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Metacommentary

Computational Literary Practices and Processes and Imagination

Nick Montfort

The interviews in this book reveal commonalities as well as distinctions in practice. One thread that runs through the projects discussed is that of the literary. Even though these pieces are often not presented as reading matter, they are literary in numerous ways. Of course they engage with story and its relationship to literary figuration and poetics. While some are richly visual and cinematic, they also share a concern for the materiality of the text and how the form of the book will continue to develop in the digital age. As Mark C. Marino notes, almost all of the artists/authors interviewed question whether they are “e-lit people.” The interviewees don’t question their interest in writing and the literary, however, only whether a category of this sort should be used to contain them.

Perhaps even more obvious is that the practices we learn about are all digital, or, more strictly speaking, computational. The important point is not that everything is represented by 0s and 1s, or high and low voltages, but that automatic symbol manipulation is taking place. In these pieces, programs run, and the developers of these pieces do programming in more or less explicit ways.

To understand the practices revealed through interviews and commented upon by the sharp critical writers in this volume, we must consider them to be both literary and computational. Both literature and computation are received, understood, interpreted, and operated, whether by a stereotypically active, straining videogame player or by a stereotypically bored listener at a poetry reading. Literature can be seen in terms of its genres, its forms, and its audiences or readers. Computation appears to us via interfaces, but beneath that it has a particular form and function that could be manifested differently, and that in turn is implemented in particular code, and that, finally, runs on some computational platform.

In this analysis, I will try to bring some perspectives on literature and the literary nature of these practices and works together with a model of cultural computing that I introduced long ago, the five-layer model stated initially with regard to the Atari VCS, a cartridge-based videogame system, and later used to distinguish the platform layer and open the way for the platform studies approach. This helps to show that some of the discussion in the book is at levels that may have otherwise been overlooked, but also that there is an important gap in the discussion—the people interviewed, however much they discussed their processes, avoided discussing many specifics of code and programming.

Literature and e-lit

As Matthew Kirschenbaum riffed on at the 2017 Electronic Literature Organization Conference and Festival in Porto, even today, most of the people involved with digital media and US culture think that ELO stands for Electric Light Orchestra. “Electronic literature,” like “quadraphonic sound,” is something that most people in the world don’t yet have, and yet it somehow already sounds obsolete. This is part of the cleverness of the term: It’s not overly exotic and off-putting, but it signals something new, even if that new thing is more precisely named “computation” than “electronics.”

That “electronic literature” category is an umbrella, or a tent big enough to hold the three-ring circus of hypertext, digital poetry, interactive fiction, playful Twitter and chat bots, interactive cinema, and even indie and mainstream games, as long as the works in question, and the people developing them, are trying to somehow advance the literary while they work with creative computing. “Electronic literature” accommodates both the popular and the avant-garde.

The big tent has virtues, but isn’t the most suitable space for all types of creative production and reception. Writers would sometimes rather be in their *Café Voltaires* (or, to use Talan Memmott’s term, *Café Voltages*) or perhaps in warm and well-loved independent bookstores, in the company of volumes of other authors who reach a large readership in print. As Scott Rettberg, co-founder of the ELO, has said several times before, electronic literature is not so much a movement as a migration. Writers, like cats, are not herd animals. They do not always flock together well. Migrating to the digital medium with others has its challenges. But, it is dangerous to go alone. Those involved with rich multimedia work, with encyclopedic and varied stores of data, and with new narrative

technologies have wisely learned from each other what their practices have in common as well as what distinguishes them; the interviews and commentaries here help to share what they have learned.

Divergent imaginaries

While there are many commonalities in the works of the artists and thinkers interviewed here, I find it important, as well, to identify what isn't in the intersection—aspects of practice that are distinctive outliers. It's important to admit that these artist/authors do not uniformly agree about their processes, or what their views are of digital media's potential and what is important to pursue.

A world arrayed

To begin that process: Much of the work we read about here is situated personally—not always focalized by one individual, to be sure, but threaded in various ways through people's stories and connections. Leishman draws on the pursuit of Daphne by Apollo; Pullinger offers the perspective of Alice; Gorman and Cannizzaro let the reader pry open James' experiences; and while Daniel and Clark do not always hew as closely to a single consciousness, personal experiences and people, along with unusual connections between individuals, are essential to their projects. The exception to this is seen in Helden and Jonson's *Encyclopedia*, which, highlighting the lack of concern we of the anthropocene have for other life, presents only a brief record of each generated species—with no individuals accounted for at all by any sort of inscription.

Encyclopedia is unusual in other ways, too. While all the other interviewees work in multimedia forms, *Encyclopedia* is doggedly monomedia, all text. It presents a minimal style that, while well-designed and elegant, does not seek to compete with commercial works with detailed media components and high production costs. While the other works are not only developed using computers, but also presented on computers, *Encyclopedia* is foremost an installation in which the visitor is invited to take a card and deplete the generated catalog. Here the database format is given room to revel and manifest itself in traditional material form, becoming something like what Piotr Marecki identifies, in the Polish experimental writing tradition, as a “textual cave.” The tables of its

memory are populated only with plaintext records. Helden and Jonson are not only making a database, but responding to the impulse of “catalogism” (as Gerald Prince calls it) and the way databases, grids of language, and card-based records have structured our histories and imagination.

Digital media and/vs. documentary

Several of the pieces and practices discussed also have documentary elements. There are Clark’s “actual real facts” in his projects, facts he began to particularly notice when those at documentary film festivals became interested in his work. Here, amusingly, Clark is a bit like Moliere’s character who realizes he’s been speaking in prose all his life. He discovers documentary ways of thinking about his projects after he has already done, without realizing it, a sort of documentary about Wittgenstein. The outlier in the documentary dimension, though, is certainly Sharon Daniel, whose work on *Public Secrets*, *Blood Sugar*, and *Inside the Distance* begins with the idea of documenting experience and responding to the limited ways in which marginalized people are represented in current documentaries.

Instead of documenting a person’s story or a single, particular incident, Daniel seeks to give a view of social processes and concepts of justice and reconciliation. Mediation can be an alternative to traditional concepts of justice based on vengeance or retribution; similarly, Daniel is not just expanding documentary, but offering an alternative to the way standard documentaries focus on story. Daniel finds that “you don’t need interactive technologies to tell single character, character-driven narratives,” and is more interested in what connects and separates—the table, for instance, that can bring the participants in mediation together by spacing them far enough apart and helping to structure their meeting, allowing it to begin.

Constellations of Association

The way Clark organizes his non-fictional productions, with punning connections that make use of unusual facts, also offers an alternative to the traditional and more monolithic documentary story. However, the challenge that Clark presents is not mainly to the way documentarians focus on particular

subjects and interview people, but to the typical temporal and causal links that are what makes for most sequences of narrative, whether fictional or not. Clark seeks to organize his work according to different sorts of associations—among them, the sort that, as Stuart Moulthrop notes in his commentary, come about in puns. Puns are a denigrated form of making associations and elicit groaning because they involve considering the “wrong” aspects of language, allowing phonetics to override semantics. But they are one of many rhetorical and poetic devices, and punning sounds much more dignified if called “paranomasia.” Shakespeare, of course, used this technique fairly often, even though he is now known as a grave man. A pun is one sort of connection to varieties of figuration, of poetic association.

Readers tracing through one of Clark’s projects are like people picking out constellations in the sky—someone had developed associations of stars into shapes, but the viewer can move through these points, with their imagined overlay, in many rich ways. Others have traced constellations and made poetic leaps in their electronic literature work: Stephanie Strickland’s *V: Universe* is an example. And, the idea of making connections that are associative rather than following a standard story, or monotonously monomythic format resonates with Vannevar Bush’s “As We May Think,” the essay from the end of the Second World War which (although it is about mechanically accessed microphotographed documents) has been conscripted into the digital media canon. While plots of the standard story sort are said to tend deathward, Clark’s *The End* shows that, in a different way of linking, even the absolute of death’s end can become the beginning for another association.

Adventuring and the Other

One of the main and long-running projects discussed, *Inintimate Alice*, is distinctive because it was developed for a particularly discerning readership, or group of players, viewers, and explorers: young people. Pullinger’s work brings the lure and excitement of the different, the exotic, to people who have time for play and learning but are limited in their own ability to pick up and move to China or even to take a vacation outside their own country. Even when Alice returns to her hometown in episodes 5 and 6 of the project, there are adventures to be had and to be recounted. Presenting the possibilities of adventure is a classic use of creative computing, a tradition worth further developing.

While young interactors are often thought to enjoy encountering different places and people, the multimedia computer's ability to bring us to different cultures can resonate with adults, too. The example Pullinger provides is *Flight Paths*, which allows readers to connect with a would-be immigrant whose experiences would probably be difficult for someone born in England to understand, even with the ability to travel and the willingness to consider other points of view. This more serious adventure requires us to step across the globe and into another culture; stepping into another time, and a past war, allows interactors and contributing writers to see from the perspective of a different Other, the unknown soldier of the First World War. While these seem to be a long way from the thrilling adventures for the young that many associate with computer gaming, they are narrative experiences that unfold, that invite us to look ahead from a different viewpoint and to see what will happen—not always a happy outcome, but a process that may help us become better at understanding people and their journeys.

Coming Home, Coming to Grips

While the play of adventure characterizes *Inanimate Alice* strongly and is a thread through Pullinger's adult digital fictions as well, *Pry* gives us a perspective on a difficult homecoming rather than daring travels. James is quite inanimate at times. Gorman's practice does not fashion an interface or a situation of free play and exploration, but one that is fraught. James, like a computer that is leaking memory, suffers from freezing up and is left without the usual control. For him, even what is familiar and should be comforting—details of the space his home—become alien and difficult. The adventure is over; it clearly would have been better not to go. What remains are a confusing jumble of pieces, and attempts at recovery, not some sort of thrilling path.

Clearly, *Pry's* interface is an important aspect. The iPad's multitouch capability is essential to the project, as is this device's ability to present high-quality cinematic images that are also on a textual, legible scale. It seems unlikely that Cannizzaro and Gorman would have made the same work for an installation with projection or, for instance, a monochrome multitouch device. Their consideration of the iOS platform (even if there are not ready-made platforms for electronic literature composition) is deep. They borrow, too, from the structure, presentation, expectations, and interfaces of the book and of cinema, with chapters and scenes used to organize the experience.

The Lever of the Platform

While *Pry* is a work clearly built to avail itself of the iPad's affordances, and we see many of those clearly near the top, interface level, it's possible for practices to relate even more deeply to the specifics of platforms and to our expectations for them. This sort of conversation, with both Flash and Facebook, is seen in Leishman's work from the early-morning days of 6amhoover.com and her projects *RedRidinghood* and *Deviant: The Possession of Christian Shaw*. Careful understanding of the conventions of point-and-click interfaces and animation is part of what went into these projects. Another concern was with the specific platform-level capabilities of Flash (such as the ability to scale objects and zoom into or out of scenes) as a programmable animation system. Although Leishman refers to her site as "redundant" (the web fired it or laid it off, as we Americans would say), it is anything but redundant, even if an older computer is needed to play her Flash productions. It made a significant contribution and is worth further experience. We can only hope that some digital archivist will manage to sack it and preserve it.

In *Front*, Leishman uses her drawing skills and plays on particular interface elements of Facebook, including the timeline and chat windows. Facebook is often known as a platform in a different sense: It is a social media or communications platform, not important mainly as a computational one that can be programmed to develop creative work. Leishman's Fakebook, a closed world that is safer and more controlled (or at least not corporate-controlled), is a way to deeply inquire about privacy and self-presentation online. While many have looked to particular platforms and their capabilities, tailoring their work to what can be accomplished reasonably upon them, Leishman uses the platform as a long lever with which a whole fictional world can be moved.

High immersion, rich production

Having gone through some of what distinguishes each of the interviewee's practices in the digital literary arts, it's only fair to mention that there are some things that unite them—but are *not* typical of all electronic literature, interactive cinema, and digital art.

These writers and artists have all produced polished productions. Some of their projects are immersive and involve detailed, representational graphics,

cinematography, sound recording, and work with collaborators who range from actors (practicing their bodily art) through programmers working with and dwelling in abstractions. One is more minimally presented as a textual installation, but still manifests itself in a neat, regular arrangement. While the styles of collaboration represented in this volume differ, what Anastasia Salter notes about Pullinger's collaborations in her commentary is salient: it "draws on but also resists the top-down, pseudo collaborative models of 'corporate' publishing, and in turn current corporate publishing is being influenced by the type of indie work that Pullinger's electronic fictions represent." Gorman and Cannizzaro collaborate in a different but also non-hierarchical, non-corporate way, as do Helden and Jonson.

Of course there are many practices that are not represented by artists and writers this collection; the terrain is expansive, with many other trajectories and approaches. Some venture into the glitch and/or embrace a more punk attitude and aesthetic. (I do at times, in much of my work on the Commodore 64, for instance.) Some present work that exults in being messy, as with the projects of Jason Nelson, some of which look as if they were hastily drawn in MS Paint and have strange home movies embedded in them. Rough recombinations, rather than seamless connections and divisions, are the stuff of Talan Memmott's performance project *My Molly [Departed]*, originally called *Twittering*. While J. R. Carpenter's work on the page, in code, and in performance is presented in a very tidy way, it grows from a DIY tradition of zine-making and HTML-editing that is not as prominently represented in the practices of these interviewees. Developers of creative bots on Twitter, including Darius Kazemi, Allison Parrish, Mark Sample, everest pipkin, Leonardo Flores, and many others, have programmed automatic participants in a live social network. Some have moved their botmaking activities to the federated, open-source system Mastodon. Many are developing textual interactive fiction, both text-adventure sorts of works in Inform and hypertext-style projects in Twine, which itself may be experimental or conventional, game- and puzzle-based or not, and, like other electronic literature, in a variety of human languages. Finally, there are computer-generated poems, fictions, and experimental writings being increasingly disseminated online and in print.

These interviews and commentaries don't cover everything; no book could. They are nevertheless valuable and provide many insights, of course. My point is just that those who find value in them should not see them as exhausting the limits of digital literary art.

Slicing into fiction (and why we care about it)

As fiction is reinvented, for instance in the work of Gorman and Cannizzaro, Pullinger, Hélden and Jonson, and Leishman, the problem of fiction is being reinvented, too—that problem in the theory of fictionality which can be summarized as “why do we care?” Why, that is, do we have emotional responses to that which we know is not the case? We *know* that James is not a real veteran, and that his life and suffering happen in a fictional world. We know, too, that the whole world of *Encyclopedia* is a computer-generated invention, with extinct species that were never alive in our reality. Yet we can make meaningful connections to and through fiction, just as non-fictional and documentary experiences can move us as well as offering insight.

Some have explained how the interfaces we use enhance our connection to fictional worlds (e.g., Walker). Pulling open James’ view on a tablet, prying a catalog card off a wall, steering Alice through a 3D world, and operating a Facebook-like social media interface could offer us ways to make our operations of fiction machines somehow similar to the way we work things in reality. That might make for a more provocative, even deeper connection than a non-interactive experience or one that is interactive but doesn’t link the interactor to the fiction. And through considering the problem of fiction, we can understand how this issue of interface—and its relevance to the world of a particular piece—applies to documentary projects as well. An interface, depending on its design, can connect us to or distract us from what is being documented.

As I described earlier, the interface seems to me to be only one interesting level—one of five, to be specific.

I refer here (without so far mentioning the top level, that of reception and operation) to that five-level model I developed (see “*Combat in Context*”) and that I developed in collaboration with Ian Bogost as the platform studies idea began to evolve. Even if the platform is not our focus—and it is quite important to some of the practices mentioned, Leishman’s and Gorman’s, for instance—this model can still help to clarify how imaginative digital works are thoughtful designed in many ways, through these several levels.

There are specifics of interaction, which take place between the top two levels (1 and 2); there is also what structures the fictional world, which is on the middle level (3). These forms connect to literary forms and the structures of fiction and poetry: Is it made of perceptions and thoughts, extinct species, places and puzzles, personal exchanges? A bestiary and an epistolary novel can both be

Figure 14.1 A model of five levels of digital art and media, all contextually embedded (Montfort 2006).

presented in the same interface (e-book or print book), yet offering in each case a different fictional structure. As with thinking about the interface level, this applies whether or not a fiction is before us. A documentary could declare in its title that it is about an abstract concept (*The Thin Blue Line*, *The Fog of War*) or it could be structured around an individual, a band, a war. A digital work involved with documentary could be about the incidents in seemingly unconnected people's lives, or it could be about the social and cultural ways people can be seen to be connected and separated.

In the case of the pinching interface gesture that is important to *Pry*, for instance, if connected to the control of sight, this gesture can be metaphorically used to control an iris (round, closing to a point) or a lid (which opens fully and closes to a horizontal slit). Lisa Swanstrom notes in her commentary that the gestures required to traverse *Pry* are “gestures are both like and unlike turning a page.” The visual effect of opening and closing is also a choice that can be more reminiscent of a movie or more suited to reading. To dilate or constrict a camera's iris gives a classic cinematic effect; the lid opening and closing is both more connected to text (since its limit is a line) and to human sight.

Discussion at the top level (1) can happen regardless of whether an artwork or media object is computational; this is the domain of reading, viewing, listening, and making sense in a cultural context. Importantly, however, that cultural context does not just surround (1), but all five levels. How one programs and who learns how to program also relates to the cultural context of computing.

In addition to that top level (1) and the interface level (2), and to the level of form and function (3), digital works also are implemented with particular code (4) and, additionally, on particular platforms (5). Interestingly, the question of developing a custom platform comes up in the interview with Samantha Gorman, and many of the interviewees speak about platform specifics, detailing the capabilities of the specific software and hardware platforms they program on. What seems to me to be missing, even after the fifth biennial online Critical Code Studies Working Group has concluded, is a consideration of how artistic and literary process related to these interviewee's work as programmers. We learn that Pullinger collaborates with programmers and focuses on writing aspects of her projects, but less about how author/programmers work. A future collection would do well to include more code-level discussion, particularly since the Critical Code Studies project is now far advanced.

Computational literature, used for imagination

The digital imaginaries we glimpse through this book's discussions are those of particular digital media works, of course, but we also learn something of the imaginative methodologies of the artists. This is certainly of scholarly interest to those studying the field. It also helps those working with digital technologies to expand our collective ways of imagining, to develop further ideas about what computing can accomplish within culture, what new meanings it can help us develop.

Computers are essentially symbol-manipulating machines, but whether those symbols have semantics and provoke the imagination is up to the work of both authors and readers. As valuable as these interviews may be for those who seek to make new digital work—and, indeed, creative computing should be made by all—they will also be helpful for those figuring out how to productively read new sorts of digital works. Geoffrey Bowker identifies in his commentary that both *Encyclopedia* and *Pry* are, “about how to read. Where the former invites us, through the deliberate incompleteness of the record (matching the deliberative incompleteness of the earth as an archive), Gorman invites us to literally read between the lines, as text and image emerge from the haptic act of separating two fingers on a tablet interface.”

All of the pieces discussed are participating in developing new reading conventions and are to some extent about how to read. In many cases, they

are not simply offering clear new models, but proposing problems of reading that interactors will—if the computer and literature are to connect—have to deal with. It remains to be seen whether the reader's work will be even more challenging than that of the digital author developing in immersive, database, and story forms—but it is sure to have many challenges, and to require attention, experience, and imagination of its own.

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