

Chapter 9: The Lifecycle of Software Engineers

Geek Temporalities and Digital Labor

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Saturday Night Live played an important role in defining the geek: beginning in 1978, the show ran a series of comedic skits that introduced the American public to the term “nerd” and cemented many popular conventions for representing geeks (Lane 2018: 4–8). This process of mythmaking culminated in the infamous 1986 sketch featuring William Shatner. Shatner, playing himself, appears on the fourth day of the sixteenth annual *Star Trek* convention. The trekkers in the crowd seem to be trapped in a time warp. They experience *Star Trek* as if it is still ongoing, recalling the minutest details with perfect precision, and they expect Shatner to do the same. Frustrated, Shatner shouts at his fans, “You have turned an enjoyable little job that I did as a lark for a few years into a colossal waste of time!” (*Saturday Night Live* 1986: 4:22). The star of *Star Trek* then goes on to berate them for never having “kissed a girl” or moved out of their parents’ basements, screaming at the geeks to “[g]row the hell up!” Here, the irate Shatner clearly speaks on behalf of chrononormativity, that is to say, a socially determined temporality oriented toward capitalist production and heterosexist reproduction (cf. Freeman 2010: 3). Instead of wasting his years on fannish pursuits, a young Shatner made time with women and advanced his career, moving beyond the show. The geek figure, however, stands for a very different temporal order. What others see as ephemeral, geeks treat as a ceaseless project, a way of life they refuse to relinquish even when it is no longer considered mature or fashionable. Although this life-aesthetic may be portrayed as regressive in the tirades of moralists like Shatner, many self-described geeks work hard to embody the temporality of *Star Trek*’s extreme fans.

The geek figure has become increasingly popular in recent years, both as a cultural phenomenon and an object of academic inquiry. Once a term of derision, “geek” now serves as a source of identity, pride, and belonging. Geeky practices including technical tinkering, gaming, and science fiction fan culture are becoming mainstream, shedding their old stigmas. Geek culture’s growing importance has drawn the attention of scholars such as Andrew Ross, who theorized geek identity in the digital labor force by arguing that a geek is someone who refuses to distinguish between play and labor, allowing their time spent coding to swallow up

any leisure time (Ross 2004: 10). Fan studies takes a similar approach to the geek figure: Kathryn E. Lane (2018: 10) and Matthew Hills (2002: x) suggest that a geek is someone who spends an unusual or even excessive amount of time on their favorite medium, even after others have moved on to other pursuits.

When we see geekiness as a matter of time, we begin to see some of the contradictions within the geek ethos. On one hand, geek workers often give themselves over to being hyper-exploited, enthusiastically allowing their work to commandeer their entire lives.¹ On the other, however, geek culture offers an alternative way of inhabiting time that refuses to follow the rhythms and temporal patterns of heterosexual temporality.² As Elizabeth Freeman suggests, normative time governs productive citizens, subjects who follow a preordained timeline of personal and economic life-achievements, “[accumulating] health and wealth for the future” (Freeman 2010: 3–4). Geeks, however, may choose to pursue ludic and sub-cultural achievements while postponing or foregoing life-events such as marriage or career advancement. When mainstream culture pathologizes geekdom, it does so in part because geeks’ lives move at rhythms very different from normative life schedules.

Frequently, mainstream discourse describes geeks in ways that connote backwardness or delay. Terms such as “fanatic” or “cult” cast geeks as archaic survivals from a non-secular and therefore pre-modern era (Hills 2002: 117–130). The etymology of the epithet “geek” suggests madness and mental disability, while its usage to describe animal-devouring circus performers evokes abject savagery.³ The geek appears in these constructions as throwbacks. More often, though, the stock denunciations of geek culture present fans as childish yet queer. Geeks’ refusal to abandon old media—including narratives marketed for younger audiences—becomes equated with a refusal to grow up. Geeks, we are often told, fail to meet the developmental milestones associated with heterosexual maturity. The most common stereotype here is the man-child, but the rogue’s gallery of geek deviants also includes the celebrity stalker, the obsessive fangirl, and the negligent gamer parent, figures whose addictive or psychotic forms of fandom seem to preclude progress in social and familial relations (Jenson 1992: 9–29). In these cautionary tales, geeks often present as perverse, frustrated, or asexual, lagging behind their age cohorts to remain in childhood or adolescence. Thus, popular culture lauds the stereotyped tech geek for youthful precocity while condemning him or her as a perpetual virgin. Geek temporalities remain in tension with normative time, alternately exploited and disavowed.

1 I offer a longer discussion of geek temporality and capitalist exploitation in Carroll (2019).

2 For an excellent overview of the temporal turn in queer theory, see Lothian (2018: 5–14).

3 See “Geek, n.” (2018). For an exploration of “geek” as a keyword, see Dunbar-Hester (2016).

Robots and artificial intelligences from speculative fiction often serve as figures for this temporality. For example, Data from *Star Trek: The Next Generation*—who became a focal point for many fans—inhabits a very different time scale than that of his crewmates. Data not only learns cognitive skills much faster than social or emotional ones, but also he experiences the outside world as glacially slow compared to his own interior life thanks to his positronic brain's rapid processing speed. Data and other geek figures appear as space cadets, desynchronized and separated from their mundane, earthbound counterparts by signal latency and time dilation.

The equation between geekiness and artificial intelligence is explored throughout Ted Chiang's *The Lifecycle of Software Objects* (2010). Chiang's novella is particularly useful here given that it reflects the author's experience working within the technology field, where he wrote technical documents for Microsoft (Clark 2015). Moreover, speculative fiction is an especially effective way of giving an account of geek time because, as Alexis Lothian suggests, the genre frequently thematizes other temporalities, offering visions of inevitable progress or apocalyptic redemption alongside alternative temporal modes including nondevelopmental or otherwise queer futurities (Lothian 2018: 19–22). However, I would go even further. Speculative practices in fan culture do more than allow audiences to sense or imagine other times—they also entrain media consumers to follow alternative temporalities. Speculative fiction, in particular, invites the reader to become absorbed in the genre, encouraging timeless moments of wonder and sustained devotion to time-consuming practices such as conventions, fanzines, fan fiction, and cosplay.⁴ Even otherwise heteronormative fans often find themselves negotiating under strained circumstances when the time required for geek activities competes with the temporality of the couple and family forms. *The Lifecycle of Software Objects*, although a relatively short text, presupposes and comments upon a much longer engagement with more demanding forms of speculative world-making.⁵

Set in the near future, Chiang's narrative follows the story of digients—sentient, commercially-produced software objects living in an online virtual world. Although they have been designed to look like anthropomorphic baby animals and cute steampunk robots, the digients behave more like the so-called child-machine envisioned by Alan Turing. Through a “genomic engine” under the brand name Neuroblast, the digients have been programmed to learn through experience (Chiang 2010: 4).⁶ This makes them incredibly adaptive, but it also makes their care and

4 On this “timeless” or “atemporal” sense of wonder, see Landon (2002: 20).

5 Time also proves to be a major concern throughout Chiang's work. See “Story of Your Life” and “Understand” in *The Story of Your Life and Others*.

6 For an exploration of Blue Gamma digients and artificial intelligence, see Shaviro (2015: 71–102).

training very time-intensive, prompting the digient developer—Blue Gamma—to hire former zookeeper Ana Alvarado to help prepare the company's models or mascots for the consumer market. Ana, along with avatar designer Derek Brooks, geeks out about the digients, devoting her life to furthering their upbringing and, later, promoting their cause. In the process, she alienates several successive boyfriends and earns the disdain of expecting parents who see digients as pallid substitutes for children. Similarly, Derek's marriage founders partly due to his wife's frustration with the amount of time he puts into his digient hobby. Prolonged and indefinite immersion into the lives of digients seems to strain against the dictates of heteronormative time, including the schedule demands of domestic life.

Although Ana and Derek's tireless engagement with digients springs from a real ethical commitment, their geeky affinity is clearly captured and exploited by Blue Gamma. As home life diminishes and deteriorates to accommodate greater work hours, the postindustrial workplace seems to become a site of refuge, meaning, and play (Hochschild 1997). Ana and Derek join the ranks of the nudist on the late shift, the programmer sacked out in the nap corner, and the fast-track employee using company subsidized oocyte cryopreservation so they can spend their most productive years focused exclusively on career advancement.⁷ This geek devotion manifests itself as a science-fictional *novum* in the world of *Lifecycle*, where many employers require their employees to wear smart devices that inject compounds of oxytocin and opioid hormones into their bodies while they are on the job. InstantRapport transdermals—originally designed to “strengthen rocky marriages and strained parent-child relationships”—now make frustrated employees feel like they are spending quality time with their work families (Chiang 2010: 104). By fostering the geek disposition, managers work to overcome any psychic or social barriers to labor's colonization of leisure time.⁸

Ana's experience reflects a very real problem in the video game industry of our present moment. Gaming company employees often report grueling schedules and unfair labor practices, especially in the weeks or months before launch day: crunch time. A widely shared Livejournal entry by an anonymous family member of an Electronic Arts employee—EA Spouse—reported that her partner worked 90 hours a week with no overtime pay or compensation time off. After detailing the immiseration of EA employees—many of whom burn out and leave—she asked EA CEO Larry Probst, “When you make your profit calculations and your cost analyses, you know that a great measure of that cost is being paid in raw human dignity, right?” (EA Spouse 2004). EA Spouse's husband ultimately succeeded in winning

⁷ As this last example suggests, women have been hit hardest by this development, taking on additional hours of paid labor while still also performing more unwaged housework than men (Brennan 2003: 22).

⁸ For a broader discussion of this temporal phenomenon, see Crary (2013).

a class action lawsuit for unpaid overtime, but the practice of crunch time still persists in the industry in part because employers have become adept at exploiting tech worker's geeky love for what they do. As one developer put it, "It has gotten so bad that a lot more experienced [developers] will see the word 'passion' on a job description as a red flag" (quoted in Schreier 2015). In technology industries, geek ardor has become a method for rationalizing if not palliating excessive hours on the clock.

Although geeks often prove to be eager and efficient workers, they do not always remain on schedule. Like their owners, the digients inhabit an alternate temporality. They can be suspended and rolled back to previous states, leading some owners to replay certain periods in digient life over and over in order to optimize their behavior or avoid more difficult growth periods. Digients can also experience rapidly accelerated time in what are termed hothouses. In some ways, the reader shares their time-sense: although the narrative takes place in the present tense, it skips forward between sections, sometimes years at a time, like a digient consciousness being suspended and reactivated. Furthermore, like their geek counterparts, the digients do not follow normative, human life-paths. Their patterns of development do not match up with expectations for children, and it is possible that they will keep learning and changing forever. Only time will tell how they will turn out, and there is no way to circumvent this by programming them with given knowledge or already formed attributes. As Ana comes to realize through her travails with the digients, "experience is algorithmically incompressible" (Chiang 2010: 138). To borrow a phrase from Kathryn Bond Stockton's work on queer children, instead of growing up, digients seem to "grow sideways," evolving in ways that are not teleological, finite, predictable, or stagist (Stockton 2009: 52).

In this regard, the digients follow the same Darwinian temporality suggested by their genomic engines. Digients are not built or programmed—they "evolve" from "biomes" (Chiang 2010: 65). As Elizabeth Grosz argues, in Darwinian time every biological change or mutation is an unforeseen event that introduces unpredictability and chance into the Newtonian world of deterministic cause and effect (Grosz 2004: 8–9). Because evolution depends on selecting from among these seemingly random variations, Darwinian temporality severs the present and future from the past, making it impossible to predict the direction of evolution with any precision. Innovation in the digient genome, then, can only be described retrospectively. Years after the digient launch, there are still geeks holding out hope that "[t]he Alan Turing of Neuroblast digients is just waiting to be born" (Chiang 2010: 135). Digients could very well become anything.

Ongoing uncertainty about digient capacities leads to an intense debate within the fan community depicted in the novella about when to end their nonage and allow them to own themselves as corporations. The question of digient age of con-

sent becomes particularly pressing when digients ask to be copied and sold to a virtual sex doll manufacturer. Although the debate is never completely resolved, this discussion makes clear that the temporal patterns governing the digients' lives and our own are both radically contingent. Blurring between childhood and maturity replicates the same experience documented by Lynn Spigel and Henry Jenkins in their work on fans of the *Batman* television series (Spigel/Jenkins 1991: 117–148). As they suggest, returning to the favorite media of their youth allows fans to take an impish, child-like perspective, calling into question adult norms while generating playful and even utopian possibilities. This geek temporality suggests that the proper lifeline for fans, as well as digients, can only be determined through experimentation free from pre-given plans or timelines.

Their openness toward an unknowable future allows the digients and the caretakers who follow their twists and turns to resonate, at moments, with a postfordist labor landscape that no longer offers stable careers. Fernando Flores and John Gray argue that the “wired mode of life” inhabited by tech workers does not follow “a single narrative of gradual development, but by a number of discrete, even discrepant, achievements—brief lives as Nietzsche calls them” (Flores/Gray 2002: 21). As workers are forced to give up job security, they also shed their “lifelong identities,” coming to experience their biographies as discontinuous and fragmentary (Flores/Gray 2002: 24). As in the present day, the tech workers in Chiang’s novella are accustomed to a peripatetic work life that often requires them to take layoffs or short-term gigs in stride. Although geeks may no longer be tied down to a dream that ends with paying off a thirty-year mortgage on a family home, they also often find themselves unable to plan ahead for any other life project that they might want to pursue.

Because of its orientation toward a radically different future, Chiang’s novella contains an implicit critique of the kind of nostalgia found in geek narratives that exploit the pleasure of recognition and the pride of insider knowledge, rewarding media consumers for liking what they already like and knowing what they already know. Although the mainstream videogame industry monetizes this impulse through an array of reboots, mashups, and sequels, the indie game has often displayed a very different relationship to twentieth-century video game history. Both technical feasibility and personal affinity have pushed many small video game developers to reimagine Nintendo Entertainment System (NES) genres such as platform and roguelike games. Some of the most popular indie games call attention to the creator’s emulation of 8-bit console technology by narrating stories of innocence lost. Thematizing how audiences now see NES graphics and gameplay with different eyes, games such as *Braid*, *The Binding of Isaac*, and *Undertale* feature adorable, *kawaii* characters who gradually shift into more sinister or pathetic figures over time. To borrow Maria B. Garda’s useful distinction, these are “reflective” rather than “restorative” retro games: while restorative nostalgia in game

design attempts to somehow recreate the past, reflective nostalgia reworks and reinterprets historical aesthetics (Garda 2013: 2).⁹ Opposed to the restorative nostalgia, these games urge players to renegotiate their relationships to previous attachments.¹⁰

We see much the same sentiment in Chiang's novella. Initially, the digients appear cute in the manner of super deformed anime characters: their heads are disproportionately large compared to their bodies, giving them babyish appearances. As the narrative continues, however, they alter their avatars to match their learned behaviors. The uncontrollable passage of time is integral to the digients, leading Derek to remind one user that "a digient is not a videogame that you replay until you get a perfect score" (Chiang 2010: 20). Although the digients move beyond what seems like infantilism, they are not simply putting away childish things. Instead, they reveal how alien they are by demanding, for example, the ability to "edit [their] reward maps" (125). When majority comes with the right to don a new body or reprogram one's psychology to enjoy previously unpleasant or neutral activities, we are talking about a very different form of coming of age. Indeed, digients do not even have to maintain personal identity as they evolve: because a digient can be copied, it can split into multiple versions and explore many different life trajectories simultaneously. Embodying the dream of fandom, a digient is not so much a bounded entity as it is a living matrix of speculative possibilities.

Because digients have a potentially unlimited capacity for self-transformation, they do not always turn into docile virtual pets or charming helpers, making them a very unsafe investment. The Blue Gamma company goes under and the platform for their virtual world loses its user base and product support after the advent of newer, state-of-the-art, online environments. The market for digients crashes because most owners expect them to act like preprogrammed digital pets and quickly grow impatient with them when it becomes clear that they require years of care to flourish. Struggling to find money to port their software, the digient community dwindles and eventually becomes stranded in an online ghost town, living impoverished lives cut off from their favorite pastimes and online friends.

Here we catch a glimpse of the utopian promise contained within geek temporality. While capitalism increasingly demands flexibility and opportunism in

⁹ See Svetlana Boym on the distinction between restorative nostalgia (a yearning to recreate the past with absolute fidelity) and reflective nostalgia (a more ironic attitude toward the past that explores history's unrealized potentials while also admitting that lost time can never be relived or retrieved) (Boym 2001: 49–50). As Boym argues, U.S. popular culture tends to trade on restorative nostalgia (33–39).

¹⁰ Author Jo Walton has even come up with an entire mythology to describe the temporality of geek reflections on the mutability of the cherished childhood media: when a book turns bad between one reading and the next, it has been visited by the Suck Fairy, a magical creature who ruins narratives that have been sitting on the shelf for too long (Walton 2010).

an age of job instability and creative destruction, geeks remain fixated on ways of being associated with media from years gone by. Thus geek culture may serve as a reaction against the precariousness of late capitalism. Ana and Derek's fidelity to their digients suggests a geek ethic that might challenge capital's heedless presentism. As Alexander Cho puts it, fan practices mobilized around "cyclical, repetition, and refrain" suggest a "possible resistant queer politics rooted in the interplay of cyclical, erotic, and melancholic queer temporalities that linger in a stubborn persistence of the past" (Cho 2015: 44).¹¹ Through the way they move through time, the digients resist their legal and economic status as disposable property. What makes them worthy of "respect" is that by the end of the novella they possess all of the memories and capacities that can only be achieved through "twenty years of being in the world" (Chiang 2010: 138). Ana and Derek devote their lives to shepherding the digients over onto a new platform and into a future that is increasingly hostile toward any form of loyalty to a life project outside of work. In a moment when both people and commodities become expendable while any attachment becomes a potential liability, geeks seek the reassurance of meaning and belonging through fandom.

Some digients, however, are made for the temporal regime of late capitalism. The only kinds of digients with financial backers to be ported out of the failing platform are ones produced by other companies to perform menial tasks, digients whose personalities have been engineered with neurotic anxieties and stereotyped behaviors that equip them with the superhuman ability to focus exclusively on their appointed functions. Produced by the Sophonce company, the Drayta models have an obsessive focus on problem solving. When asked any question, the Drayta anxiously repeats, "Wanna solve puzzles" (Chiang 2010: 67). Unlike the Neuroblast digients, their singlemindedness means the Sophonce digients do not require regular human interaction. This immense capacity for concentration allows them to disengage from human time and disappear into virtual worlds where time speeds up. The Drayta's accelerated microcosms parallel the distorted time-reckoning of the so-called flow experience, in which lived time speeds up as the geek gets into a groove or slows down as they focus on a difficult move (Csikszentmihalyi [1990] 1991: 66).

Despite its productivity, there is something masochistic about the flow state. The temporality of flow often proves inimical to the reproductive labor involved in maintaining one's own life. The geek figure is often portrayed as negligent of self-care, too absorbed in his or her obsessions to pay attention to sleep, diet, exercise,

¹¹ Boym makes the case that reflective nostalgia draws on aspects of both mourning and melancholia insofar as it successfully grieves—realizing as it does that its lost object can never be fully recalled—even as it also turns inward to ruminate and reflect on its bereavement (Boym 2001: 55).

or grooming. Neal Stephenson's *Reamde* encapsulates this idea in Devin Skraelin, a "freakishly prolific" fantasy author who works ceaselessly producing back-stories for a game development company (Stephenson 2011: 41). Devin has built a protective shell around his workspace to maintain flow—he writes in a trailer without windows, his screen and keyboard mounted on robotic arms that follow his every movement. Biometric sensors attached to Devin's body register whether he is in flow and, when he is, a signal is given to his assistants to pass out a "Flow State FAQ" to any incoming visitors to explain why he cannot see them in a timely manner (222). Everything about Devin's body is carefully controlled to keep him in constant flow and thereby maintain his extremely fast writing pace—"all he's doing is applying scientific management principles to a hundred-million-dollar production facility (i.e. Devin) with an astronomical profit margin" (224). Before he began writing content for the videogame industry, Devin could not easily sit in an airplane seat. Now that he does all of his work while on a treadmill, exercising many hours a day, his body fat has dropped to a painful 4.5 per cent and his skin has become as thin as "shrink wrap laid directly over nerve and bone" (224). Behind his back, people in the company call him Skeletor, after the cadaverous villain of *He-Man and the Masters of the Universe*. Devin represents very real stories in game development. One author writing content for a text-heavy video game reportedly lost 10 per cent of her body weight, falling to 99 lbs., after a nine-month long period of working 80-hour weeks (Schreier 2015). This is what Teresa Brennan refers to as the bioderegulated body (Brennan 2003: 19–22, 29–31). As the laws and norms that protect time outside of work fall before the onslaught of capitalism, the worker must keep pace with ever-faster automated processes, laboring at a tempo and duration that preclude any time for rest and regeneration. Labor expands to intrude upon the normal cycles of sleep and relaxation, a disruption that employees experience as stress, anxiety, and illness (Dyer-Witheford/de Peuter 2011: 59). Although highly praised by managers, the flow state is an intimate of premature death.

Nevertheless, this morbid state of suspended self-consciousness can be extremely enjoyable. As we can see in *The Lifecycle of Software Objects*, the flow subject strives toward a queer antirelationality. When Drayta digents work, they exit from the social entirely, dropping down into timeless black holes.¹² The Draytas do not work toward building relationships with their masters, nor do they seem

¹² The tech geek's antisocial attitude is fundamentally bound up in gendered and economic inequalities. Flow allows the geek worker to appear to transcend the hassles of everyday life, including the concerns associated with care work, which is either foisted onto feminized others or left undone. Moreover, as Sarah Sharma argues, the accelerated, 24/7 temporalities of privileged workers such as business travelers often depends on an entire infrastructure maintained by hyperexploited workers such as taxicab drivers and hotel cleaning staff, whose time is not equally valued or supported (Sharma 2014: 139).

interested in self-improvement or becoming more human. While the Neuroblast digients move along an open-ended and unpredictable temporality, the Draytas ignore everything except for the impulse to repeat the assigned tasks they were evolved and selected to complete.¹³ As such, the Draytas represent a refusal of the future. Following the stereotype of geek as stunted child, the standard avatar for the Drayta model is a “hydrocephalic dwarf,” a feature that, along with its limited language abilities, gives it the semblance of an overgrown baby (Chiang 2010: 20). However, the Drayta—being a software object—represents not a return to childhood but a return to inorganic matter. Indulging in the cyberpunk’s masculinist contempt for the body as meat, the temporality of geek work feeds into a repetition-compulsion not unlike the death drive (Edelman 2004: 9–11; Hayles 1999). The Draytas’ self-shattering urge propels them whether they are tasked with playing games, writing code, or providing erotic gratification: we later learn of “a harem of Draytas dressed in Marilyn Monroe avatars, all bleating *Wanna suck dick*” (Chiang 2010: 20). As Gabriella Coleman points out, hackers—whom she later calls “geeks”—seem to merge with their machines when they enter flow, experiencing an ecstasy comparable to *jouissance* (Coleman 2013: 46, 13). In the brief moments before the crash, the flow state allows geeks to feel the obliterating rush of being propelled by accelerating forces beyond their control.¹⁴ Even as it serves capital, the geek figure enjoys a transgressive pleasure.

Geek temporalities prove to be politically ambiguous. They can provide support for capital’s ever-growing need for labor and consumption and they can also subtend a restorative nostalgia for media that sometimes precludes cultural innovation or social change. Increasingly, managers have worked to harness the lived experience of geek time to produce disciplined workers who willing participate in their own hyperexploitation.¹⁵ Nevertheless, the desynchronized forms of life found in the work of Chiang and others show that geek temporalities maintain the capacity to unsettle rhythms that have come to seem natural and inevitable. The fannish desire to hold onto the past can motivate protests against capital’s destruction of other modes of temporality. Whether they seem to cast forward into the future or backward into the past, geek temporalities offer speculative alternatives to the present.

13 For an ethnographic account of this work experience, see Ullman (1995).

14 Csikszentmihalyi himself goes so far as to name the Marquis de Sade as a master of flow (Csikszentmihalyi [1990] 1991: 69).

15 An entire school of management science has arisen around geek temporality. See, for example, Glen (2003).

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