "thinking with care" acknowledges relationality on a large scale encompassing the human and more-than-human, "thinking for" reflects the risks of fetishization and appropriation when humans attempt to think and act on behalf of others, including more-than-humans. Puig de la Bellacasa argues that an ethical reorganization of human-nonhuman relations is vital, but what this means in terms of caring obligations cannot be imagined once and for all (Puig de la Bellacasa 2017, 24). It is a practice to attend to these obligations consistently and adapt as needed. We see speculative feminist game-playing as part of that ongoing process of tuning in to obligations and adapting as needed.

The tension of "thinking with care" and "thinking for" is evident in our attempts to integrate the more-than-human world and experience into our play. During the CCA workshop, as we played our "what if?" game, one participant offered the question: "What if we develop a universal translator technology that can communicate with the more-than-human world?" The query inspired the group to think about what that would mean for our most immediate nonhuman relationships with plants and animals we care for. Participants quickly brought the universal translator down from sci-fi abstraction into the everyday: "I wake up and put my universal translator on." The "what if" then turned noisy and messy—"My dog won't shut up"; "My dog ate my translator"—a playful reminder that translation is not a neutral device but rather a relational practice prone to breakdown and requiring care. In Deborah Bird Rose's terms quoted by Haraway (2011), this breakdown kept us in "responsive attentiveness" to more-than-human agency: technoscientific devices might announce new worlds but rather than presenting themselves as seamless fixes, those worlds arrive through stubborn, messy, and noisy processes. Following the introduction of the "curve ball," each group picked a plastic toy—one representing a turtle and one representing a snowy owl. This component of the workshop inspired questions about difference, embodiment, and consciousness as we considered how to meaningfully integrate a turtle's experience and a snowy owl's experience.

What if … we didn't have to conclude?

After the workshops, we met regularly to develop a plan for, and then write, this article. During these meetings, it was common that one or more of us would comment on the experience of working together—appreciating feeling supported in our collaboration, in bringing our different interests and expertise, and in being able to step in and step back, in ways that felt unique and distinctive. Different group members suggested future opportunities for ongoing collaboration, including submitting proposals to future conferences and for a book project. Our experiences exploring the possibilities of Twine for critical thinking and alternative future ideation also prompted reflections on how we could adapt the workshops and their teachings to the classroom setting. While not discussed explicitly in this article, Twine, with its emphasis on nonlinearity, is a rich pedagogical tool for encouraging students to think expansively and imaginatively. We all expressed ongoing excitement for collaboration. Long et al. note that it "is important to keep the principles of feminist collaboration specific enough to be actionable yet vague enough for feminist collaboration to be agile" (Long et al. 2020, 496). Our process of writing this article constituted an improvisational yet directed process. This analysis is itself an act of retrospective sense-making, written after the fact and shaped by our interpretive commitments to feminist methodologies. In returning to these moments with the benefit of temporal distance, we were able to attend to the ways that meaning is produced not only in experience but also enacted through its later narration, memory, and analysis.

When we got to writing this conclusion, we couldn't help but ask: What if we didn't have to conclude? What if feminist collaboration entails an openness to future nonlinear collaboration? By this, we wonder how the nonlinear thinking that is enabled by Twine might inspire us to also consider ways our collaboration could be approached in expansive, nonlinear ways through which we could iteratively craft new meaning for working together. As mentioned above, this too seems to draw from Haraway's (2021) understanding of speculative cat's cradle through recognizing collaboration as a way to "pass patterns back and forth, give and receive, hold the unasked-for-pattern in our hands," while also finding "something that works, something consequential and maybe even beautiful, that wasn't there before of relaying connections that matter, of telling stories in hand upon hand, digit upon digit, attachment site upon attachment site, to craft conditions for flourishing" (Haraway 2021, 10). As we pondered possible futures that centre what is life-giving, sustaining, and precious and imagined feminist ethics for that future, Haraway's reflection on real reconciliation resonates. Such real reconciliation depends on descendents of settler worlds letting go of particular historical narratives that position us as saviors and learning to live in technoculture(s) that face ancestors of many kinds and take responsibility for those who come after.

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