# The Hypertext Years?

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1.

I begin with an admittedly strange notion – that three and a half decades of recent history, 1985-2020, can be called *the hypertext years*, as if this technology has some explanatory power for the time in question. We could of course just as easily think of this period as the golden age of popular computing, or the heyday of cellular communication, or of cable television, or maybe more obviously the Before Times; but I want to try the virtue of perversity.

Technologies tend to split off and wander. In 1998 I gave a talk to this conference distinguishing between "exoteric" and "esoteric" forms of hypertext (Moulthrop). The first (exoteric) was represented by dot-com websites, especially Amazon, which I described, not inaccurately then, as a hypertext whose nodes were books. This was hypertext as infrastructure. The second category (esoteric) contained things like hypertext fiction and net art -- hypertext as expression and experiment.

The exoteric or popular side of hypertext was of course where the action lay. As Jill Walker would write a few years later, the technology readily turned "feral," exploiting a "massive possibility for collaboration and emergence" (Walker 47). Socially speaking, technologies are at their most interesting when un-designed, emergent or insurgent. Our tools are more than limited solutions for discrete problems. Using them, we change who and how we are. A generation later, in a notably different context, the media theorist Andre Brock adopts similar notions in his analysis of Black Twitter, the test case for the method he calls CTDA, Critical Technocultural Discourse Analysis (Brock).

2.

Calling out hypertext instead of Twitter, Web 2.0, or technoculture generally, may look decidedly foolish, and there is plenty of folly in the record. The early hypertext years were not a good time for predictions. "Hypertext will help us with a great task of our time," wrote one tech commentator in 1987. Linked information would help in "judging what lies ahead, adjusting our thinking to prospects that shake the foundations of established worldviews. Hypertext will strengthen our foresight" (Drexler). These remarks were offered toward the end of a book extolling nanotechnology. Now of course we live in mortal dread of very small replicators. While our highly imperfect hypertext system, the World Wide Web, arguably did

strengthen scientific foresight ahead of the virus crisis, other communication technologies have made the situation worse. The inevitable judgement on "foresight" is not Black Twitter but its Orange counterpart, a potent vector of ignorance, denial, and risk.

Dwelling on specific technologies risks what philosophers call "misplaced concreteness," an over-investment in structure at the expense of context (Thompson). Yet as students of technoculture we cannot neglect tools and practices. Brock says of his method, "CTDA has the additional task of operationalizing the computational object as discourse," or in the words of earlier theorists, understanding "technology as text" (Brock 8). This means turning from hierarchical notions of control to "how control exists after decentralization," as Alexander Galloway puts it (Galloway). More about Galloway's subject, internet protocols, as we go. Reading technology as text also means turning from an esoteric emphasis on hypertext as art or craft to a broader domain of application that may at first seem to have little to do with nodes, links, and directed graphs – though appearances can deceive.

3.

Reading technology as text means examining the mediated emergence of meaning. This work may lead us to propose new rhetorics, as George Landow did foundationally for hypertext (cite HT book). We may have recourse to pattern language, as Mark Bernstein has memorably done (Patterns), or to the procedural rhetorics proposed by Ian Bogost (Persuasive Games) and Mary Flanagan (Critical Play). We may be drawn, as I always am, to Espen Aarseth's notion of the ergodic, understanding discourse, narrative or otherwise, as a path chosen from a range of possibilities, the traversal of a graph or network (Cybertext).

These investments have their limits and inflection points. As a justly critical colleague said to me in an early hypertext year, "linking is not thinking."[1] Not in itself, certainly, or not entirely. Making and following links, or *pathwork* in Aarseth's general formulation, may have as much to do with an impulse in many ways distinct from analysis or persuasion: the deliberate embrace of contingency we call play.

4.

In this regard Aarseth's history is instructive. His early monograph *Cybertext* (1997) is by my terms an esoteric project, addressed to "ergodic literature." Its examples include the aleatory oracle *I Ching*, choose-your-own-adventure books, the hypertext fiction *afternoon*, and most tellingly, parser-based adventure games. Even as *Cybertext* came out, Aarseth had his eye on

[1] I credit this remark to Richard Grusin circa 1992, though he may have passed it on from elsewhere and does not remember saying it.

larger prizes. He was instrumental in building the groundwork for game studies in European universities, eventually founding a research program and an influential journal.

The progression was logical. The concept of elective reception or pathwork has as much power for games as it does for other kinds of procedural storytelling. It provided the fulcrum for a critical turn from the esoteric to the culture at large. As Aarseth wrote in his 2001 opening editorial for the *Game Studies* journal, digital game design was (then) a "billion-dollar industry" without the benefit of academic research (Aarseth Year One). I remember laughing when I read that line, deep in American cynicism, thinking how little I supposed game companies needed game scholarship. Many billions and many graduate degrees later, the laugh is of course on me. So much for foresight.

5.

The hypertext years can of course be plausibly understood as a small chapter in a larger history of games and play, the emergence of *homo ludens ludens* that future anthropologists, if such there are, might regard as a major product of modernity. This period has seen not just the expansion of an industry and its markets, or the technical and artistic advancement of game design, but a crucial step toward legitimation. In 2011 the United States Supreme Court decided *Brown v. Entertainment Marketing Association*, which sought to allow governments to restrict sales of video games based on content. The court ruled 7-2 against this assertion, extending First Amendment protection to games. Justice Scalia wrote for the majority: "Like the protected books, plays, and movies that preceded them, video games communicate ideas—and even social messages—through many familiar literary devices (such as characters, dialogue, plot, and music) and through features distinctive to the medium (such as the player's interaction with the virtual world)" (SCOTUS).

Though the opinion could in some ways be called liberal or at least civil-libertarian – note Scalia's sniffy mention of "social messages" – the ruling was also eminently conservative. The court limited government power and affirmed the continuity of culture across generations and forms, recognizing "literary" techniques -- however debatable that term -- in game design. Politics aside, the opinion ratified an understanding of games that had been formulated by academics much earlier. As my colleague the anthropologist Thomas Malaby wrote in 2007: "A game is a semibounded and socially legitimate domain of contrived contingency that generates interpretable outcomes" (Malaby).

6.

All parts of Malaby's definition are resonant. After the *Brown* ruling, social legitimacy is no longer at issue, at least in the United States. Likewise, the "outcomes" of games, however we understand that slippery term, are now open to studied interpretation. "Contingency" is the

possibility of things turning out otherwise in real or imagined iterations. "Contrived contingency" takes in rules, play mechanics, and stochastic devices like dice and other sources of randomness. Though we are wandering further and further from the hypertext theme, it is worth noting that elective hyperlinks contrive contingency.

The most interesting and perhaps important terms come at the beginning, where Malaby refers to a game as a "semibounded… domain." These words have a rough complementarity. A domain is a zone of control or influence, implicitly an enclosure, but the perimeter in this case is "semibounded," marked off but not sealed. A game is a thing but not entirely its own thing. The esoteric space of play, to revert to my dualism, is always exposed to an exoteric outer culture. Malaby offers this definition (twice for good measure) in an essay called "Beyond Play," calling for an end to "exceptionalist" game theories that deny connections between play and other activities. This move is enormously important, and also problematic in ways to which we will come, but first we should consider some putative benefits from the cultural integration of games.

7.

In the early years of the century the reading theorist James P. Gee argued that computer games can promote cognitive development as well as higher-level pattern recognition that may count as a type of literacy (Gee). The commentator Steven Johnson popularized these ideas under the slogan "everything bad is good for you," an advertisement for the hidden virtues of turn-of-the-century popular culture (Johnson). According to his account, by certain measures of intelligence, people were objectively smarter at the end of the century as compared with earlier generations. The events of later years would put these claims in a skeptical light – Johnson's catchphrase does not benefit from its association with Woody Allen – but it seems possible to argue that expressive forms like computer games were at least making us more aware of the effects of information technologies. Using the classic game *Portal* to debunk the canard that video games can never rise to the condition of art, Michael Burden and Sean Gouglas reveal how a game in which we struggle against technological oppression reveals key truths about the "algorithmic experience" of 21st century life (Burden and Gouglas).

Thanks to the algorithmic machinations of Facebook, Google, WeChat, and other social media operators, this experience is pervasive. Tech users increasingly inhabit a world of inscrutable influences and incomprehensible complexity. The aesthetic response to this condition has spread beyond games to other media. The film theorist Thomas Elsaesser has described a *fin de siècle* flowering of "mind-game" films, a notably long list that includes ontological puzzle pieces like Tykwer's *Lola Rennt*, Cronenberg's *eXistenZ*, Fincher's *Fight Club*, and Nolan's *Memento* (Elsaesser). Similar things were unfolding about the same time in the home as cable and multi-screen viewing replaced the old broadcast regime. These shifts fostered what Jason

Mittell calls "complex television," represented by large-scale or narratively ambitious productions like *Twin Peaks*, *Lost*, and *The Wire* (Mittell).

8.

Complex television has had its ebbs and flows but has proved more durable than the mind-game film, which has largely given way to other kinds of spectacle. A notable peak of complexity, both technically and narratively, came at the end of 2018, with a holiday episode of the BBC/Netflix series *Black Mirror* called "Bandersnatch" (Brooker). The program is a very special special indeed. Set in 1984, the story follows Stefan Butler, a teenaged designer obsessed with turning a gigantic multipath novel into a graphical adventure game. In a formal echo of its mid-eighties setting, "Bandersnatch" tells this story by means of an interactive video system – something we called "hypermedia" back in the day – allowing properly equipped viewers to choose branch points for the unfolding narrative. This technical arrangement is at the same time radically new (at least for Netflix) and oddly retro, as it hearkens back both to an early age of PC gaming and, in its use of branching links, to hypertext itself. Watching it brings to mind J.Y. Douglas' discussion of Jordan Mechner's interactive video, *The Last Express,* in her book about the end of books (Douglas).

So at least 2018 was arguably a hypertext year; but problematically so. For those who care about interactive narrative, "Bandersnatch" poses several kinds of difficulty. The link options are almost always binary, enforced by an aptly named "Branch Manager" that seems designed to keep the writers from overdrawing the production budget. These dualistic choices are often annoyingly arbitrary (breakfast cereals, song selections) and carry the implicit suggestion of a zero-sum, right/wrong arrangement without much larger meaning. Even more irritating, "Bandersnatch" inherits from its parent series a dystopian technophobia that associates narrative complexity with madness, violence, and murder. Even as it invites the viewer into a hypermediated experience, it loads the story with anxiety about violations of singularity.

9.

Curiously, "Bandersnatch" was not the only program Netflix offered in the winter of 2018-19 about a game artist beset by contingencies. On the other side of the holidays, Netflix premiered *Russian Doll*, an intricate dark comedy starring Natasha Lyonne as Nadia Vulvokoff, an epically dissolute level designer who is having a hard time with a big birthday (Lyonne et al.). Which is to say, she keeps dying in an extended catalog of accidents, returning each time to the same moment at the start of her 36$^{th}$ birthday party. Though game design is (happily for the viewer) a much smaller part of Nadia's life than Stefan's, it provides one of several thematic keys to the story: Nadia repeatedly fails Level 36, doomed to respawn until she finds a way out of the loop.

Though their serial appearance was coincidental, "Bandersnatch" and *Russian Doll* make an interesting antithetical pair. Lyonne's series features conventional narrative, inflected by both mind-games and, in its level of recurrent detail, complex television. Where "Bandersnatch" offers an actual mechanic of branching, *Russian Doll* asks only that we watch the next episode, in which Nadia's experience will reflect the looped discontinuity of gameplay without anyone having to push any buttons. It asks not physical engagement but the opposite, passively allowing the series to continue. To adapt Aarseth's terms in a way he might not appreciate, we might call *Russian Doll* an auto-ergodic experience.

This difference has a major aesthetic consequence. Unlike "Bandersnatch," which is a finite state machine with a range of possible outcomes, *Russian Doll* has a unitary story path which leads (no spoilers) to something like redemption. The series has far more complexity than my quick summary indicates, but its overall pattern is coherent: a closed, game-like arc. If "Bandersnatch" is about the anxiety of contingency, *Russian Doll* explores what Freud called "remembering, repeating, and working-through" (Freud).

10.

The odd couple of "Bandersnatch" and *Russian Doll* is useful in trying to understand the relationship of the ergodic and the cinematic, an important part my work with media theorists. We could also see in the pair an evocation of my old esoteric/exoteric binary, with the formal radicalism of active hypermedia set against the management of contingency by complex but still traditional television. Disruptive hypermediation is inevitably aligned with an ideal of continuous consumption. The domain of contrived contingency has limited autonomy: play is reliably disciplined by entertainment. This is the way of mass media, and perhaps of civilization generally. Claude Lévi-Strauss explained the basic logic 60 years ago:

> All games are defined by a set of rules which in practice allow the playing of any number of matches. Ritual, which is also 'played,' is on the other hand, like a favored instance of a game, remembered from among the possible ones because it is the only one which results in a particular type of equilibrium between the two sides. (Lévi-Strauss 30)

This is among many striking insights in *The Savage Mind*, whose ironic title masks an attempt to check the privilege of western rationalism. Games and rituals are played everywhere. It is not just native communities of New Guinea who turn the first into the second: the practice can also be observed among the binge tribes of Netflix. "Bandersnatch" is by any fair accounting a game (just not a good one) and also a video-based hypertext. *Russian Doll* ritualizes the contingencies of such challenging, esoteric experiments. But in Lévi-Strauss' analysis, game and ritual are joined by a third term, which we need to take up. What "equilibrium" is served by this balance of forces?

11.

Can we even use that word now? This second decade of the new century seems very far from equilibrium, whether we define the term sociologically, politically, or in the possibility space of chaos theory. It is hard to say *equilibrium* these days without certain modifiers including *tenuous, threatened,* and *fragile*. This is a matter of direct experience, as our exposure to the contingency of infection drives the rituals we set against risk -- distancing, decontamination, the measured washing of hands. The game/ritual balance has been skewed. Though we may play games intensively for diversion, at home and online, we are in a deeper sense less playful now, or at least more anxious about maintaining a narrative with the singular outcome of survival. Though this is all about staying alive, Freudians might see here the "death drive," the organism's desire to reach its ideal ending – in present circumstances, one that does not involve a reefer truck or a mass grave (Freud BPP).

But as Freud knew, the death drive (which he eventually repudiated) can be turned outward as a desire for mortal combat, bringing us to another failure of equilibrium: the culture wars that now embroil the west. Even before the pandemic, certain aspects of play had become politically toxic. Opening video games to meaning created conditions for the vicious backlash of GamerGate, a campaign against feminists, social critics, and others some would exclude from game culture. Noah Wardrip-Fruin points to a paradigmatic case in his forthcoming study of meaning in games, *How Pac-Man Eats* (Wardrip-Fruin). In 2013 the Fullbright Company, corporate designers turned independent, released *Gone Home*, built on the exploratory logic of games like *Bioshock* but without weapons or adversaries (Fullbright). The game was mocked for its non-violence, notably in a video called "Gun Home" which restores the first-person shooter's signature weapon and derides the original game's social conscience (cite Gun Home). In this case at least, the decision to welcome video games into the cultural mainstream may have had as much to do with the Second Amendment as the First.

12.

It has become difficult, however necessary, to maintain Malaby's call to move the study of games beyond esoteric constructions of play, now that we know what lies outside the magic circle. GamerGate, we are told, was template and testing ground for larger culture wars whose consequences now seem literally life or death (Warzel). Beyond Milo and the trolls of 4chan slouch the bloodshot avatars of chaos, Steve Bannon, Boogaloo boys, and the mythical Q.

Or as we could say more generally, beyond play lies trouble. Oh for those early hypertext years, when all we worried about was whether the Cold War could wind down without nuclear catharsis, or if Apple's self-advertised rebellion could fend off Big Blue, or if the fabled Xanadu

could survive hostile interviewers and other persons from Porlock.[2] As we have seen, much of this was illusion. Hypertext in itself offers neither remedy nor escape. It is part of a larger technocultural text containing many chapters and episodes – some of which may yet be hopeful.

13.

But before we come to the promising part, we need to tarry a little longer with the negative, turning back to the culture war and its aftermaths. In 2018 the game theorist Bonnie Ruberg reflected:

> #GamerGate has gotten at least one thing right. It is no coincidence that this backlash comes at the same time that queerness is becoming a more central concern in games and the dialogues that surround them… proponents of #GamerGate are driven by a fear that video games are changing, that they will no longer belong only to white, straight, cisgender men and boys. And that is true. (Ruberg 13)

Ruberg has been a major agent of this change, a leading advocate of "queergaming" as both a creative and critical enterprise. Their book is momentously titled *Video Games Have Always Been Queer*, a statement that deserves close consideration. I say this not because the claim is dubious, but because it may be easy to miss its full, difficult implications.

In its narrowest sense, as in the remark just quoted, Ruberg's thesis asserts identity and interest against a regime of exclusion. But this is just the first step. It is not simply that queer people have been part of the game industry from its beginnings, or that game narratives have included (albeit at the margins) queer characters and situations. The full sense of Ruberg's claim goes beyond questions of personal identity to the essence of video games themselves.

14.

Ruberg does not say *games need to accommodate queerness* or *games are finally finding their queer side*, but *games* **have always been** *queer*. That phrasing makes a claim that is historical and categorical – that video games have been, since their inception, fundamentally or characteristically outside the constraints of a dominant, hegemonic culture. The difference stems from play itself. Ruberg writes: "the moments… I find myself most drawn to in games [are] not when I see characters who share my gender and sexuality identities, but when I see my own queer approach to the world echoed in what it feels like to play" (16). Games are not simply or occasionally about queerness: games are queer in and of themselves.

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[2] If you were not an English major, see https://en.wikipedia.org/wiki/Person_from_Porlock; and more pertinently, Belinda Barnet's history of Ted Nelson and Xanadu in *Memory Machines* [Barnet].

Ruberg notes that earlier theorists have recognized "how play makes space for alternative pleasures" (11) but have not fully articulated the way play proceeds from alterity. To the extent Ruberg's construction of queerness takes in possibilities of variation or "contrived contingency," then the thesis is less resistance or appropriation than a recognition of core truth.

Important ideas are usually dangerous, and Ruberg's is no exception. By "danger" I do not mean just violent oppression from trolls and homophobes, but the moral hazard of straight people like me who start to see the persistent difference of their own work as convergently or intersectionally queer. Ruberg does not exclude straight and cisgendered people from the community of play, so queerness must be in some degree accessible to us; but always with limits. As Ruberg warns, "in using the word 'queer' itself, straight, cisgender subjects must remain aware that their experiences are never one and the same with those of LGBTQ people… and must come with an acknowledgment of and respect for, queer lives" (19).

With this stricture in mind we can turn our attention to a remarkable work about desire, frustration, precarity, narrative, time, queerness, and very possibly hypertext – Anna Anthropy's *Queers in Love at the End of the World* (Anthropy).

15.

Though it is operationally brief and conceptually simple, *Queers in Love* defies easy summary. Generically it belongs to the family of computer games, though only as an estranged second cousin. We could call it a fiction, since tells a story in words, and a hypertext fiction because the reader unfolds the story by following links, but these attributes are heavily complicated by the design. It may be most appropriate to call *Queers in Love* a time-piece, written under pressure for the Ludum Dare game jam in 2013, and based on a remarkable technical constraint: the player is given ten seconds, which roll off on a visible timer, to play out a hypertextual love scene.

In 1995, when Anthropy was probably in grade school, I wrote a time-factored web fiction called *Hegirascope*, which Michael Joyce described at its premiere as "the hypertext that reads itself." This work offers the reader roughly half a minute to scan a passage and choose a link before another passage loads in its place. By contrast, *Queers in Love* is the hypertext that refuses to be read or makes reading exceptionally difficult. Where *Hegirascope* automatically cues up the next thing, *Queers in Love* relentlessly counts down to zero, at which point we read: "Everything is wiped away." Links at this point run only to a terminal epilogue or restart. *Hegirascope* was inspired by the early insanity of the World Wide Web; it runs hither and yon will go on forever unless the reader finds an ending. *Queers in Love* is instead a game of apocalypse, a broken story that refuses any extension except what we can manage by starting over.

16.

Unless of course we cheat. There are various ways to defeat Anthropy's constraint, all of which augment the meaning of the work, and about which there is more to say than I can do here. The game has been the subject of much good critical study, such as Claudia Lo's article comparing *Queers in Love* to "slow cinema," which I particularly recommend (Lo). For present purposes I want to single out one curious moment in Anthropy's time-piece. If we click quickly enough, we can reach this bit of the story:

> Your fingers twine between hers. After all the forces that tried to keep you and her apart, maybe just holding her hand is enough.

Anna Anthropy is much better at branching narrative than the writers of "Bandersnatch" – among other things, she knows how to modulate between many links and few. At the outset, *Queers in Love* overloads the possibility set. As we choose a narrative line and race along it, the choices thin down to a minimal pair, here "twine" and "enough." Following "enough" brings us to an apparently nihilist endpoint, "Maybe it's enough to know that they lost." If we take the other route, via "twine," we arrive a rather different final phrase: "What a powerful form of expression."

This line occupies a terminal node with no continuing link. The timer will run down as we read it, leaving us perhaps to wonder what it means. Sticking to the diegetic story, we can take "powerful form of expression" to refer to the interlacing of fingers, a final, loving digitality. This makes a certain sense, though reflective turn seems a little out of place for a *Liebestod*. However, there is a second reading in my head, and I suspect in Anthropy's as well. Pivoting homonymically, we could take "twine" as proper noun instead of verb, evoking the name of the system in which *Queers in Love* was created. Read this way, the line becomes a grace note added in appreciation of a tool and its makers.

17.

*Queers in Love* was made in Twine 1.4, using a third-party extension for the countdown display. Twine, a "powerful form of expression" indeed, is a platform for linked writing created by the independent developer Chris Klimas in 2009. It has been through two major release cycles and has been augmented by the addition of several "story formats" that extend its core features. The code base and identity are maintained by Klimas, with the help of a few developers around the world, all working on a voluntary or community-supported basis. No Twine code is copyrighted or privately held. In this respect Twine counts as a significant case of open source development.

Twine users number in the tens of thousands, mainly in education, game development, and entertainment. The platform has been adopted by journalists, policy advocates, game researchers, mental health workers, literacy educators, and a generation of independent game designers. If indy game developers are the singer-songwriters of the game world (to use a rough analogy), Twine is everyone's first folk guitar, with low cost of entry, a gentle learning curve, and equal support for three-chord wailing as well as more complex styles. Twine has been noticed in the *New York Times Magazine* and had a snarky passing reference in Adult Swim's *Adventure Time*. It was the basis for an online game to promote Stephen Colbert's *Late Show* and was used by Brooker and associates to build the initial treatment for the "Bandersnatch" episode (see Salter and Moulthrop).

18.

Perhaps the most widely noticed Twine game is Zoe Quinn's *Depression Quest*, a persuasive, deeply moving work whose virtues have been partly eclipsed by the fallout of GamerGate – which, sadly, is probably just what the trolls wanted. The movement to which Quinn belongs continues to thrive, however, with significant work from Anthropy, Xalavier Nelson, Jr., Porpentine Charity Heartscape, michael lutz, Darius Kazemi, Christine Love, Dietrich "Squinky" Squinkifer, Cara Ellison, Imogen Binnie, and merritt k, among many others. The last two in this list, with Quinn, have produced a remarkable book, *Video Games for Humans*, a compendious record of Twine makers playing through and commenting on one another's games (Binnie et al.). This book is important not just for its artful translation from screen to page, or for being the first anthology and manifesto of a movement, but for something merritt k notes in her preface: "Many of the figures who have risen to prominence in Twine circles are trans women. That trans women are recognized as the leaders of an artistic scene is a fact worth appreciating in its own right" (12). Klimas has said that Anna Anthropy deserves as much credit as he for the success of Twine (Salter and Moulthrop).

Along with trans women, the Twine insurgency includes neuro-atypical people, gay people, persons of color, and those of any identity for whom story has equivalent value in the design of games, those who are interested less in kinetic graphics than in what Ellison has called "mechanics of intimacy" (see Hudson). This approach to gaming makes room for a particular kind of alternative pleasure, at least to my way of thinking. When I look at the infrastructure of a Twine work, déjà vu is inescapable.

19.

Some time ago, Anastasia Salter and I asked Klimas why, after all the years of hypertext development and the dominance of the World Wide Web, he thought it necessary to build another hypertext system. To which his answer was, basically: *Is that what I was doing?* (see Salter and Moulthrop). Klimas was mainly concerned with making an application that would

help his less technical friends build branching stories. He set out not to re-invent hypertext (or more immediately, wiki technology), but to adapt existing affordances.

Twine has some features of a hypertext system: nodes, links, directed graphs, and modal alternation between local composition and display of higher-level structure. It does not implement more advanced features, such as articulated links (pathways), typed links, bidirectional links, fluid links, graph-based navigation, or such radical concepts as transclusion. It is most accurate to call Twine a second order hypertextual resource that leverages protocological elements of the web: HTML, the Document Object Model, Cascading Stylesheets, and above all, JavaScript. Twine creations are delivered to web browsers as HTML heavily augmented by scripting. Twine operates within the dominant hypertext/hypermedia environment of our times, adding back to that vernacular certain features, such as mapping and bimodality, that the web has never embraced. It is an adaptation, not a new foundation, but this does not diminish its importance.

20.

As Twine approached its tenth year, Salter started a research project about the software and its cultural impact, to which I attached myself. The resulting book, *Twining: Critical and Creative Perspectives on the Twine Platform*, will be published by Amherst College Press later this year, in open distribution and print on demand. For both of us the motivation was partly personal. Though we played no part in the development of Twine, we had known Klimas when one of us was teaching and the other studying in the graduate program at University of Baltimore. We were also interested, on the cultural/critical side, in the role Twine works have played in the struggle to create a game-based artworld.

Above all, though, we had begun to use Twine in our teaching and creative work and decided early on not to just to write a history or critical study, but a practical exploration along the lines of what Nick Montfort calls "exploratory programming" (Montfort). That is why we use a gerund in our title, *Twining*, signaling both that Twine is an unfolding phenomenon, an active community of practice, and that engagement with this platform requires creative action. The book has five theoretical/critical chapters, considering the history of Twine, the aesthetic program its users have evolved, its relationship to earlier culture, and the way it fits into the trans-millennial moment. Each theory chapter is followed by a practical chapter that lays out demonstration projects in various areas, from basic hypertextual storytelling to experimental and conceptual designs. These practical chapters are written with an eye to learning, either solo or in classes. Though we range over several story formats, we have standardized on the new Chapbook format, which Klimas designed to be both accommodating to beginners and easily adaptable for more ambitious coders.

21.

Salter and I align Twine work with the productive side of the digital humanities, and with our personal investments in crafting, tinkering, and making. Twining is a making, both in the local sense of games, stories, and acts of expression, and in the larger sense of resistance practices, critical exploration, the pursuit of alternative pleasures. One of the things we may be making, in this grander project of Twining, is an interface, a zone of contact if not reconciliation, for the disparate tendencies I named all those years ago, the esoteric of the few and the exoteric of the many.

Twine is a nominally successful, at least plausibly sustainable open source software practice that has entered a second decade. Through the recently formed Interactive Fiction Technology Foundation, Twine has the promise of a support structure that may allow it to pass to new generations of developers and users. This kind of institutional presence turns an evanescent artworld or cult – the definitional esoteric group – into something with history, heritage, a commitment more recognizable to exoteric eyes.

As a second-order hypertext resource built on web protocols, Twine takes the exoteric structures that power e-commerce and the attention economy and winds them around the queerer world of visionary storytellers and insurgent gamers. This encounter can have savage consequences, as in the GamerGate backlash, but by pushing through these moments we carve out a future, however tenuous, for the ergodic idea. The louder some try to deny it, the more obvious it becomes that there is something inextricably and wonderfully alternative about contrived contingency. The world beyond play needs play as much as ritual. No doubt power and money will continue to favor kinetic dominance games, but as long as there is the software equivalent of cheap guitars, there will be people who pick them up and play otherwise.

22.

And so the hypertext years roll on, if only in my head. To me Twine feels dialectical, a third way that finesses the esoteric cultishness of experimental writing and the exoteric toxicity of networked media. What goes around comes around, changed and reanimated in the hearts and minds of new generations. It is comforting to see a pattern here, a way forward that extends what came before – and yet the architecture of thesis, antithesis, and synthesis is always part illusion.

That neat technocultural triangle sits inside a much weirder geometry, fractal and non-Euclidean, which is the possibility space we must imaginatively map after scientists of the previous century delved reality and found multiplicity. So we turn to mind-games and complex stories, filling our heads with counterfactuals, time loops, and multiverses. The most revealing text of 2018-19 is neither "Bandersnatch" nor *Russian Doll* but *Spider-Man: Into the Spider-Verse*, which is much more than another piece of comic-book I.P. The film updates the

visionary shamanism of Kubrick's *Space Odyssey* for a moment 60 years later. It offers not a space voyage but a trans-dimensional spillover where multiple versions of Spider-Man erupt onto the screen. At a certain point in the action, Aunt May – no longer the little old lady of the 60s but now a technomage -- asks the new Spider-Man, "What dimension are you from?" The kid answers, "Brooklyn." It's a sweet joke with a deep lesson – the film is full of them. Brooklyn has never been just a borough. As Walt Whitman and Spike Lee might both agree, it was always its own dimension, a deep racial-cultural fold in the American multitude. We can call it home, but the process is complicated.

Learning to inhabit this teeming, unstable space is challenging and frightening. Maybe it takes superpowers to surivive, though as the film tells us, the Spider-hero has many faces, anyone can wear the mask, and the costume will "always fit – eventually." On screen, space contorts and glitches, updating Kubrick's wormhole cascades with the kaleidoscope perspectives of game space, in the process furnishing a metaphor for life as we know it.

Enter the Spider-Verse. Things fall apart, then back together in new threat packages. Toxic games yield to rituals of purification. The chaos of the real exposes us to pandemics, paranoia, uprisings, and state terror. Possibility space can prove lethal for some of us, perhaps even for the species at large, since we can't yet call on trans-dimensional portals in existential emergencies. We can only make do with unreal assets, with stories, games, films, comics, and hypertexts, contriving contingencies that might lead if not to equilibrium, then at least to some sustainable futurity.

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