

Conclusion

Forever Twine

Twine has been around for more than a decade now. There have been two formal releases of the core software, coordinated with four major story formats. Based on download statistics, Twine has thousands of users around the world, clustered largely in game development, academia, and entertainment (Klimas). Major media outlets have noticed the role of *Depression Quest* in Gamergate (see Hudson) and Charlie Brooker’s use of Twine for the “Bandersnatch” treatment. Something looking suspiciously like a Twine game appeared in an episode of Cartoon Network’s *Adventure Time* in 2016 (Han and Ito). However, as we have previously noted, the best measure of Twine’s cultural impact may be *Videogames for Humans*, the massive compendium of Twine writers playing and commenting on one another’s games that we have already mentioned (merritt k). We could also point to the increasing prevalence of Twine pieces in portfolios of aspiring game designers and the platform’s formal relationship with the IFTE, founded to assure continuity in the tools and institutions of the text-based game community (Interactive Fiction Technology Foundation).

These developments give reason to look forward another ten years or more. The idea of doing creative things with hypertext links and related scripting seems an indelible part of digital culture. Twine supplies

an important tool for this work, so we imagine a future Twine, even a forever Twine. This book has concentrated notably on works appearing between (roughly) 2012 and 2018, which we might consider a heyday or first harvest. We carefully avoid the term *golden age*, which has a way of making those tagged with it feel antique before their time. For true believers, at least, Twine is timeless. We feel the work will go on, in and out of game, art, and literary worlds. Twine or Twine-like efforts a decade hence may be notably different from the games and fictions we have profiled. In ten years, works in the Twine line could be mainly auditory (see the next section), or graphical, or generally used for psychotherapy, or written exclusively by machines.

Before dreaming any further, however, we need to check our perspective. Each author of this book has several decades of intellectual, artistic, and personal investments in digital storytelling across multiple platforms. Where Twine is concerned, we teach with it and we make things with it. Lately, we may have begun to think with it. We also have our own oblique connections to the circumstances of Twine's creation: Anastasia explored theirs in chapter T-2; I will say more about mine at the end of this chapter. As writers of a book meant to promote Twine's use and appreciation, we have an obvious bias.

If You Can Read This . . .

Consider a more objective view. In 2017, the artist and critic John Cayley, a field leader in digital literary arts, called for a change of direction. In an article called "Aurature at the End(s) of Electronic Literature," he proposes a fundamental move from visible text to sound—the aural delivery of words spoken or synthesized using currently emerging home entertainment platforms, so-called smart speakers like Amazon's Echo (Cayley, "Aurature"). Paradigm shifts are inherently rivalrous. When you are trying to open a new path, it's necessary to point out the errors of other ways. Accordingly, Cayley deprecates several electronic writing practices, including some with roots in his own academic program. When he comes to Twine, he is more dubious than dismissive, though he raises serious questions: "In

the case of expressive hypertext—with choose-your-own-adventure gaming capabilities—we can now point to Twine as a platform still gaining significant popularity. But will it ever end up supporting Twine-writers and designers commercially, or as prominent literary practitioners?” (Cayley, “Aurature”).

Cayley acknowledges Twine’s popularity, and he notes Twine’s attachment to game culture. Beyond this, he seems unimpressed, though that sentiment is understandable if one knows the history. The reference to “expressive hypertext” points back to earlier days of Cayley’s academic program, before his arrival at Brown University, when figures like Robert Coover, George P. Landow, and the computer scientist Andries Van Dam made that university’s writing program a center of literary and scholarly hypertext. This project flourished from the early 1980s to the mid-1990s, but its success was limited at best. Alice Bell’s generally sympathetic account of hypertext fiction concedes that such works were rarely read outside of college courses (Bell 166). Seeing in Twine a hypertext revival, Cayley reasonably wonders if this platform will suffer the same fate that befell earlier systems, such as Brown’s *Intermedia* and Eastgate’s *Storyspace*. However, his uncertainty about commercial viability or popularity is tied to a deeper objection on aesthetic grounds, a problem Cayley sees in other forms of electronic writing as well. He calls this “the challenge to reading”:

Formal bewilderment discourages reading and readers. Reading is a learned practice; it is not innate to the human animal. Asking readers to learn new forms is asking them to extend their learning rather than immediately offering them aesthetic experience. Of course, some formally innovative artifacts will be of a quality or importance that necessitates and rewards extra learning and effort. Literary culture moves on. But how will readers pick and choose amongst forms when every artifact is formally distinct if not entirely outside of any pre-existing formal categories? And how are they to discover any quality or importance for the language of the work if formal bewilderment makes it difficult or impossible for them to read? (Cayley, “Aurature”)

Twine works are not the only subject of this critique. Plenty of baffling, often bafflingly beautiful work exists in other systems and contexts. Cayley names no names, but we could cite a few examples: Mez Breeze's linguistically mutant m[ez]ang.elle (see Raley), Nick Montfort and Stephanie Strickland's oceanically vast *Sea and Spar Between* (Montfort and Strickland), Jason Nelson's trippily fractal *Sydney's Siberia* (Nelson, *Sydney's Siberia*). Cayley does mention *Pry*, the groundbreaking text/video app for Apple iOS, one of whose developers came from Brown (Cannizarro and Gorman). Though he concedes the brilliance of this work, he worries that it, too, is a one-off. Like the surrealist game levels of Wreden's *Coda*, these projects push against any number of common expectations about language and text. Most are either singular experiments or self-contained series. They invent new categories rather than fall in with old ones, partly in response to an explosion of technical possibility, possibly also because tradition, canon, and even genre are to some extent tainted by toxic ideas of hegemony.

Twine works bring new transgressions and their own challenges to reading. We have just been looking at Anthropy's *Queers in Love at the End of the World*, which deliberately makes conventional reading extremely difficult. The work sabotages its own hypertextuality, tantalizing players with clusters of links they can barely register, let alone explore, before final erasure. This is undeniably a challenge to reading—though as we and others have argued, its intentional disruptions deliver an experience that works toward cultural critique. Though *Queers in Love* is an extreme instance, it nonetheless shows how Twine works may answer Cayley's challenges.

Conceived as textual games, Twine works are far less formally bewildering than other forms of digital writing, such as “expressive hypertexts.” One last comparison between *Queers in Love* and its paleozoic ancestor *Hegirascope* may be helpful here. In an evocation of early web browsing, the older work jumps across many narrative lines, constantly decentering the reader's attention. Perhaps because she has grown up in a web-saturated culture, Anthropy feels no need to mimic this diffusion. She keeps her player focused on variations of a single scenario even as she diabolically contracts the time frame. The result is still

narratively disruptive, but it confronts the player with fragments of a single encounter, not pieces of a world.¹ Crucially, this difference can be linked to the influence of game culture. *Queers in Love* was built during a game jam whose theme is circulation or sharing—*ludum dare*, to give (the world) a game. For all its tricky difficulty, Anthropy's work is still intended for a certain kind of play—subversive and self-canceling, perhaps, but play nonetheless.

In embracing games as an aesthetic framework, Twine makers take up a coherent cultural identity, even as they resist and transform it. Twine games may split off from other forms of game culture, but they belong to increasingly well-defined alternative communities centered on independent games, narrative games, and interactive fictions. These domains include “pre-existing formal categories” that support critical judgment. In chapter T-3, we cited Short's revealing first response to *With Those We Love Alive*. That review was written as part of the annual Interactive Fiction Competition, a tradition of critical reception and recognition with more than thirty years of history. Interactive fiction, which either contains or overlaps with Twine work, is in fact the most critically informed type of electronic writing.

However, would recognition by Short, Montfort, Andrew Plotkin, Aaron Reed, or some other authority from the interactive fiction world make someone, in Cayley's terms, a “prominent literary practitioner?” Much depends on the way we define each item of this phrase.

Concerning prominence or recognition, Bell argues that hypertext fiction and other digital literary practices must break out of “niche” status (Bell 92). It might be objected that most kinds of literature—and these days, even most forms of popular entertainment—fall into niches of various sizes (Moulthrop). But some niches are more accessible to nonmembers than others. Fiction writers outside of *the genres* (crime, thriller, science fiction, fantasy, romance, Westerns) tend to do readings at bookstores in cities and suburbs. At the peak of celebrity, we see them on TV talk shows with large viewerships. Genre writers are more likely

1 Among Twine works that negotiate this problem somewhat differently, we should mention Dan Weber's *A Kiss*, which has one of the more compelling formal maps included in Twine stories: <http://logolalia.com/hypertexts/hypertextscreecap.gif>.

to appear at community-focused conventions (cons) that do not attract what is quaintly called a general audience.²

Likewise, makers of Twine games show up largely at game jams and conferences, either industry-oriented or academic. A writer can certainly be “prominent” in these circles—known and respected by a few hundred people, many of them other Twine writers. There are stirrings of wider recognition. The website for the 2015 launch of *The Late Show with Stephen Colbert* featured a Twine game, and there are the *Adventure Time* and *Black Mirror* connections. Porpentine has had a game commissioned by the Museum of Contemporary Art in Chicago, and her games have been shown in other museums. Anthropy has been interviewed about her work on National Public Radio. If prominence requires being known to millions, through Twitter, television, or some other megamedium, the prize remains elusive—but is this a problem?

As we have already hinted, the answer to that question is implicated in how we understand the term *literary*. In general, thanks to the efforts of people like N. K. Hayles, Dene Grigar, Scott Rettberg, and Cayley himself, academia seems more ready to accept electronic writing now than it was in the 1990s. There were cracks in the wall of resistance even then. Two early hypertext fictions, Joyce’s *afternoon* and J. Y. Douglas’s *I Have Said Nothing*, were included in W. W. Norton’s *Postmodern American Fiction* anthology (Geyh, Leebron, and Levy). ELO has been a presence at the annual MLA conferences for years and in 2018 was formally recognized as an affiliated organization. Marjorie Perloff, a defining figure in modern poetics, has written about the significance of digital work in contemporary poetry (Perloff). Hayles, among the first academic critics to recognize electronic literature as a continuing project, sees it as part of a reformist expansion of literary tradition (Hayles 4–5). Rettberg, one of ELO’s first founders, suggests a more progressive view: “Those waiting for the first ‘#1 bestseller’ of electronic literature are largely missing the point: electronic literature is not about

2 Gen Con, the venerable tabletop gaming convention, had attendance of more than seventy thousand in 2019; San Diego Comic-Con regularly draws twice that number. Their audiences are both large and diverse by several measures. The “general audience” seems increasingly mythical.

replacing print literary culture, it is instead about extending storytelling and poetics to the contemporary digital environment and creating literary experiences specific to this cultural moment. Electronic literature is experimental literature that generates productive tests of particular admixtures of literature and technology, but it is also fundamentally about a sense of play and a sense of wonder” (Rettberg 203).

Despite these rapprochements, academic creative writing programs still generally identify with poetry, literary nonfiction, and the unmarked genre of nongenre fiction. Twine work, and game culture generally, may be recognized as a parallel or related activity, but it is not usually part of the curriculum.³ We have already expressed our ambivalence about Twine and literary tradition in chapters T-3 and T-4. Twine work can connect to established forms and practices, but it may just as genuinely go its own way. Perhaps, as Rettberg says, we should simply celebrate experiment and play.

In chapter T-4, we explored the influence in Twine work of alternative, anti-elite aesthetics: retro-stylish kitsch and fan-based camp. Twine carries forward an unruly, experimental impulse last seen in the first decade of the World Wide Web. This agenda has no strong regard for long-standing tradition and may in fact subvert it—recall Xalavier Nelson’s first take on *legacy*, noted in chapter T-3. To some extent, the queer-gaming insurgency explored in chapters T-4 and T-5 reflects a similar attitude. Given the tensions between Twine’s outsider ethos and traditional culture, *literary* may not be the identity most Twine writers aim for. A certain social distance may be good for both sides. In the famous words of Marx, “I DON’T WANT TO BELONG TO ANY CLUB THAT WILL ACCEPT ME AS A MEMBER” (Marx 321).

Cayley’s third term is *practitioners*. Writers are by definition practitioners, but Twine writers (or creators, designers, developers) use practices that differ markedly from the ones Cayley advocates. In at least its first

3 There are always exceptions. In 2018, Christopher Macalester Williams received his doctorate in English with a concentration in creative writing from the University of Wisconsin–Milwaukee. His dissertation included an epic poem called *The Wrong Sky*, with both a conventional print and a Twine component. Dr. Williams is now an assistant professor teaching literature and creative writing.

stages, his “aurature” involves the development of “skills” for Amazon’s digital assistant, Alexa. An Alexa skill is a software application the system can run in the background or in response to a user’s spoken request (“Alexa, ask the listeners about . . .”). Cayley’s demonstration project for aurature, called *The Listeners*, uses an impressive range of design and production techniques, including interactive sequencing and processing of sound (Cayley, “*The Listeners*”). Twine entails a much smaller and less sophisticated range of activities: simple hyper-text linking, textual substitution, maybe some work with substitution grammars, all usually intended for screen display—though as we saw in chapter P-4, other media types can be used as well. Building a Twine game generally presents a lower technical barrier to entry than developing an Alexa skill.

Most important, Twine is an open-source application supported by a noncommercial community. While the programming tools used to develop an Alexa skill are not proprietary, the considerable infrastructure on which it depends—the system of digital monitoring and response behind the Echo device—is intellectual property held by one of the wealthiest corporations on the planet. This brings us to the most difficult of Cayley’s hard questions: Can Twine sustain its creative community commercially or economically?

Twine and Hard Times

Before taking up this question, some important concessions are in order. The invidious distinction between proprietary and open-source software needs at least partial correction. Nobody loves a Puritan, and we do not claim or wish to be software saints. In art and everyday life, we use proprietary systems. The world is big enough for both commercial and noncommercial approaches to art. There are good reasons to criticize Amazon’s desire to place live microphones in our living rooms, but the disapproval of academics will not make them go away. If we believe in technological realpolitik, Cayley’s call for change is important. Taken more sympathetically, aurature could allow artists to infiltrate Amazon’s collective unconscious. (Alexa, delete the last record.)

Further, we admit that Cayley's economic skepticism about Twine is hard to rebut. Like hypertext fictions before them, most Twine works circulate in the public domain and carry the curse of a gift economy. Once the public comes to expect free access to art or entertainment, it is exceptionally hard to return to a cash basis. Paywalls infamously fail. Many of us do not believe in them in the first place, though it is easier for tenured academics to aspire to such virtue and feel an obligation to share freely. Those closer to the rope-end of precarity may do what Anthropy and an increasing number of Twine writers do: include a link inviting financial support on the title pages of their projects. Those who find that work important, especially in teaching, need to give as generously as possible. Patreon and related subscription schemes are another expedient, though Klimas recently disclosed that his income from this channel amounts to less than the minimum wage in his home state (Klimas).

Could these dismal conditions change? If the "Bandersnatch" possibility ever yields something more than a mirage, crossovers with emerging markets could be facilitated by IFTF, which gives common identity and purpose to those interested in parser games (especially on the Inform platform), Twine work, and other branching narrative systems. IFTF is not primarily academic and welcomes interest from the entertainment industries. While waiting for other opportunities, collaborations among the current interactive fiction emphases might be equally important. Twine/Inform hybrids could be intriguing, along with various ventures to connect Twine and other platforms to the Unity game system, particularly with an eye to mobile applications. In her software development role at Spirit AI, Short continues to explore the integration of artificial intelligence with interactive narrative. Poet and system designer Daniel C. Howe recently joined Tender Claws, the independent software studio that created *Pry*. Howe's new system, *Tendar*, like Spirit's *Ally*, focuses on algorithmically generated interaction, with important implications across the field of interactive fiction. IFTF could provide a crucial framework for the integration of developments like these.

Visions of possibility aside, however, economic prospects for Twine, in both infrastructure and artistic practice, remain deeply

uncertain—yet of what can this not be said? Independent game development is as tenuous as any garage-based art form. Developers may find refuge in academia, more likely in game or media studies programs than in older departments, but the state of higher education throughout the developed world is parlous, with humanities programs especially at risk. At this writing, the stresses imposed by the coronavirus pandemic, both on enrollments and state budgets, raise this risk to new levels.

Culture-war politics are implicated in this instability, especially when it comes to public institutions, and attacks on academics involved in game studies have been a part of Gamergate and the larger alt-right movement of the US in particular (see Chess and Shaw). But the root of the trouble is the continuing fragility of postindustrial economies. This insecurity may at first seem paradoxical. Twine's first decade coincided with the longest economic expansion in the history of the US. That party may now be over, and the benefits of the expansion were notoriously concentrated in any case. If the current disaster exposes fundamental weakness like the banking crisis of 2008—say, in student loans, the retirement system, or international trade—we may face a long and devastating economic depression.

Long ago, at the beginning of the last boom before this one, Neal Stephenson published a novel of speculative fiction featuring a global virtual-reality system with a social center called “the Street.” (The GeoCities of old may have been among his inspirations.) Being essentially a realist, Stephenson salts his Tomorrowland with some sobering observations: “In the real world-planet Earth, Reality, there are somewhere between six and ten billion people. At any given time, most of them are making mud bricks or field-stripping their AK-47s. Perhaps a billion of them have enough money to own a computer; these people have more money than all of the others put together. Of these billion potential computer owners, maybe a quarter of them actually bother to own computers, and a quarter of these have machines that are powerful enough to handle the Street protocol” (Stephenson 24–25).

It is interesting to reread this passage in the 2020s. Stephenson's informed guess about world population holds up, though the explosion of smartphones has blown out his forecast of a billion computer

owners by a factor of three. More salient is the allusion to the have-nots, those folks with the bricks and assault weapons. In its day, the remark registered, no doubt cynically, the economic inequalities that accompanied early phases of the information revolution. There were strong concerns about a so-called digital divide. Today, we are more concerned with wealth gaps. “These people have more money than all of the others put together” remains a true statement, but the size of the apex class has greatly contracted. Also, the folks with the AK-47s and AR-15s are no longer in mud-brick hinterlands but in our state capitols and our nondigital streets. At this writing, some of those streets are patrolled by National Guard units in armored vehicles.

Instead of Stephenson’s *Metaverse and Street*, we have Facebook, Twitter, Instagram, and other stretches of the social media hellscape. The world those forces engender may be very like the neoliberal inferno described in *Snow Crash*, though it is hard now to imagine anything like the entrepreneurial happy ending Stephenson gives that book. That was another century. In this one, we face not only economic instability but the subversion of democracies, driven in the first instance by racists and gangsters and exacerbated in some measure by refugee flows and, most recently, by a worldwide biothreat. How long, it must be asked, before we’re no longer the people with computers but the ones with the rifles and wall-building bricks?

It’s not just institutions of popular art and education that are imperiled—the entire civilization seems palpably at risk. (These words, first written before the pandemic, seem even more appropriate in 2021.) In such a dire context, why does the future of Twine matter? True, the social martyrdom of a Twine writer, Zoë Quinn, was the precipitating event for a battle in the culture wars that laid down the pattern for many to come (Warzel; see also LaFrance). Twine is implicated in a critical moment that goes far beyond game culture, but since that moment counts as a genuine crisis, with outcomes that may include the end of the world as we know it, we need to justify our perverse interest in computerized games and clever ways to tell stories.

Can Twine save our world? No way! However, here is a quick list of other things that offer no immediate and total remedy:

mumblecore
 crowdsourcing
 ukuleles
 food porn
 live streaming
 Lin-Manuel Miranda
 polar bears
 psilocybin
 quantum gravity
 Donna Haraway
 the flightless cormorant
 life on Mars (whatever that means to you)
 the Five Virtues
 slavery reparations
 universal basic income
 petting cats

This list, which takes off from the “litanies” of Bruno Latour and Ian Bogost, is unordered and eminently debatable (Bogost 38). Some of its items might seem potentially redemptive, depending on one’s understanding of the world’s problems. Many will not. The point of this list, like all lists, is to assert totality over singularity. The list contains no answer; the list is the answer. Which is to say, as Anthropy teaches, the best way to stave off the moment when everything is wiped away is to make the case for everything, almost. No saviors, no panaceas, but many things may be helpful in some fashion. Let us consider some ways in which a world with Twine in it is preferable to one without. In an epitome of this book itself, we offer three arguments: conceptual, practical, and finally personal.

Maps and Algorithms

Plato and McKenzie Wark had their caves. The cultural critic Fredric Jameson found allegory in a different sort of cavern, the lobby of the Westin Bonaventure Hotel in Los Angeles, circa 1984. Many who visited

grand hotels in the 1980s had similar experiences of disorientation and procedural uncertainty—*where do you suppose they've put the front desk in this one?* Jameson laid out the full implications of this experience, which was always more than a complication of check-in protocol. As Plato's cave allegorizes the world of phenomena, the Westin lobby brings home the contours of late capitalism:

This latest mutation in space—postmodern hyperspace—has finally succeeded in transcending the capacities of the individual human body to locate itself, to organize its immediate surroundings perceptually, and cognitively to map its position in a mappable external world. It may now be suggested that this alarming disjunction point between the body and its built environment—which is to the initial bewilderment of the older modernism as the velocities of spacecraft to those of the automobile—can itself stand as the symbol and analogon of that even sharper dilemma which is the incapacity of our minds, at least at present, to map the great global multinational and decentered communicational network in which we find ourselves caught as individual subjects. (Jameson 39)

Not knowing where to check in is a signature of postmodern experience, an effect produced by spaces, real or hyperreal, that defy understanding. Never mind hotels: think of the “decentered communicational network”—these days, we call this thing the web, or the Twitterverse, or as advertising types say with ominous familiarity, *social*. In response to mutating hyperspace, Jameson calls for “an aesthetic of cognitive mapping” (Jameson 44). That project has many moving parts, but game culture is clearly one of them. Wark's gamer theory, exposing the allegories of power behind algorithm, makes an obvious contribution. The same might be said for Galloway's insight that playing *Civilization III* teaches us how that game's algorithms intersect historical understanding (Galloway 92). We have already noticed Burden and Gouglas's observation that *Portal* exemplifies the making of art from “algorithmic experience” (Burden and Gouglas).

As spatialized occasions for narrative, games literally involve cognitive mapping. “Thinking with portals,” as Burden and Gouglas explain,

deconstructs Euclidean geometry as well as the conventional, rectilinear design of game levels. That operational geometry is also a key subject in *Beginner's Guide*, where Davey and Coda struggle, in their curiously passive-aggressive way, over the need for mazes to have solutions. As Wreden's work demonstrates, there is much more at stake in this contest than the pragmatics of level design. Coda's prisons are as much existential as architectural. They are "analogons," to borrow Jameson's word, of Coda's dubious desire for privacy and interiority. This is where the cognitive part of the mapping project comes in.

Though many decades have elapsed since its discovery, we still occupy something like the "hyperspace" Jameson named. Gameplay illuminates the complexity and irrationality of that space. Games can also bring to consciousness several features of cybernetic infrastructure, the reliance of our virtual environments on algorithms and logical transactions. Through the mechanisms of player death and regeneration, games bring home the power of iteration or cyclic repetition, showing us in experiential terms the form of software loops. By incorporating randomized behavior, games make us aware of stochastic outcomes, predictable but uncertain. By presenting complicated simulations involving multiple agents, games demonstrate the dependency of elements in a system and the way such dependencies can lead to emergent or unforeseen consequences. Above all, computer games model contingency, the ability of situations to evolve differently over multiple encounters. They reveal a world of complex, systematic, but unpredictable possibility.

Jameson believed an aesthetic of cognitive mapping would be essential to politics in the twenty-first century. In order to address injustice, oppression, and ignorance, we need to understand, in the deep way art makes possible, the baffling structures of a world that is too large, too fast, and too intricately detailed for ordinary human witness. To put this much faith in imagination involves a huge dose of utopian chutzpah, but we might venture some hypotheses anyway. Perhaps a generation of gamers will be less inclined to call for regime change in regions traumatized by imperialism; or route tank trains full of volatile hydrocarbons through major population centers; or mine the tar sands that fill the bomb cars in the first place; or otherwise deny the fragility

of our critically damaged ecosystem; or fail to grasp that, ironically, iteration only applies in software, so we can't reboot the West and replay from 1955 or 1820.

Coming to Code

Maybe, just maybe, playing and making computer games can help us map the catastrophe, jam the machines, hijack the bus of doom before everything is wiped away. The help in question may be small—more in the way of ukuleles than reparations—but it is something we can articulate. The essayist Joan Didion was once asked to write on the abstract subject of morality but swerved away, declaring, “My mind veers inflexibly toward the particular” (Didion 160). We follow her mental taillights. Our conceptual/political argument was framed broadly to take in a large swathe of game culture. Twine and its productions belong to that domain but in a very peculiar way. Multimedia extensions aside, Twine is fundamentally a text technology. Like Inform, TADS, and other parser-driven platforms, Twine draws on the considerable power of the written word to evoke and manage playable spaces. We can make a second, more pragmatic case for the importance of Twine, along with other forms of interactive fiction, based on its engagement with writing.

Interactive fiction is connective tissue, a ligament anchoring the skeleton of language and literature to the musculature of computing. (Flip those anatomical metaphors if you wish.) We invoke the living body, since that is what culture feels like to us, but we could also have gone to geology, thinking of stratified bands in sediments and the interlayers between them. That metaphor brings the advantage of history, which is important here. As another major critic, Alan Liu, has argued, a major task of humanist work in this century is reassertion of cultural memory in the face of amnesiac market forces (Liu 72). Twine and its interactive fiction companions are helpful in this regard, connecting practices from the precomputer world to those that have evolved more recently. It is probably no coincidence that Jay David Bolter, an important early advocate of hypertext, and

Short, perhaps our greatest writer of interactive fiction, both started as classicists.

After its very early days, game development has followed the organizational scheme of cinema: production involves fairly large groups overseen by a lead designer. This is necessary when the work involves many specialized skills, such as AI programming, 3-D modeling, motion capture, interface design, sound and voice production, and so on. Because they do not take the exit ramp to graphics but stay on the old textual blacktop, interactive fictions and Twine games especially require no such division of labor. Most of the Twine games we have discussed in this book are the work of one or two people. As Anthropy says in her manifesto for the independent game movement, *Rise of the Video Game Zinesters*, text-based and simpler graphical platforms allow artists to express radically personal visions (Anthropy, *Rise* 18–19). Independent game creation harkens back, as we have said, to an earlier moment of digital technology, when imaginations were less constrained by mainstream expectations and corporate economies. Solo and small-group work is not inherently virtuous, of course. For every Anthropy or D. Squinkifer, there may be many versions of Wreden's Coda, pursuing visions that will never connect with a wider audience. By the same token, large-scale corporate teams can make thoughtful and genre-redefining games, from *Katamari Damacy* and *Portal* to *Legend of Zelda: Breath of the Wild*, *Animal Crossing*, and *Death Stranding*. Meanwhile, there is a sweet spot between solo and large-team efforts, where games like *Gone Home*, *Firewatch*, and *80 Days* flourish. However, single authorship and very small collaborations have one important advantage: they open development to people at the margins of game culture.

This opening involves another kind of identity as well—it bridges the cultural divide between programmers and nonprogrammers, between those conversant with computer code and those whose main expressive mode is natural language. The leading contribution to this unification is Graham Nelson's revolutionary rewriting of the Inform language, Inform 7, which uses something like English syntax (Nelson, "Inform 7"). We have already said some things about Inform 7 back in

chapter T-1, noticing the way its code tends to converge with ordinary language.

In Inform 7, statements are passed to a compiler program, which in turn generates much less readable code that establishes and populates a game space. At the same time, these statements are also understandable as sentences in the traditional sense. Playing on this ingenious overlay of linguistic registers, writers from the interactive fiction world have composed verses consisting entirely of well-formed Inform 7 expressions. Here is one by a writer who goes by the tag “Adjusting” (Adjusting). It riffs on Noam Chomsky’s famous example of formal nonsense, *colorless green ideas sleep furiously*:

Chomsky is a room.

A thought is a kind of thing.

Color is a kind of value.

The colors are red, green and blue.

A thought has a color. It is usually Green.

A thought can be colorful or colorless. It is usually colorless.

*An idea is a thought in Chomsky with description “Colorless
green ideas*

sleep furiously.”

A manner is a kind of thing.

Furiously is a manner.

Sleeping relates one thought to one manner.

*The verb to sleep (he sleeps, they sleep, he slept, it is slept, he is
sleeping) implies the sleeping relation.*

Colorless green ideas sleep furiously.

“It compiles,” one slightly skeptical commenter observes. “It just doesn’t do much”—except compile, of course, which the final line will not do in the absence of the lines that precede it. The observation is correct as far as the compiled game goes—there’s not much to do in the room called “Chomsky”—but placing the exercise in a larger context, we very much beg to differ. Wrapping Chomsky’s famous example around the twin poles of poetry and programming language is,

culturally speaking, a whole lot indeed. It demonstrates how the structure of language, which Chomsky's sleep of reason is meant to reveal, can be not emptied out but doubly loaded—deeply Inform-ed, as it were.

Twine is less formally ambitious than Inform 7. Because Twine games branch off not from rule-based text adventures but from link-based game books and hypertexts, they generally have simpler infrastructures than parser games—though a glance back at our discussion of *With Those We Love Alive* in chapter T-2 complicates this claim. In its own way, Twine also allows for relatively seamless connections between natural and cybernetic language. The foundational double-bracket convention for linking, with its automatic expansion of the structure map, offers a prime example of this effect. The Chapbook story format, intended to simplify Twine writing for beginners, extends the principle throughout the authoring process.

If we think about Inform 7 and Twine not just as clever, marginal improvements to game development but as interventions in literacy itself, their importance is evident. Socially speaking, both platforms allow people without programming backgrounds—often people alienated by the cognitive and ideological signatures of conventional game design—to build things with code. Even writers who never go beyond simple linking schemes are introduced to the structure editor. Working with this directed graph both underscores the dual nature of digital production, scriptonic content set within a textonic framework, and emphasizes the possibilities for complex expression, a challenge to both writers and programmers. In our classroom experience, a significant number of beginners move beyond basic hypertext, at the very least to conditional linking and textual variation, both techniques that implicate aspects of code such as variables and Boolean logic.

Outside of the classroom, where Twine writers are driven mainly by aesthetic exploration, there is a clear path from the basic Chapbook repertoire of links, forks, modifiers, and inserts to more complex approaches like embedded JavaScript. More venturesome creators may also find their way to Harlowe, Snowman, and SugarCube, with their broader arrays of programming tools. At each of these points of

advance, Twine users will find online references, examples, and explanations in places like Cox's *Twine Cookbook* (Cox), Melissa Ford's *Writing Interactive Fiction with Twine* (Ford), Anna Anthropy's *Make Your Own Twine Games!* (Anthropy), and Emily Short's blog (Short). Like other forms of interactive fiction, Twine can be an effective gateway experience for those who may not have otherwise thought of themselves as coders. Of course, not everyone is obligated or destined to make such a cultural crossing. For those who carry on happily with older forms, Twine and interactive fiction extend the ambit of literacy to include cybertexts. They expand the field of expression and indeed of reading. In this way, Twine and its cousins serve that highest function of writing, literary and otherwise: they advance the language itself.

What's in Your Heart

Language is always two things at once: a vast, intergenerational cultural project—what Ferdinand de Saussure called *langue*—and individual human utterance, or *parole* (de Saussure 91). While it may be important to speak of cognitive mapping or new horizons for literacy, the most powerful argument for the importance of Twine is simply personal. In the introduction, Anastasia told a version of her Twine story. In telling my own, I will add a character, a scene, and a crucial piece of dialogue.

In 2008, Klimas, Salter, and I were all associated with the School of Information Arts and Technologies at UB. If, as one woebegone troll suggests, this was anything more than coincidence, credit the invisible hand of history, that ultimate conspirator. Chris and Anastasia were graduate students; I was on the faculty. Eight years earlier, I had co-founded the school (which most places would call a department) with my partner, Nancy Kaplan, who directed its graduate programs. As Anastasia has written, Chris had begun building Twine on the foundations of TiddlyWiki. He had also taken some classes toward our MS in interaction design and information architecture. He had spoken to Nancy, and briefly to me, about using the development of Twine as his thesis project. We encouraged him, but there was a hitch.

Constraints of time and budget restricted Chris to one class per semester. At that pace, it would take several years to complete the degree and probably even longer to release Twine. So one evening, with next-semester registration looming, Chris came to Nancy's office to ask a difficult question: Should he carry on with the MS program or stop and concentrate on bringing Twine into the world? What Professor Kaplan said to him deserves to be remembered in the annals of Twine and possibly also in any history of electronic literature because it was exactly what she said to me in the summer of 1991 when I was agonizing about taking time from an academic project to write a long-form hypertext called *Victory Garden*. Her words: "You have to do what's in your heart."

Chris and I both decided to step off, or around, the academic adventure line. I've had no regrets and I hope the same for him. Over the next decade, I have encountered other people who have drifted crosswise through the cultures of software and higher learning, people with their hearts set on new forms of writing—Anastasia and Chris—and lately a constellation I have yet to know well or in most cases even meet—Anna Anthropy, Dan Cox, Cara Ellison, Porpentine, Kitty Horrorshow, merrikk, Christine Love, Kris Ligman, Michael Lutz, Xalavier Nelson Jr., D. Squinkifer, and too many more to list.

Twine was in my heart long before there was Twine, when, circa 1986, someone told me this thing I thought I was inventing had a name already—it was called hypertext, and there were people who knew about it: Mark Bernstein, Jay Bolter, John Cayley, Robert Coover, Yellowlees Douglas, Carolyn Guyer, Terry Harpold, Michael Joyce, George Landow, Judy Malloy, Cathy Marshall, John McDaid, and first of all, Ted Nelson. Hypertext was a thing for a few years, but creative attention eventually drifted from nodes and links toward graphics and animation and platforms like Flash (see Salter and Murray). Electronic literature became its own thing, and then Rettberg and Robert Coover went and Organized it, but by that time, I was trying to learn enough about video game design not to feel completely embarrassed teaching it. Somewhere my links back to hypertext broke down, or so it seemed, and by 2010, hypertext fiction felt enough like ancient history that Grigar and I had

to start digging it up and putting it in archives (Moulthrop and Grigar). Game culture, meanwhile, was on its way to crisis.

At the same time, Twine was happening, in ways that only in retrospect seem completely reasonable. Even Chris professes himself surprised with what Anthropy and Merritt K and D. Squinkifer and Porpentine were doing on the platform—making games, making noise, making a difference. Reconnecting with Twine made me feel a lot like McDaid's Glass Man, a vagrant scuffling across time tracks. Didn't we disappear somewhere in the nineties? Bones of old men, indeed. Back in the heyday of hypertext, my generation consisted mainly of academics with an attitude, skulking in basement Macintosh labs—the labs were *always* in the basement—fondly dreaming about the end of print. That end came, sort of, and in an important way did not. Meanwhile, there were other changes. The culture war about which I fabulated in *Victory Garden* erupted in harsh reality. The skin my cohort had in the game was nothing compared to what Quinn and others, including my coauthor, have had to risk in the endless aftermath of Gamergate. The older generation was out to change college composition, creative writing, and perhaps publishing, not the multibillion-dollar video game industry. What did we know? All commitment to the struggle, all respect to the youth.

So now here we are, friends and strangers, writers and aca-fans, all wound up in this project that threads through our lives in so many weird, queer, and astounding ways. As the oldest Twine writer in the world—because I was writing Twine before there was Twine, also because I am old—I will say this entanglement feels, in a way it has never felt before, really good. As Rettberg says, the play continues. For all the anger and suffering and thickening darkness, something important is happening. We are all part of a significant unfolding of language, ideas, and human possibility—may it last. May the future of Twine be glorious and full of righteous trouble, and may we all live to see it.

Never give up what's in your heart.

Works Cited

- Adjusting. *I7 Chomsky*. June 17, 2007. <https://groups.google.com/forum/#!topic/rec.arts.int-fiction/2pHd-vPfAVY>.
- Anthropy, Anna. *Make Your Own Twine Games!* Penguin-Random House, 2019.
- . *Rise of the Video Game Zinesters*. Seven Stories Press, 2012.
- Bell, Alice. *The Possible Worlds of Hypertext Fiction*. Palgrave Macmillan, 2010.
- Bogost, Ian. *Alien Phenomenology, or What It's Like to Be a Thing*. University of Minnesota Press, 2012.
- Burden, Michael, and Sean Goulas. "The Algorithmic Experience: 'Portal' as Art." *Game Studies* 12, no. 2 (2012). http://gamestudies.org/1202/articles/the_algorithmic_experience.
- Cannizarro, Danny, and Samantha Gorman. *Pry*. Tender Claws, 2014.
- Cayley, John. "Aurature at the End(s) of Electronic Literature." *Electronic Book Review*, February 2017. <https://electronicbookreview.com/essay/aurature-at-the-ends-of-electronic-literature/>.
- . "The Listeners: An Instance of Aurature." *cream city review* 40, no. 2 (2016). <http://io.creamcityreview.org/40-2/cayley/>.
- Chess, Shira, and Adrienne Shaw. "We Are All Fishes Now." *DIGRA: Transactions of the Digital Games Research Association* 2, no. 2 (2016). <http://todigra.org/index.php/todigra/article/view/39/91>.
- Cox, Dan, ed. "Welcome to the Twine Cookbook." *Twinery.org*, 2019, <https://twinery.org/cookbook/>.
- de Saussure, Ferdinand. *Course in General Linguistics*. Philosophical Library, 1959.
- Didion, Joan. *Slouching toward Bethlehem*. Farrar, Straus and Giroux, 1968.
- Ford, Melissa. *Writing Interactive Fiction with Twine*. Que, 2018.
- Galloway, Alexander R. *Gaming: Essays on Algorithmic Culture*. University of Minnesota Press, 2006.
- Geyh, Paula, Fred G. Leebron, and Andrew Levy. *Postmodern American Fiction*. W. W. Norton, 1994.
- Han, Bong Hee, and Elizabeth Ito, dir. "Five Short Tables." *Adventure Time*. 2016. WarnerMedia.
- Hayles, N. Katherine. *Electronic Literature: New Horizons for the Literary*. University of Notre Dame Press, 2008.
- Hudson, Laura. "Twine, the Video-Game Technology for All." *New York Times*, November 19, 2014. <https://www.nytimes.com/2014/11/23/magazine/twine-the-video-game-technology-for-all.html>.
- Interactive Fiction Technology Foundation. "Our Mission and Goals." 2020. <https://iftechfoundation.org/mission/>.
- Jameson, Fredric. *Postmodernism, or, the Cultural Logic of Late Capitalism*. Duke University Press, 1991.
- Klimas, Chris. *Twine Past, Present, Future*. Cambridge, MA: NarraScope, 2019.

- LaFrance, Adrienne. "How QAnon Is Warping Reality and Discrediting Science." *Atlantic*, June 2020, 27–38.
- Liu, Alan Y. *Laws of Cool: Knowledge Work and the Culture of Information*. University of Chicago Press, 2004.
- Marx, Julius. *Groucho and Me*. Da Capo Press, 1959.
- merritt k, ed. *Videogames for Humans: Twine Authors in Conversation*. Instar Books, 2015.
- Montfort, Nick, and Stephanie Strickland. *Sea and Spar Between*. Dear Navigator, 2010. https://nickm.com/montfort_strickland/sea_and_spar_between/.
- Moulthrop, Stuart. "For Thee: A Response to Alice Bell." *Electronic Book Review*, January 2011. <https://electronicbookreview.com/essay/for-thee-a-response-to-alice-bell/>.
- Moulthrop, Stuart, and Dene Grigar. *Traversals: The Use of Preservation for Early Electronic Writing*. MIT Press, 2017.
- Nelson, Graham. "Inform 7." 2006. www.inform7.com.
- Nelson, Jason. *Sydney's Siberia*. Accessed August 20, 2019. <http://www.secretechnology.com/sydney/>.
- Perloff, Marjorie. *Unoriginal Genius: Poetry by Other Means in the New Century*. University of Chicago Press, 2012.
- Raley, Rita. "Interferences: [Net.Writing] and the Practice of Codework." *Electronic Book Review*, September 2002. <http://electronicbookreview.com/essay/interferences-net-writing-and-the-practice-of-codework/>.
- Rettberg, Scott. *Electronic Literature*. Polity Press, 2019.
- Short, Emily. *Emily Short's Interactive Storytelling* (blog). Accessed March 4, 2020. www.emshort.blog.
- Stephenson, Neal. *Snow Crash*. Bantam Spectra, 1992.
- Warzel, Charlie. "How an Online Mob Created a Playbook for a Culture War." *New York Times*, August 15, 2019. <https://www.nytimes.com/interactive/2019/08/15/opinion/what-is-gamergate.html>.