Chapter 2

The First Wave of Digital Storytelling

We've been telling stories with digital tools since the first computer networks linked nodes. This is a surprising assertion, in some contexts, especially if one does not associate narrative with computer hardware, much less digital information. It's even more startling to recognize just how far back digital storytelling goes historically and to grasp that it has a lineage, with all the implications that follow.

Yet it is vital for practitioners and audiences alike to think historically on this topic, rather than viewing digital storytelling as something utterly new, alien, or freshly emergent. A feel for the past helps explain some of the present's technological structures and practices. For creators, it opens up a broader field of examples to draw upon and to be inspired by. We may even elicit insights about currently emerging practices by analyzing long-term trends grounded in the historical record.

Just how far back we start that record is not immediately apparent, and depends on our understanding of terms. We can start before the internet, if we choose. To the extent one considers games to contain stories, we could begin with a game called Spacewar, an early storytelling engine that dates back to the 1960s. If we think of world-building as storytelling, the first virtual worlds in the early internet age—all text based!—appeared in the late 1970s, with the first MUDs (Multi-User Dimensions or Multi-User Dungeons).

We are on firmer consensual ground by the 1980s, still prior to the World Wide Web, but when a mix of technologies had advanced. The internet had grown immensely in hosts and users after two decades of growth and there was even a popular movie about networked computing, *WarGames* (1983). Personal computers (PCs) had stunned mainframe supporters by racing into the consumer market via Apple, Amiga, and others. The first virtual

communities appeared and flourished, from email lists to the WELL, as documented by Howard Rheingold.[1] Science fiction was growing skilled at depicting digital identities and virtual worlds: examples include Alice Sheldon's "The Girl Who Was Plugged In" (1973), Vernor Vinge's "True Names" (1981); William Gibson's *Neuromancer* (1984); and John Varley's "Press Enter []" (1984).

In that environment, the last decade of the Cold War, we see the rise of hypertext fiction, based on such technologies as Apple's Hypercard (1987) and Eastgate Systems' Storyspace.[2] Hypertexts consisted of two elements: content items and their connections. Multiple readable chunks, or *lexia*, are positioned on a computer screen: "documents of any kind (images, text, charts, tables, video clips) . . . scrolling 'pages' (as they are on the World Wide Web) or screen-size 'cards' (as they are in a Hypercard stack)."[3] Readers (or users) traveled hyperlinks among lexia to experience (or develop) stories. Stories were published via floppy disk and discussed by a growing community of practitioners such as Stuart Moulthrop, Shelley Jackson, Michael Joyce, Richard Holeton, and Sarah Smith. Scholarly investigation appeared in print, with works like Jakob Nielson's *Hypertext and Hypermedia* (1990), George Landow's *Hypertext* (1992), and Michael Joyce's *Of Two Minds: Hypertext Pedagogy and Poetics* (1995).

Awareness grew of a predigital proto-hypertext tradition, including a galaxy of texts and practices that seemed to anticipate that combination of links with lexia: the accretion of commentary upon religious manuscripts; the *I Ching*; Maya Deren's "An Anagram of Ideas on Art, Form and Film" (1945); Julio Cortazar's *Hopscotch* (1963); Milorad Pavic's *Dictionary of the Khazars* (1988); and the very popular Choose-Your-Own-Adventure children's book series (beginning in 1979). It eventually became commonplace to recognize that Vannevar Bush had argued for hypertext even before the integrated circuit was invented, in his extraordinary post–World War II essay "As We May Think" (1946).

How do hypertexts work as digital stories? Users—readers—experience hypertext as an unusual storytelling platform. We navigate along lexia, picking and choosing links to follow. As with reading a novel, we assemble the story in our minds. Unlike a novel, we have no single, linear direction to follow. Instead, reading a hypertext is something like a hybrid of exploring a space (think: museum, park, city), solving puzzles (which path will be productive?), and reading an opera libretto or closet drama (staging it mentally). From the production side, creators of hypertexts had several tools available. Hypercard was the first to allow easy, visually clear creation and linking of

lexia. Storyspace offered a powerful writing platform, letting authors select from multiple organizational structures. In the following decade, once the World Wide Web appeared, every page-authoring tool from Notepad to Dreamweaver was a potential hypertext digital story tool as well.

While hypertext storytelling proceeded, digital gaming went through a simultaneous blossoming in the form of interactive fiction (IF). These stories were born from the generative matrix of MUDs and MOOs (MUD, Object Oriented), text-based virtual worlds first launched circa 1979. Users interacted with those environments via grammatically simple comments, entered via keyboard, such as "go north" or "take apple." In a MUD or MOO, users interacted with the environment and other players; in IF, with the environment and the story.

In retrospect, it seems logical to write stories in these environments. Much as users worked their way by clicking through hypertexts, they could—and did—explore textual spaces by typing. The foundational digital story in IF is *Adventure*, created by a programmer and spelunker to entertain his caving-happy children in 1975. Users entered simple commands to advance their way through the story, exploring spaces in a vast cave (initially named after the real-world Colossal Cave in Kentucky). There they encountered other characters, acquired objects, and solved puzzles. Harry Brown argues that *Adventure* marks a crucial shift in gaming: "It substitute[d] scoring with a quest, a narrative." Digits on the scoreboard were less important than the story unfolding.[4]

Other such IF story-games began to appear, and companies formed to support and profit by them: Adventure International, Sierra, and, most notably, Infocom.[5] A rapid product development cycle saw games released on disk, sometimes with physical objects as bonuses or tools.

Taken together, interactive fiction and hypertext fiction had—and have—much in common as digital storytelling platforms in our historical survey. They both relied heavily, if not exclusively, on text for content, although other media began to infiltrate as technologies improved. Both forms saw businesses arise, leading to the first digital storytelling market environments. Both combined stories and play, narrative with gaming. And both provided an unusually user-centered experience, requiring readers to choose their own pathways through, to contribute, to interact in a basic, if not radical, sense. Stories were co-creations, partially determined by the audience. Indeed, Espen Aarseth coined the term "ergodic literature" to cover these new combinations and affordances, where *ergodic* is a neologism from the Greek words for "work" and "path."[6]

A third form of digital storytelling arose during the 1980s, one more popular than either IF or hypertext, yet not so well respected. This is the body of urban legends and demotic folklore, spread virally through email messages and Usenet posts—Nigerian financial scams, the perpetual Mrs. Fields cookie recipe, horror stories involving street gangs or politicians. To those we can add countless quizzes, number puzzles, jokes, prayers, and inspirational texts. Some of these are quite readily understood as very short stories, like a news account (no matter how truth challenged) or a report of a life-changing experience. Like IF, some of this content depends on the reader's puzzle-solving abilities (Can this be true? Do those numbers really add up?).

Such email stories became well known enough to serve as vehicles for satire, such as this one:

> Dear American:
>
> I need to ask you to support an urgent secret business relationshipwith a transfer of funds of great magnitude.
>
> I am Ministry of the Treasury of the Republic of America. My countryhas had crisis that has caused the need for large transfer of funds of800 billion dollars US. If you would assist me in this transfer, itwould be most profitable to you.
>
> I am working with Mr. Phil Gram, lobbyist for UBS, who will be myre-placement as Ministry of the Treasury in January. As a Senator, youmay know him as the leader of the American banking deregulationmovement in the 1990s. This transactin is 100% safe. . . .[7]

These stories differ from hypertext and interactive fiction in some important ways that anticipate subsequent movements. Unlike ergodic lit-eratures, these viral texts required little work on the part of readers, beyond the occasional forwarding (compare with viewing a YouTube video). They required no extra platform for their creation, beyond typing in a text win-dow. Additionally, this sprawling body of content is deeply social, *always* spread and shared via formal and informal networks. A nested series of embedded email message headers, for example, narrates one item's passage through people connected by school, work, or friendship.

All of this digital storytelling ferment occurred before Sir Tim Berners-Lee unleashed the World Wide Web, the world's largest hypertext project, in 1991.[8] These ergodic systems constitute a pre-Web digital storytelling history, its first generation.

Once the Web took off and its user base grew at a historic pace, hypertext storytelling techniques migrated there. Indeed, hypertext is enshrined in the basic URL naming syntax, where *http* stands for Hyper Text Transfer Protocol and the page suffix *.html* refers to Hyper Text Markup Language. The rapid penetration of the Web into daily life, combined with the ever-increasing ease of creating Web pages, meant a continually expanding arena for storytelling. The Web's second decade, that of "Web 2.0," accelerated possibilities and production still further. Some of these storytelling approaches took hypertext into new realms, while others focused on media-rich experiences, sometimes called "hypermedia."

Individual Web pages work well enough as hypertext lexia, chunks of content connected by easily recognized links. Nonfiction nonstories, such as the Internet Movie Database or any reference guide, are familiar examples of this quotidian hypertext. Working through them, ergodically, creates a stream of accessed content, a pathway without a tale, if you will.

Creative writing took to this format easily. One example is *Ted's Caving Journal*, a series of mock journal entries describing the exploration of an ominous underground structure. Like players of the 1970s *Adventure* game, the spelunker/narrator and associates encounter mysteries and challenging navigation in caverns. Formally, the story consists of ten static, relatively simple Web pages. Each one contains several paragraphs of text, along with basic formatting and an ominous black background. Each page is dated, with months and days in 2000 and 2001. Some pages are preceded by a single photograph illustrating a point from the text, while others contain links to further images ("Click to see a photo of the original opening. I put my glove in the hole for size reference"). Below the text is a simple navigational menu, leading forward and back in the story sequence, with directions often named ("Work Continues/Back to Cave page").

The tenth, final page alone has flawed navigation, as clicking "Next" leads to either a dead link or an endless loop fixed on that page itself. Evidently something terrible has happened to Ted, preventing him from completing the journal.[9] The link becomes more than a Vannevar Bush–style path, and instead points to a spooky, open-ended absence. It is an abyss or unplumbable hole, aptly enough.

Other Web-based digital stories deployed richer, more complex media. A source of good examples is the long-running Dreaming Methods project (1993–).[10] That group has produced a series of multilinear stories that partake of the environmental strand of digital storytelling history, portraying

spaces like an old building's mailbox or a decaying house. As with hyper-text, each story includes numerous, linked lexia. The user works through these tales ergodically, selecting pathways to follow. Dreaming Methods uses Flash to combine audio, text, images, and animation. Stories escape easy genre classification, brilliantly exploring often debilitated mental states, along with intertwined lives of contemporary characters.

The first decade of the Web, approximately 1994–2004, saw a great deal of browser-based storytelling. Examples proliferated, such as the *Simple-ton* series, "The Jew's Daughter," "Lexia to Perplexia," *GRAMMATRON*, and *Zoeye*.[11] Alan Sondheim has been exploring digital expression in an extraordinary series of forms, thoroughly blurring fiction and nonfiction, dating back to 1994.[12] His technologies are multiple: "I have used MUDS, MOOS, talkers, perl, d/html, qbasic, linux, emacs, vi, CuSeeMe, Visual Basic, etc. . . ."

His formal structures are complex, as are the topics explored:

> Almost all of the text is in the form of short- or long-waves. The former are the individual sections, written in a variety of styles, at times referencing other writers/theorists. The sections are interrelated;
>
> The long-waves are fuzzy thematics bearing on such issues as death, sexu-ality, virtual embodiment, the "granularity of the real," physical reality, com-puter languages, and protocols. The waves weave throughout the text; the resulting splits and convergences owe something to phenomenology, pro-gramming, deconstruction, linguistics, philosophy and prehistory, as well as the domains of online worlds in relation to everyday realities. . . .
>
> I continue working on a cdrom of the last eight years of my work (Archive), as well as a series of 3d animation and other videos.

Perhaps what most clearly makes this a form of digital storytelling is the way Sondheim developed a series of complex, shifting, Blakean characters:

> On occasion emanations are used, avatars of philosophical or psychological import. These also create and problematize narrative substructures within the work as a whole. Such are Susan Graham, Julu, Alan, Jennifer, Azure, and Nikuko in particular.

In addition to this period's creative work, scholarly work also grew, sometimes under the aegis of the emergent field of "new media studies." An Electronic Literature Organization formed up in 1999. Retrospective

anthologies have appeared in the years since.[13] A "net.art" movement developed.[14]

As the Web advanced and the twenty-first century dawned, the 1980s period became the subject of still another form of digital storytelling, a relatively esoteric one: digital memoirs of that period. For example, a former systems administrator carefully archived on the Web a series of very simple, text-only, non-hypertext accounts of hacking and technology. Alongside practical technological documents of historical value, there are humorous stories, musings on culture, and autobiographical reflections.

> I'm reading through these old textfiles, completely blown away. I was also in the 914 area code, with the absurd little handle King Kilroy. . . .
>
> Ever since I got started in computing in 1981, I was certainly aware of telecommunication services such as bulletin board systems (called "BBS's" or "boards"), commercial time sharing services (Compuserve, The Source, etc.) and even this mysterious thing called "Usenet". And of course, a modem on my very own personal computer would be really handy at college. . . . No more crowded computer labs at 3 A.M., just dial into the system from the comfort of the dorm![15]

These short, focused memoirs provide the basics of good nonfiction storytelling: personal presence, emotional content, clearly described information, a sense of why the subject matters. They are digital stories about internet history, from which we can learn about the situation out of which the first generation of digital storytelling sprang.

While Web storytelling appeared and developed during the first decade of the browser, another, often offline form appeared and was the first to seize the name of "digital storytelling." A Berkeley area group anchored in community theater and social activism sought ways to capture digital video for use by everyday people. As with performance art and community organizing, the goal was to make tools widely available. After a great deal of invention and iteration, a curriculum was distilled: a three-day intensive class, during which participants learn at least just enough technical skills to create a short story in short video form.

A key move in what the creators dubbed "digital storytelling" was an emphasis on personal content. The power of this approach was discovered around 1990, during studio performances by an artist and video producer, Dana Atchley. Atchley's work, *Next Exit*, was autobiographical, covering "five decades of his life." That topical focus, combined with innovative use

of video and projection, inspired Bay Area audiences: "Many people who watched the performance [said] yes, I have a story like this."[16] By 1993, Atchley and others had developed and led workshops at the American Film Institute wherein participants created personal stories, with topics including parents and a dying friend. Joe Lambert writes of the experience as the moment when digital storytelling started to appear:

> It was "like" many things, but it was also unlike anything I had ever seen before. The sense of transformation of the material, and of accomplishment, went well beyond the familiar forms of creative activity I could reference. . . .
>
> I came to understand that the mix of digital photography and non-linear editing are a tremendous play space for people. They can experiment and realize transformations of those familiar objects, the photos, the movies, the artifacts, in a way that enlivens their relationship to the objects. Because this creative play is grounded in important stories the workshop participants want to tell, it can become a transcendent experience.[17]

That emphasis on transformation is key to understanding the power of the digital storytelling creative experience. Participants can feel that their relationship to media, technology, memory, and themselves has been revitalized or defamiliarized, made fresh again (if with some frustrations along the way). Note, too, the sense of play (play space, creative play) that pervades so much of the first generation of digital storytelling. It points forward as well to the gaming boom to come, and the creative forces of two decades of the World Wide Web.

By 1994, digital storytelling workshops were being taught in San Francisco studios.[18] Participants developed stories about their lives, or the lives of people close to them. Scripts were written to emphasize the creator's speech, what the Center for Digital Storytelling (CDS) came to refer to as the "gift of voice"—a heightened sense of personal presence resulting in the final video. This personal focus helped to decrease jitters about technology and to bring story content to the fore more rapidly, with greater emotional power.

The idea of storytelling brought workshop participants more rapidly into the creative spirit. While technology can seem geekish, and video the province of audiovisual professionals, storytelling is, as we have seen, as close to a universal as human culture gets. Ask someone sitting before a powerful computer to think of stories, and the intimidating nexus of tech before them becomes simply a tool, like a notebook to write upon or a tape recorder to capture voice or a canvas to paint.

Although technologies have developed rapidly, the CDS curriculum has remained relatively stable. Three days see participants from start to finish, beginning with only the idea of making a story and finishing up with a (roughly) three-minute digital video. Participants learn to write a script, handle images (scanning and/or editing and/or obtaining from sources), record audio, edit multimedia within a video editor, and publish a video, either to DVD or the Web. Other technologies are brought in as needed, based on the story's nature and the workshop schedule: digitizing analog materials, for example, or shooting video. (For a full description of these workshops, see chapter 12.)

One of the most widely taught examples of the CDS approach shows how this approach is realized in final product. "Momnotmom" (Thenmozhi Soundarajan, 2000) is a reflection on a mother–daughter relationship from the daughter's perspective. The story isn't a plot-driven one, but a meditation on a human connection over time.

Images show Thenmozhi's mother Thiakavaly depicted over several stages of life. Animations draw our attention to each one, allowing separate emotional charges to be felt: apparent sadness, playfulness, frustration, seriousness. The voiceover—Thenmozhi's voice—organizes these images, not always directly describing their contents. The narration situates them in the mother–daughter relationship framework, for example, Thiakavaly seen in marriage costume, while Thenmozhi describes a sense of loss. The speaker's voice is controlled, but offers meaning through nuanced intonation, as when it drops in pitch to express guilt ("But I also feel guilty, because I think my mom . . ."). A guitar track complements the narration, a solemn performance lending gravity to the words. Repeated rising tones create some energy, but never rapidly. It continues over the credits, carrying the mood past the voiceover's conclusion.[19]

"There's a picture of my mother that I always keep with me"—from its opening words, "Momnotmom" is concerned with mediation and separating layers. We see images and film of the mother, but do not hear her voice, neither directly nor in someone else's reading. The mother poses not for nearby people or for herself, but for history ("for the future . . . searching for the past"). The narrator speaks of distances, either geographical ("across oceans and between cultures") or between herself and her mother. We learn from the closing titles that Thiakavaly received a degree, but nothing of its meaning to her, nor of the process of achieving it. Degrees, photos, film, time, culture: "Momnotmom" packs in a tremendous, subtle meditation on mediation in a very short time.

The success of stories like "Momnotmom" and of the curriculum enabling it led to the founding of CDS in 1998, whose work continues to this day. A growing cadre of CDS instructors offers workshops in the United States and beyond. For a decade, from 1995 to 2005, the CDS hosted a Digital Storytelling Festival, and "1999 . . . was the year people stopped asking what Digital Storytelling *was* and focused on *how* to apply it."[20]

The CDS approach has also been adopted by many individuals and organizations, helped in part by the openness (lack of licensing for) the curriculum.[21] For example, the British Broadcasting Corporation sponsored two major digital storytelling projects, Telling Lives and Capture Wales.[22] Community-oriented and activist projects have found digital storytelling useful for eliciting and sharing local knowledge, combining organizing with outreach. One example is the Mountain Reporter Network, which develops stories about the Appalachian region.[23] Another is the Stories for Change coalition, intended "to connect and extend the network of workshop facilitators and organizations that have come together in community-based digital storytelling workshops."[24] Historical societies connect with local teenagers and children to build location-specific cultural stories—stories of memories—as in the town of Skowhegan, Maine.[25] Some uses have also emerged in health care, where, for example, chronic care patients tell their stories in order to better communicate their experience.[26] Other offshoots include LifeBio ("Customers create an autobiography or the biography of a loved one by using LifeBio's carefully-crafted questions") and TellOurLifeStories.[27]

Educational uses have grown steadily over time, ranging from digital storytelling course assignments to assessment to a master's program. Elementary, middle, and high school students have created stories in class. Streetside Stories, for instance, works with children grades K–8, helping kids tell digital stories about their lives and adjusting the CDS curriculum to suit participants' needs. The videos are shorter than the CDS average, being roughly 90 seconds long, and often feature children's art. One, "The Truth Hurts," consists of a series of drawings, voiced over by an outraged girl who described a rumor cycle among her friends and other girls. The voiceover narrator of "English of My Life by Lili" describes her experience learning a new language after emigrating from China; it also contains drawings, presumably by Lili.[28]

Colleges and universities such as the Ohio State University, University of Houston, Georgetown University, and the University of Minnesota offer a mix of classes, consultation, workshops, and online materials.

Others publicly share examples and case studies of classroom use, including Hamilton College, Williams College, Seton Hall University, Hunter College, and LaGuardia Community College.[29] Two campuses offer degrees in the subject, to date: a master of arts in telecommunications (digital storytelling emphasis) at Ball State University and a bachelor of science in digital arts and design–digital storytelling at Dakota State University.[30] Naturally, individual courses are also being offered, such as one at Queensland University of Technology.[31]

Although there are variations, the sense of digital storytelling remains remarkably stable, if open enough to allow iterations. For example, a California State University, Chico, class generated a five-part definition of digital stories, according to which, for assessment purposes, they should

- include a compelling narration of a story;
- provide a meaningful context for understanding the story being told;
- use images to capture and/or expand upon emotions found in the narrative;
- employ music and other sound effects to reinforce ideas;
- invite thoughtful reflection from their audience(s).[32]

The spread of digital storytelling interest has inspired variations and experiments. After all, the curriculum is based on powerful concepts that allow different implementations. It also rests on a set of technologies, which change frequently. Digital video tools continue to proliferate and re-version, for instance. As a digital storytelling practitioner, I can describe two such variations I've helped develop, teach, and iterate. These variations were supported by the National Institute for Technology in Liberal Education (NITLE), a nonprofit organization offering, among other things, professional development services to small colleges.[33] We first hosted a CDS workshop in Middlebury, Vermont, in 2003. It was brilliantly taught by Joe Lambert and Emily Paulos. After experiencing the curriculum's success and appreciating the tremendous enthusiasm shown by participants, we decided to launch a digital storytelling program, teaching such a class on our own.

After announcing our intentions to do so, an interesting criticism of the approach appeared in discussions with populations across numerous campuses. Some saw the personal, (auto)biographical essence of the CDS curriculum as inapplicable to many classrooms. First, some faculty argued that while they wanted to create a digital story, the content should not be personal in nature. Indeed, more than a few professors were adamant

about removing themselves from narratives. "I care about teaching African politics," one told me, "not teaching about my own interest in the subject." Second, others evoked C. P. Snow's two cultures model, arguing that the CDS curriculum was really suited only to the humanities, as the home of expressive art in academia; personal storytelling could not map well onto the hard, quantitatively based sciences. In response, we shifted our class focus slightly, welcoming "both personal and impersonal" stories to our "multimedia narrative" workshop. So far, the two coexist quite well, with stories of self-discovery appearing alongside explorations of molecular processes.[34]

A second concern about the CDS approach involves timing. Three days—intense, work-filled days—is a long time to allocate to a new practice, even an appealing one. Since the Great Recession began, this problem has sharpened, given constrictions in the labor market and professional development field.

We will explore further details of digital storytelling workshops in chapter 12. For now, we should recognize that as the twenty-first century has progressed, the term *digital storytelling* has achieved some currency. Narrowly, it is usually understood to describe the CDS approach. Consider one *Wikipedia* definition: "Digital Storytelling is the use of digital tools to let ordinary people tell their own real-life stories."[35] That personal emphasis, that popular focus is very much in the CDS tradition. Construed more broadly, the use of digital tools for narrative purposes had grown into a broad field by the time the term "Web 2.0" started being used (and mocked). We can point to a generation of work, stretching from hypertext and hypermedia to browser-based fiction, from Web-based memoirs of Usenet to autobiographical videos.

With the advent of social media and the Web's second decade, a second generation of combining storytelling with technologies began. This will be taken up in the next chapter.