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Nerd Ecology

I will take a serious approach to a subject usually treated lightly, which is a nerdy thing to do.

—Benjamin Nugent, *American Nerd: The Story of My People*

When we try to pick out anything by itself, we find it hitched to everything else in the universe.

—John Muir, *My First Summer in the Sierra*

On a cold spring morning in the early twenty-first century I stood ankle-deep in mud on the banks of the Woonasquatucket River in Providence, Rhode Island. The Woonasquatucket River Watershed Council had called for a cleanup in Olneyville, where the Industrial Revolution could still be evoked from the ruins of factories littering the banks. Our task was to pull junk out of the water: shopping carts, fishing line, tires—a regular day in the restoration of an urban watershed. The Woonasquatucket had been industrial for as long as there had been industry in North America; its factories produced cloth, machine parts, jewelry, locomotive engines, and all the waste thereof. That is what worried me. Try as we might to avoid the experience, we had to get wet to recover the garbage. We had to be smeared with the mud of the river and everything the mud contained. Though I had not read the report of the Environmental Protection Agency on the Woony, as the river is affectionately called, I would not have been surprised to learn of the dioxins, PCBs, heavy metals, and pesticides hidden in its sediments. Neither would anyone else. The people on the banks that morning shared a sense, as Robert Sullivan once wrote of the Meadowlands, that one would need “magic or the assistance of angels” to get all of the poison out of that river (Sullivan 142). Already dripping

with God-knows-what, I wondered aloud what kind of superpowers I would develop from exposure. There was sufficient precedent: Daredevil and the Toxic Avenger had sonar and superstrength bestowed by a toxic waste spill. Would I sprout wings? Command the winds like Storm of the X-Men? (Personally, I favored telepathy or pyrokinesis.) Then, right on cue, my mentor appeared, wheeling his chair back and forth across a footbridge above us. “Don’t worry kid,” he yelled, “you’re already a hero. You clean up that river real good!” My neighbors nodded gamely and waded back into the water. We would be the Superfriends of this place. With our uncanny abilities, we would make sure that, one day, the alewife would spawn, herons return, and teratogenic ooze fade into memory. All we needed was some decent mutation and a snappy origin myth.

I recall this story not because it came true—I have not sprouted wings (yet)—but because everyone on the river that morning understood what I had asked. Partly disguised by outdoor adventure clothing, we were a group of earnest, bespectacled persons who had grown up on comic books and Saturday morning television. These sources suggested that the world should be defended, that defenders hid among us as school children, newspaper reporters, and Amazon princesses. Such people were hidden in our bookish, asthmatic selves, just waiting for the right industrial accident to appear in their full glory. In the meantime, we were biding our time in Rhode Island and around the world, doing good as our inhalers and allergy medicines might allow. Our nascent lifeways, still struggling toward the name of “nerd culture,” would be put in service of the ecological revolution we had been promised since childhood. As American nerds of a certain age, we had grown up in the wake of Earth Day and the Space Program. We had read about national recycling protocols in 1973, and expected the arrival of a bullet train at any time. We knew we possessed the skills to respond to the ills of modernity, but we were moving too slowly given the scope of the problem. In her analysis of our predicament, the philosopher Val Plumwood contends that the delay is “not primarily about more knowledge or technology; it is about developing an environmental culture that values and fully acknowledges the non-human sphere and our dependency on it, and is able to make good decisions about how we live and impact on the non-human world” (Plumwood 3). *Culture*, in this expansive sense, encompasses the practice of everyday life and the structure

of planetary economies. Nature is not a set of resources for civilization, it is the *oikeios topos*, the “favorable place” or home of human life, a matrix of elements, species, and planetary forces (Moore 3). Can nerd culture spawn environmental culture, like the Batcave spawns Batman (POW!)? Despite (or because of) our deficiencies, can nerds defend the earth as a favorable place for humanity and our fellow creatures? The desire to make it so lies at the heart of this book.

The question of a nerd ecology arises in the early twenty-first century at a moment when the meaning of *nerd* is changing. In American popular culture of the last century, “nerd” begins with shame, a name one is called, not a name one calls oneself. It denotes, at first, a socially awkward adolescent, usually a white, middle-class boy, who is sickly, unathletic, and unpopular: someone other boys do not befriend, and girls do not desire. At one end of the spectrum, a nerd may be a boy who will “grow out of it” in a metamorphic adulthood. At the other end, a nerd may be an immature sociopath, corrupt and contagion incarnate. The biological constitution of the term is unmistakable: nerds can be the larval form of a healthy adult, or a pathological incursion in the body politic. The perplex of a nerd ecology is, at first, an issue of the nerd in socio-ecological context, as contagion or genetic deviant in a healthy population. The nerd may also be understood as an agent of production in the global economy that emerged after the collapse of Soviet communism in the late 1980s. Here, the nerd is a knowledge worker, an avatar of specialization whose mastery of computer technology is a cornerstone of the digital age. In this form, nerd labor is necessary to economic growth, and amply rewarded, at least at the entrepreneurial end of things. This is the so-called “revenge of the nerds”: the high school geek becomes the digital capitalist. The prey of the schoolyard becomes the predator of the professions. Paragons of this type, such as Steve Jobs and Bill Gates, generate stories that become a legendarium for Webslingers. Even here, there is a dark ecological subtext: the reversal of role leaves the Darwinian nightmare of childhood intact, though the losers are Congolese coltan miners and Chinese factory workers. The triumph of nerd technology is built upon environmental injustice on a global scale. A nerd flaps its wings in North America, and a typhoon hits the Philippines. Who else invented fracking, semiconductors, and high school, after all? The brainiacs of yore are smart enough to notice this inversion, so American culture grows

more ecological as nerds take charge of media production. Chris Hardwick argues in *The Nerdist Way* that this practice of skillful self-appropriation marks the boundary between nerds and *nerdists*. A nerdist, he says, is “an artful Nerd” who doesn’t “just consume,” but “creates and innovates” (Hardwick x). The Nerdist uses the nerd powers of “overanalysis” and “hyper-self-awareness” for good (x). Nerdism is a cultural technology for the ethical transformation of self and world motivated by the American urge for progress through hard work. Can Nerdists invent environmental culture? The first step in artful invention is self-awareness on the part of the artist. We now investigate the origins of the nerd in order to understand better what nerdism has to offer ecology.

Disgusting mess: A brief survey of nerd discourse

Nerds are people, but also stories and their components: figures of speech, rhetorical topoi, arguments and anecdotes, dystopia and utopia on a school bus, sharing a Twinkie. To know what it would mean to act on nerd discourse with skillful means, one must comprehend the tropes of unpopular culture, that is, the culture of the unpopulars, that is, nerd culture as the repository of identities, narratives, and aesthetics. The constitution of the nerd as a social identity through biological categories, the imbrication of nerds in ecological systems, and the tangled bank of self-recycling—*nerd ecology*—are the products of a cultural negation negated, turned back on itself, to produce an affirmation that appeared in popular media before it is appropriated for literary and political ends. I will first trace the terms of unpopularity, and then double back, as did nerd culture itself, to appropriate and contradict those terms. According to the *Oxford English Dictionary*, the word *nerd* is of uncertain origin, having first appeared in print in the Dr. Seuss’ book *If I Ran a Zoo* in 1951. In that book, the protagonist makes a list of the fantastic animals that would appear in the ideal zoo, including “a Nerkle, a Nerd, and a Seersucker too,” an origin that reveals little of the word’s significance. However, by the time the nerd appears again, circa 1975, in the television series *Happy Days*, it has taken on the meaning of an awkward, socially inept young person who is shunned by his peers and condemned for ugliness, offensiveness, and

dedication to specialized, often technical pursuits seen as antisocial by middle-class, suburban culture. It is here, in the connection to specialization, that the terms *nerd* and *geek* become entangled in a web worthy of Spider-Man himself. *Geek* appears to be of much older provenance, and once designated a person who decapitated chickens. This limited meaning was applied more broadly to indicate the pursuit of hyperspecialized knowledge, as in the terms “math geek,” “science fiction geek,” and even “knitting geek” and “baseball geek,” if those otherwise ordinary activities are pursued with dedication that verges on obsession.

Nerds are smart people, but in his study of American anti-intellectualism, Richard Hofstadter argues that intelligence itself is not stigmatized in American culture. In “The Unpopularity of Intellect,” he characterizes *intelligence* as an “excellence of mind” directed toward practical and concrete ends (Hofstadter 25). Inventors, entrepreneurs, and soldiers are celebrated in the United States, and these professions are full of intelligent people. Hofstadter contrasts this positive trait with *intellect* as the “critical,” “creative,” and “contemplative” side of the mind (25). The intellect questions the purpose behind activity, decides to create something other than planned, and reflects on the value of the result. This behavior has been stigmatized in mainstream culture. Smart, then, is not the problem. The problem is the performance of intellect in public. To question, create, or contemplate is the beginning of deviance and treason. Hofstadter, a historian at Columbia University, came to this conclusion in 1962, as the paranoia of McCarthyism gave way to the optimism of President Kennedy’s administration, friendlier to intellectuals. It is important to note these prior cycles of unpopularity for intellectuals. Nerds have risen and fallen before the contemporary “turn to the nerd” that characterizes the culture of digital innovation. In light of this turn, it is helpful to examine the ancestral idea of the “egghead” in the decade after World War II. Hofstadter cites a novelist, Louis Bromfield, whose essay “The Triumph of the Egghead” (1952) anticipates the negative stereotype of the nerd. Eggheads may be overly assertive and contemptuous of “the experience of more sound and able men” (9). At the same time, they are “over-emotional and feminine in reaction to any problem” (9). Eggheads are affective hermaphrodites who display masculine and feminine characteristics in an offensive and dangerous manner. Hofstadter traces the lineage of this position to disparate sources: Jacksonian hostility to experts and expertise (14); the disdain for pure as opposed to applied

science (11); the culture of business and its suspicion of other kinds of authority (12); and the identification of the university as training ground for subversive Leftists (13). With the advent of the Space Program and the growth of the Civil Rights Movement, these stereotypes were partially displaced by the role of the public intellectual who improved society through engagement with the life of the nation. The early Cold War period was hospitable and inhospitable by turns to the performance of intellect in public. The performative aspect of egghead identity links the trouble with nerds to the trouble with antiracist, feminist, and gay liberation movements. Postwar culture had begun a renegotiation of public and private identities that expanded the boundary of acceptable behavior, along with the wish that nerds, among others, would keep it to themselves.

The public performance of intellect distinguishes nerd culture from personal geekiness. Geeks can be private, which makes them less disturbing. Proponents of “geek” argue that the term possesses a positive connotation, but this is an effect of its restricted area of operation. One may proclaim oneself a geek to affirm a passionate pursuit or technical expertise, but such interests, by themselves, threaten no one. Geeks point to the negative connotations of *nerd* from which geeks wish to dissociate: social dysfunction, personal isolation, and inability to communicate effectively with others in conventional social situations. Sociological research into nerd identity in American high schools confirms that *nerd* is a pejorative label applied from the outside by persons of superior social status. It is an all-purpose negation: no matter how many other social groups a school has—“jocks,” “beautiful people,” “cool kids,” “stoners,” and so on—nerds are the opposite of all of them, an umbrella term for unbelonging. Mary Bucholtz, who researched the language patterns of “nerd girls” in suburban California in the 1990s, observes that her subjects affirmed this negative definition of themselves as a means of creating a stable group identity (Bucholtz 211). This strategy prefigures the trends found in later nerd literature, where the term is reversed, like *niggah* in hip-hop and *bitch* in feminism, into a forbidden self-affirmation. If the novelist Rick Moody is right, and *nerd* arose as the opposite number of *cool*, then there is a direct line from 1950s counterculture to the rise of the nerd (Moody 167). If cool kids resisted the forces of postwar conformity by appearing not to care, and followed the underground currents of jazz, the Beats, and the nascent Civil Rights Movement, nerds cared too much about the technologies that produced

the suburban sameness decried by hipsters. One of the chief ironies of this history is the transformation of the nerd in the 1990s into an oppositional identity that signified self-affirmation in the face of peer rejection. Coolness and nerdiness switched places as markers of social conformity and rebellion. Christine Quail warns us that the categories of cool were subverted by their incorporation into commodity culture. "This consumer commodity, as it is (re)produced in film, television, and other popular culture texts, has proven to hold significant cultural weight and economic benefit for media industries, at the expense of fully understanding those who would be 'jocks' or 'nerds'" (Quail 461). One must keep this cooptation in mind when dealing with the texts of nerd representation, lest we confuse the evolution of the *figure* of the nerd with the persons labeled nerds.

That distortion already appears on television in the 1970s in contexts that preserve the nerd as the antithesis of cool. In *Happy Days*, "Nerd!" begins as a mild epithet used by Arthur Fonzarelli, "the Fonz," as he prods his square friend Richie Cunningham into a broader frame of mind in the American Midwest of the 1950s. A hipster who wears a leather jacket and rides a motorcycle, Fonzie advocates cool but defends the less cool, including the Cunningham family, from whom he rents a room. In an episode called "Fonzie Versus the She-Devils," the Fonz rescues his cousin Chachi from the clutches of a gang of girls who want to cut Chachi's long hair. Fonzie teaches the gang a lesson by appearing in nerd drag, impersonating a shy, awkward, badly dressed boy who throws himself on the mercy of the tough girls. Having fooled them into believing he is a nerd, Fonzie exits the room, only to kick open the door to reveal his true self. Like Locke in leather, he lectures the girls on the value of tolerance. "I'll give you somethin' to do," he says in high swagger, "Write down five hundred times, *Live and let live*." Though Fonzie tells others not to be so nerdy, he believes that nerds are cool kids waiting to happen. In this way, *Happy Days* both reinforced the traditional negative connotations of the word and deconstructed the nerd-hipster opposition. This defense prepares the way for the transformation of nerd identity in later media.

Happy Days posits the nerd as a middle-class white boy in need of enlightenment. The whiteness and maleness of the archetypal nerd is an important aspect of this identity well into the 1980s, when representations begin to shift in terms of race and gender, if not class. Ironically, Richie

Cunningham reveals the defective nature of the nerd precisely in those terms. As Ron Eglash observes, “we might note that in comparison to, say, Hitler’s Aryan Übermensch, the geek image is hardly a portrait of white male superiority” (Eglash 50). For Fonzie, his nerdy friends and relatives are defined by their inability to fend for themselves, by a failed struggle for existence in the absence of a defender. Though *Happy Days* does not address this theme directly, the need for a defective white boy to be defended against the violence of women suggests a queerness to the idea of the nerd. If such a boy could not be described as gay—television was still evolving openly gay characters in the 1970s—he was certainly an example of failed heterosexuality. In his analysis of Plato in *Rebel without a Cause*, Eglash asserts that “nerd identity will come at a price, threatening the masculinity of its male participants” (51). From this angle, Fonzie’s defense of Chachi constitutes a coded assertion of gay rights, but the need to defend a gentle boy from physical abuse marks a limit to the emancipation of the nerd. Unlike the Fonz, Chachi does not turn into a superhero to defend himself. He must be protected by an older, stronger man whose working-class ethnicity underlines his dominance. Nerds still need defenders among men whose sexuality, physical strength, and social status are not impaired.

The figure of the nerd undergoes an important shift in the 1980s, just as the personal computer and the technology sector gain importance in the American economy. The nerd begins to achieve autonomy from the patronage of heteronormative men, and the role of nerd diversifies along lines of race, ethnicity, and gender. These shifts are linked as cause and effect: once the nerd proliferates into different forms, the possibilities of nerd narrative expand. Once the nerd is no longer a sidekick, but a member of an alliance, it becomes possible to compensate for physical inferiority with economic power. The touchstone for this transformation in popular culture is the 1984 film *Revenge of the Nerds*, a college comedy that appeared on the heels of *Animal House* (1978) and *Porky’s* (1982), the cinema of sexist vulgarity. The title, *Revenge of the Nerds*, is somewhat misleading: the titular revenge does not involve the destruction of an opposing group, but the creation of a marriage plot, in which a rejected group protagonist is accepted into college society as a new kind of cool kid. This plot is sponsored by a privileged setting: “Adams College,” the kind of elite private school that features a strong Greek life and vibrant athletic supporters. Greek

life is dominated by the “jocks,” the traditional nerd enemy, now engaged in the rituals of social bonding that will lead to advantageous alliances after graduation. Louis and Gilbert, the initial protagonists—white, male nerds—fail to break into these elite social circles due to their traditional failings of social ineptitude and physical inferiority. Instead, they bond with their fellow freshmen who have been exiled to the gym after the football team appropriates their dorm. At this point, the plot resembles the typical college farce, and even World War II movies, in which unlikely heroes triumph over adversity by forming a “band of brothers,” a surrogate, all-male family. But *Revenge of the Nerds* departs from this pattern by introducing inclusiveness. When Gilbert and Louis form their rival fraternity, they recruit a gay black man, a Japanese student, a mute violinist, a slovenly stoner, and an engineering wunderkind. (It is as if Akira Kurosawa had made *Seven Samurai* with American losers.) Together, this group tricks its way into Lambda Lambda Lambda, a national black fraternity, absorbing its otherness into a white-led, multiethnic group. The alliance diversifies by gender when a corresponding sorority, Omega Mu, is introduced to serve in the supportive girlfriend role. The “Lambdas” and the “Omegas” are coded by name as outsiders: the Greek letter λ is associated with the Gay Rights movement, and the “omega” gestures to the wolf pack structure to indicate the lowest rung in the social hierarchy—in this case, the “omega-females” who contrast with the “alpha-female” girlfriends of the jocks. The ecological discourse is coded directly into the character types: the film acknowledges the traditional role of nerds as evolutionary dead-ends, reproductive failures, and social outcasts.

The film transforms these initial conditions in a utopian plot of social acceptance whose earnestness runs counter to its origins in farce. Through a series of reversals, the Lambdas and Omegas overcome adversity and gain acceptance into the elite culture of the alpha characters. This metamorphosis represents the triumph of the combined group in a battle of the bands, in which the Lambdas form a supergroup backed up by the Omegas. The Lambdas are transformed by performance into the pop-cultural roles that correspond to their previously stigmatized identities. Lewis and Gilbert appear as New Wave electronica heroes dressed in bright yellow jumpsuits characteristic of nuclear power plant workers. They play computer control boards of the sort that proliferated from the European avant-pop scene. They dance the “Robot,” simulating the staccato rhythms of robots in science fiction films of the 1950s

and 1960s. Their association with subhuman machinery becomes a path to pop-cultural cool. “Poindexter,” the mute violinist, becomes a punk, while “Booger,” the Belushi-style slob, becomes an avatar of “fat Elvis.” Their happy band of racial and sexual aliens is similarly transformed. Lamar, the “gay black” character, becomes a clone of Michael Jackson from the “Thriller” video of 1983, gesturing toward the queer, monstrous King of Pop as irresistible cultural force. Takashi is also queered as the Indian chief of the Village People, bedecked in buckskin and war bonnet. The Omegas, in the role of backup singers, assert retro-cool by dressing as a Supremes-style girl group. So dynamic is this musical alliance, which combines the funk, New Wave, and punk vitality of the 1970s, that the jocks and popular girls have no choice but to accept their former antagonists into the circle of impolite society. The aura of post-Civil Rights amity is cemented when the national Lambda officers, gazing at the students with Malcolm X-grade gravitas, defend their nerd brothers from the revenge of the jocks. “No one’s really going to be free,” Louis intones, “until nerd persecution ends.” And so it does.

If this plot overthrows inherited narratives of nerd oppression in favor of evolutionary liberation, it also reminds us never to confuse nerd figuration with nerd history. If we read the *Happy Days-Revenge of the Nerds* vector as a history of nerds, one would suppose that the singular white boy came first, sometime in the 1950s, to be followed by nerds of color, gay nerds, and nerd girls sometime between the 1970s and early 1980s. Nerd history would follow the contours of post-1960s multiculturalism from the perspective of the white middle class, starting with the Civil Rights Movement, the struggle against the Vietnam War and the Long 1960s, culminating in the identity politics of the Reagan Era. Even if feminism and critical race theory had not taught us to doubt narratives of the white guy as end of history, American culture would undermine these accounts. If we take the nerd to be a social type that arises at moments of economic transformation away from manual labor and toward a “higher” technology, we are forced to conclude that nerd-like figures have arisen before, in history and in art, as revealed by a glance at the nineteenth century. As Sonia Di Loreto points out, Ichabod Crane, the protagonist of Washington Irving’s “The Legend of Sleepy Hollow” (1820), is a clumsy, ectomorphic townsman whose antagonist is a physically vigorous huntsman (Di Loreto, personal communication). Maria Mitchell (1818–1889), the first

professional woman astronomer in the United States, was the daughter of a Quaker family that believed in gender equity in education. She never married, but became the first appointed member of the Vassar College faculty after discovering “Miss Mitchell’s Comet” in 1847. Booker T. Washington, called “The Great Accommodator” by W. E. B. DuBois, sought to assimilate ex-slaves into American society through education in literacy and the trades. Through the Tuskegee Institute, he trained several generations of African-American teachers as part of a strategy of racial uplift in the American South. Each of these figures represents a different moment in the Industrial Revolution when new technologies created new possibilities for American economics beyond the gentleman farmer of Jeffersonian agrarianism. Into the twentieth century, as technological utopianism takes hold in the cities of the East and Midwest, the American inventor becomes a hero of capitalism. Thomas Edison, the great idea man, was also a great failure before he was a success. Madam C. J. Walker, née Sarah Breedlove, built an empire of black hair care products after illness took her own hair. These failures of disfigurement presage the poindexters, boffins, and eggheads of World War II, who model the evil genius and the science hero of the late twentieth century. Are they not part of the history of the nerd as well?

In order to answer this question, it is necessary to ask other questions that deny the original terms of *The Revenge of the Nerds*. The first revenge against *Revenge* interrogates the assumption that nerds possess normative whiteness. In his analysis of Louis, Benjamin Nugent argues:

If a propaganda artist of the Third Reich had time-traveled to 1984 and watched *Revenge of the Nerds*, he might have interpreted the hero, Louis Skolnick, as a traditional age-old caricature of a Jew, and Ogre and his band of overwhelmingly blond-haired and blue-eyed jocks as the image of ideal Aryans (in appearance, not conduct), even though the film never explicitly raises the question of ancestry or religion. (Nugent 10)

Like a classic farce, *Revenge* utilizes a palette of visual types to identify characters without naming their class or ethnicity directly. Given the origins of Louis’s type in European anti-Semitism, Christian anti-Judaism, and Nazi propaganda, the transformation of the nerd/jock binary into the Jewish/Aryan binary signals an offensive overreach on the part of the writers, or an important insight into the nature of the American nerd. I argue the latter: the trope of

the nerd as Jewish boy makes sense in terms of the stereotypes of Ashkenazi men as more intelligent, more bookish, gentler, and less physically powerful than the goyim. The Jewishness of the nerd connects nerd inferiority to the inferiority of poor “degenerates” in American eugenics, the false science of societal improvement through genetic purification. As Frank Dikotter points out, “Eugenics was a fundamental aspect of some of the most important social movements of the twentieth century, intimately linked to ideologies of ‘race,’ nation, and sex, inextricably meshed with population control, social hygiene, state hospitals, and the welfare state” (Dikotter 467). White supremacists feared that the United States was being overrun by genetically inferior peoples who would ruin the vitality of the nation through mongrelization, and Louis must defy these fears as a nerd protagonist.

Louis’s nerd-struggle with eugenics is not overt. The film encodes it as the odyssey of a social outsider trying to participate in the life of an elite university, the traditional engine of the American Dream of middle-class prosperity. In this context, where the school stands for the American status hierarchy, inclusion is a metonym for full citizenship in a polity that originally identified citizenship with the property-owning paterfamilias. The bathetic problem of the nerd that cannot get a date stands for the crisis of reproduction at the heart of social Darwinism. The inability reproduced through a failure to compete threatens Louis with political loserdom, a fate that waits for him in the grand eugenic narrative of the modern United States. As Edwin Black explains,

Throughout the first six decades of the twentieth century, hundreds of thousands of Americans and untold numbers of others were not permitted to continue their families by reproducing. Selected because of their ancestry, national origin, race or religion, they were forcibly sterilized, wrongly committed to mental institutions where they died in great numbers, prohibited from marrying, and sometimes even unmarried by state bureaucrats. In America, this battle to wipe out whole ethnic groups was fought not by armies with huns nor by hate sects at the margins. Rather, this pernicious white-gloved war, was prosecuted by esteemed professors, elite universities, wealthy industrialists and government officials colluding in a racist, pseudoscientific movement called eugenics. (xvi)

Revenge of the Nerds turns this white-gloved war into a comedy of survival in which the social elites of the university are slowly obliged to recognize first

the humanity and then the worthiness of characters that had been destined for defeat and disappearance. Louis and his friends transform the epic of eugenic selection into a picaresque story of collective survival that turns back the process of deletion from the body politic. If this reversal is taken as a representation of liberation that had already occurred, the film would mystify its cultural context, the early 1980s when the conservative backlash against the Long 1960s was gathering strength. Instead, it should be understood as a desire for an alliance of citizens disrupted by the Vietnam War, the assassination of King and the Kennedys, and the rise of Richard Nixon. While neoliberalism began to take hold as the ruling ideology of the political class in the United States, *Revenge* asserts a utopian vision of solidarity against the forces of isolation and objectification.

Because *Revenge* appears in the 1980s, the fear of the alien is transposed into another key as the fear of the machine, the personal computer, represented in the battle of the bands as Louis and Gilbert's chosen instrument. Nugent argues that American nerds are often perceived as disturbing by

1. Being passionate about some technically sophisticated activity that doesn't revolve around emotional confrontation, physical confrontation, sex, food, or beauty (most activities that excite passion in nonnerds—basketball, violin, sex, surfing, acting, knitting, interior decorating, wine tasting, etc.—are built around one of these subjects).
2. Speaking in a language unusually similar to written Standard English.
3. Seeking to avoid physical and emotional confrontation.
4. Favoring logic and rational communication over nonverbal, nonrational forms of communication or thoughts that don't involve reason.
5. Working with, playing with, and enjoying machines more than most people do. (Nugent 6)

Louis's Jewishness and his machinic qualities interact in interesting and sometimes contradictory ways. He is figured as more intelligent and less socially adept than "normal" white Americans. His spoken English is more like written English, marking him as the descendent of overprecise foreigners, as a person of the Book, and as a machine that cannot make an error. In this he is so white as to be "hyperwhite," marking his whiteness as unnatural and defective (Bucholtz 189). He is passionate about nerd activities, but he also argues to Betty, his alpha girlfriend, that nerd boys think of nothing but sex, since they

never get any, an odd assertion of a “love machine” identity. Nonetheless, these traits now mark him as an antihero rather than a villain, a combination of exotic and machinic that we will see again.

The second revenge of nerd culture involves a more radical divergence from whiteness. Though nerds of color began to multiply in American popular culture of the 1990s—Steve Urkel from the sitcom *Family Matters* represents an archetypical “black nerd” of this period—such figures appear derivative of a white original. If we question the status of black, gay, and female nerds as simulacra, it is easy to discover blackness, queerness, and femaleness at the heart of the American nerd. Arch-nerd Octavia Butler offers figures of the nerd as Other in the *Xenogenesis* trilogy, in which the alien Oankali overrun Earth to save a humanity from the effects of a nuclear war. Lilith Iyapo, the African-American protagonist of the first book, *Dawn*, awakens as the captive of the Oankali, who are gene traders and biosphere consumers. They choose a target species, hybridize with them, and turn their planet into a series of world-ships that colonize further worlds. The Oankali are acquisitive but nonhierarchical, compelling but nonviolent, and they desire the genetic malleability evidenced especially in human cancers, from which Lilith is saved. But the price of salvation is participation in a forced hybridization scheme in which Lilith will breed with Oankali partners to produce a new race. Given the history of slavery, Jim Crow medical experimentation, and forced sterilization in the lives of African Americans, the Oankali resurrection of humanity is ethically ambiguous, to say the least. Donna Haraway has treated the Darwinian discourses in *Xenogenesis* in detail, but no one has noted that the hinge of the plot—the Oankali third sex, the “ooloi”—is a figure of the nerd. When they arrive on Earth, the Oankali have already evolved three sexes: male, female, and ooloi, who serve as the genetic engineers, compelling males and females to reproduce and assuring that their offspring are healthy at the genetic level. Though their name evokes the technical term for egg cell, “oocyte,” the ooloi are represented as a *tertium quid*, smaller than the other sexes, but crafty, manipulative, and emotionally needy. They crave physical connection while asserting genetic dominion over their mates—another version of Louis’s love machine. Though *Xenogenesis* is full of biological and political analysis, the central plot devolves to the birth of the first human ooloi, Lilith’s descendent, Jodahs, and its attempt to reconcile its human and Oankali natures. Though

it is expected, as an ooloi, to be neuter, Jodahs transgenders into something resembling a human male. As a brown-skinned, human-Oankali hybrid with the urge to manipulate his parent species, Jodahs becomes a figure of the black, queer nerd as interplanetary trickster. He is the fictional version of the child Butler might have had with Samuel L. Delaney, had they been abducted by aliens who wanted to snuggle afterward.

Undoing the idea of the nerd as Anglo, male, and of this earth, we cannot neglect the comedian Tina Fey, who turns the memoir to comedic ends in *Bossypants*, her autoethnography. Mary Louise Pratt explains that an autoethnography is a “text in which people undertake to describe themselves in ways that engage with representations others have made of them” (Pratt 35). Autoethnography is an ironic strategy, and because irony is basic to the structure of satire, autoethnography may also be a tool of comedy. Tina Fey, a feminist nerd critic of the androcentric nerd, understands this well. The humor in *Bossypants* is based on the autoethnographic principle *I know what you’re thinking about me, and you’re just right enough to be wrong*. In the introduction, Fey addresses readers whose motivations for reading she neurotically reimagines. Perhaps, she says, you are a parent interested in raising “an achievement-oriented, drug-free, adult virgin. You’ll find that too. The essential ingredients, I can tell you up front, are a strong father-figure, bad skin, and a child-sized colonial-lady outfit” (Fey 3). She never says “I can tell you because that’s who I was,” because the book was published in the wake of her success as a writer and performer on *Saturday Night Live*, and *30 Rock*, a televisual roman à clef about SNL. It is only too clear from these sources that Fey was an awkward, unathletic, sickly child who became a teenager with a bad attitude and an adult with a penchant for satire: in other words, a nerd. The introduction continues by self-satirizing her use of “elitist” words, her foundational belief that gay parents can be as annoying as straight, and the continued domination of American comedy by men. In classic sci-fi fashion, Fey evokes a reader “seventy years in the future” who will find her book propping open a door at an abandoned Starbucks “that is now a feeding station for the alien militia.” Alien militias are familiar territory for Fey, whose love of *Star Wars* is familiar from *30 Rock* and Liz Lemon’s determined cosplay as Princess Leia in Season 5. She evokes the dystopian tradition, anticipating the current trend in “cli-fi,” or climate change fiction, when she says: “If that’s the

case, I have some questions for *you*. Such as: ‘Did we ruin the environment as much as we thought?’ and ‘Is *Glee* still a thing?’” (Fey 4). This displacement of future disaster, from adult virginity to the destruction of the climate, with bathetic turns to the ridiculous, reveals the presence of nerd logic at the heart of her autoethnography. The neurotic vibration between *everything depends on this* and *no one cares about this except me* marks the self-consciousness of an adult nerd who watched the Omegas in *Revenge* and plotted revenge. She thereby enters a cycle of cultural critique through self-displacement that marks the nerd girl who, like her gay best friend, fell hopelessly in love with an American culture that believes all nerds are queer *and* that all nerds are boys.

The final revenge on *Revenge of the Nerds* belongs to Takashi, the Japanese nerd whose accent is played for Orientalist laughs throughout the film. He raises the specter of the Asian nerd, the vision of the “model minority”: hardworking, serious, and no threat to anyone’s power. The first key to Takashi’s revenge inheres in the logic of the character himself: though stereotypical in all other ways, he participates in the horny frat boy stereotype taken over from *Animal House*. He does not perform the emasculation characteristic of Asian men in Anglo-American literature and film. Instead, the film folds him into the pornographic male gaze typical of Hollywood sex farce of this era. Asian American scholars have theorized the manner in which Asians have been exoticized, neutered, hypersexualized, and stigmatized as a threat to American security, especially in light of the Japanese American internment during World War II, but Takashi takes a step into the mainstream at the expense of women. This Catch-22—assimilation as the price of acceptance into American culture—is undone in later Asian American literature and its critique of anti-immigrant racism.

In *American Born Chinese*, a graphic novel, Gene Luen Yang illustrates the dual nature of ethnic transformation for Jin Wang, a Chinese American boy from San Francisco. Growing up in the 1980s as the son of Chinese immigrants, Jin encounters the casual racism of white classmates and teachers, who project anti-Asian narratives into his social world on a daily basis. Jin is a “dog-eater” and a “Bucktooth” who idolizes the Transformers, robots who can change shape at will. The plot of *American Born Chinese* is structured by a Taoist logic, in which Jin’s desire to be more American, more white, more normal, moves in two different vectors, both of which evolve under the sign of the nerd. In the

first plot, Jin imagines himself to be a blond, curly-haired boy named Danny, and in these sections, Yang draws Jin precisely this way, so readers see what he wishes to be: popular, socially adept, and attractive to his peers. In this guise, Jin changes into an agent of assimilation. He instructs a new friend, a Taiwanese boy, Wei-Chen, to “Speak English” because “You’re in America” (Yang 37). Wei-Chen’s otherness is represented as nerdiness: he wears big glasses, pointy hair, and high-waist pants, as if he is Alfalfa from *The Little Rascals*. The racist trajectory of this stereotype is revealed by the advent of Jin’s cousin “Chin-Kee”—*chinky*, an anti-Chinese slur—who embodies the effete Chinese servant stereotype in the nativist imagination. Though “Danny,” Wei-Chen, and Chin-Kee are different characters, they reflect Jin’s self-negation in various forms: assimilated pseudo-white boy, nerd, and Yellow Peril.

This vector of transformation is undone by the second vector, which begins the novel in the realm of the Monkey King, a character from the Buddhist epic *Journey to the West*. Monkey is a trickster-god, a traditional folk hero who rebels against Buddha and then reforms as the protector of the monk fated to bring Buddhist scripture from India to China. The epic is the tale of Monkey’s transformation from self-important fool to bodhisattva, an enlightened being capable of enlightening others. At first, the Monkey narrative operates independently of Jin’s story, reflecting Jin’s self-alienation, the traditional immigrant tendency to efface tradition in the name of American success. As *ABC* progresses, however, Danny becomes so angry at his unassimilable friends that he drives Wei-Chen away and tries to beat Chin-Kee in a fist fight. Only then, when Danny knocks Chin-Kee’s head from his body, is Chin-Kee revealed as Monkey, who has come to earth to look after Jin and Wei-Chen, who is Monkey’s son. Both the nerd and the god help Danny to realize that he is truly Jin, and in that moment, the false whiteness disappears, revealing Jin as we had first seen him. Through the insertion of a traditional folk hero into the story of an “ABC,” as Jin’s generation calls itself, Yang is able to resist the racist images in nativist rhetoric that Jin had internalized. The trope of shape shifting, which had appeared pathological in the first vector, is recovered as a path to enlightened self-acceptance. No longer desiring to be just another white kid, Jin finds Wei-Chen, who had turned from humanity in disgust, and the novel closes with the two friends drinking bubble tea in a local Chinese tea joint. Unlike the plot of hybridization in *Xenogenesis* or the strategy of

self-ironizing in *Bossypants*, *American-Born Chinese* responds to the figure of the alien nerd with a counter-narrative of difference as authenticity in diaspora. Jin's American life is recontextualized as another journey to the West, where the West stands for the United States, not India, though Monkey the transformer is still at work. Through his intervention, Chinese Americans and nerds are given the choice to affirm who they are, what they like, and how they live by negating the negation of heritage as pollution. The possibility of an entire immigrant group identifying as self-affirming nerds presages the greatest revenge, the complete recycling project: the creation of a nerd nation.

This is the dream *Revenge* began but did know how to complete, given the limitations of multiculturalism in the 1980s: the revenge of the nerd as a community of losers, the possibility of a city, and a land of nerds. In the earlier paradigm, nerds are constituted by their niche in an environment, but a sickly prey animal doomed to an early death has no future. The place of a nerd alliance is both material and imaginary, a present anchored in the past and the future. "Nerdland," as an alter-ethos, a new habitat, produces new rhetorical possibilities for its citizens. The political scientist Melissa Harris-Perry speaks about "Nerdland" on her MSNBC news program. "Nerdland," for her, is not just the discursive space occupied by fans of the show: it is the studio considered as kitchen, a place where neighbors come to talk, "here in Nerdland." It is also the home of the viewers, "out there in Nerdland." Finally, it is the virtual space that she, her guests, and her viewers occupy in consciousness, an "imagined community" in Benedict Anderson's terms: "the members of even the smallest nation will never know most of their fellow-members, meet them, or even hear of them, yet in the minds of each lives the image of their communion" (Anderson 6). This way of speaking is endemic to the "nerd nation," already used to imagining itself as a virtual country, a "republic of losers" for the multimedia era. Though a basic history of nerd land has yet to be written, it is possible to identify some landmarks of Nerdland, being careful, at the same time, to distinguish between the nerd as a figure, the real history of persons identified with that figure, and the tension between the two that has produced competing ideas of Nerdland's ecology. There is Harris-Perry's Nerdland, a public sphere for dorks, the sort of place DeepArcher aspired to become, and there is its eugenic reflection, Nerdland in the eyes of its enemies, the Degenerate States of America.

The duality of Nerdland is nowhere clearer in American literature than in Young Adult fiction, since the nerd is, above all, a kind of child one meets—or becomes—in elementary school. In Michael Buckley's novel *NERDS: National Espionage, Rescue, and Defense Society* (2010), the titular figures are first described from the perspective of their fifth-grade antagonist, who is about to lead his allies in a spit-ball attack against them:

Though he would never admit it to the others, Jackson found the enemy unnerving. They were grotesque with their drooling mouths and puffy eyes—barely human. Brett was convinced the enemy had been born misshapen, but the idea was far too unsettling for Jackson. He couldn't imagine being born a . . . a . . . a nerd.

Unfortunately for Jackson, Nathan Hale Elementary had more than its fair share of nerds. In fact, his whole town of Arlington, Virginia, was one giant geektopolis. Perhaps there was something in the drinking water Arlington siphoned from the Potomac River, but there were dweebs, spazzes, goobers, gomers, goofballs, and freak-outs crawling out of every nook and cranny. Jackson sometimes felt as if he were drowning in an ocean of wheezing, math-loving, Velcro sneaker-wearing waste cases. Jackson's high-school age brother, Chaz, felt the same way. He told Jackson the elementary school had always been overrun with misfits. Their father, who was also an alumnus of Nathan Hale, said the same. Jackson was smack-dab in the middle of Nerdville, USA. (Buckley 1–2)

This passage grounds the figure of the nerd in discourses of public health, genetic and cultural inheritance, and grotesque landscape. Jackson thinks of himself as the norm from which the nerds depart. His father and older brother attended the same elementary school, and provide historical depth to his perspective. He and his family agree that their town is “overrun” by a pestilence. The physical descriptors indicate the filth of matter-out-of-place, the effluvia of mucus membranes. Nerds, unlike good Americans, are constantly ill and, like zombies, a source of contagion. Their sickness dehumanizes them such that they become objects of fear and disgust. Their revolting appearance leads to theories as to their origin—nerds provoke, and are a subject of, theory. Jackson's friend Brett believes that nerds were born this way, while Jackson finds it hard to conceive of nerds as natural. He favors a theory of waterborne illness: “something in the drinking water” of Arlington, Virginia has caused

children to devolve, evoking ideas of Washington, DC as a pestilential swamp. Like insects, freaks and spazzes have crawled out of the hidden spaces of houses in the neighborhood. Their impact causes Jackson to feel as if he is “drowning” in a tide of cultural dysfunction: nerds are the epitome of bad taste, a disease of culture, in their choice of the wrong shoes, the wrong subject, and the wrong affect. So powerful is this combination of natural and cultural dysfunction that a local inversion of standards evolves: normal people are in the minority, and have been for several generations. This perception is infected with ideologies of race and class. Jackson and his brother, “Chaz,” who attend “Nathan Hale,” are coded by their names as First Family Virginians, an elite lineage predating the Revolutionary War, now sadly threatened by nerds, who represent the lower-class, immigrants, and racial minorities. Nerds are destroying America. America is becoming Nerdville, USA: a declensionist narrative of degenerate land and people, a story as old as the republic itself. This new, inferior America is also described as “geektopolis,” indicating the threat that a nerd polity represents to a national ideal of a muscular United States capable of overthrowing British rule, conquering a continent, and defending itself against fascism.

Though Buckley’s novel treats these ideas as obstacles that contemporary children overcome as citizens of an inclusive United States, one cannot take such ideas lightly when anti-Communist and anti-immigrant rhetoric condemn even children as enemies of the state. With regard to the Obama administration’s treatment of migrant children from Honduras, El Salvador, and Guatemala seeking refuge from violence by fleeing across the Texas border in June 2014, Senator Jeff Sessions of Alabama wrote:

For all practical purposes, the Administration’s policy is that anyone in the world, of any age, is free to come and stay in the interior of the United States, to illegally work and receive taxpayer benefits, so long as they are not caught, tried, and convicted of a serious crime. And even then, thousands of criminal aliens are released each and every year.

Unfortunately, the President remains committed to escalating—rather than ending—the lawlessness. It therefore falls on the shoulders of Republicans alone to make the case for new leadership that will restore America’s borders. Republicans are the last line of defense for the American worker. They are the last bulwark for the rule of law. (Breitbart.com)

Sessions' nativist rhetoric conflates children seeking asylum with "criminal aliens" in a revival of eugenic nativism that identifies immigrants, criminals, and degenerates as the same people. Nancy Ordovery reminds us that American nationalism is adept at co-opting other social movements and "[e]ugenics, far from being exempt from this process of absorption, has played a pivotal role in nationalist and racist enterprises" (Ordovery xv). The borders of the nation have been breached by criminals, lawlessness is at hand, and the American economy is on the brink of collapse. This is the true origin of the tropes played for laughs in Buckley's novel. The nerd horde in a Virginia elementary school mirrors the dangerous migrant children whose presence threatens the republic. The adult male immigrant competes with American men for employment; the immigrant prostitute corrupts them sexually; and the immigrant mother produces corrupted multiracial children to dilute the hardy Nordic stock of the United States (Ordovery xvii). However, Sessions' rhetoric is even more conservative than the educational eugenics from the turn of the last century. In 1916, Professor Lewis Terman of Stanford University, an early advocate of tracking, wrote that "feeble-minded" children who appeared frequently among "Indians, Mexicans, and negroes" should be "segregated in special classes and be given instruction which is concrete and practical," since they cannot master higher skills (Terman 91–92). Nonetheless, Terman treats them as children who should be educated. Sessions' position combines eugenics and the Red Scare, such that education is foreclosed as a possibility. Like Reds, migrant children must be contained and expelled from the national body. It was common during the Cold War to characterize the Communist threat as a subversion of American bodies from within, a rhetoric parodied in Stanley Kubrick's *Dr. Strangelove*, when General Jack D. Ripper explains, "I can no longer sit back and allow Communist infiltration, Communist indoctrination, Communist subversion, and the international Communist conspiracy to sap and impurify all of our precious bodily fluids." It would seem, then, that our way of talking about nerds is bound up in the way we talk about pestilential threats to the health of American bodies and the vitality of the United States as a nation. The figure of the schoolyard loser is not as politically innocent as *Happy Days* made it seem. Yet, how can the nerd embody such a potent threat inside a figure of impotence? This dilemma requires an examination of the sign of the nerd itself.

Under the sign of the nerd

In his analysis of sacred symbols and their function as repositories of meaning, the anthropologist Clifford Geertz distinguishes between a people's *ethos*, "the tone, character, and quality of their life, its moral and aesthetic style and mood" and their *world view*, "their picture of the way things in sheer actuality are, their concept of nature, self, and society" (Geertz 127). One of the primary functions of religion, he argues, is to explain the connection between ethos and worldview, and thereby allow peoples to create meaning as they situate themselves in a larger order. This relationship cannot be reduced to a set of beliefs understood as propositions to which everyone assents; rather,

meanings can only be stored in symbols: a cross, a crescent, or a feathered serpent. Such religious symbols, dramatized in rituals or related in myths, are felt somehow to sum up, for those for whom they are resonant, what is known about the way the world is, the quality of the emotional life it supports, and the way one ought to behave while in it. Sacred symbols thus relate an ontology and a cosmology to an aesthetics and a morality. (Geertz 127)

To interpret a culture is, for Geertz, to understand how its religious symbols function as a semiotic technology for archiving and producing meaning in a specific time and place. This theory can help us understand the sign of the nerd (see Figure 1.1) even though nerds do not constitute a people, "nerd" is not a symbol, and unpopular culture is not a religion. In Geertz's terms, *nerd* is an ironic symbol, a repository of ethics, aesthetics, and cosmology reconstructed from a sign that is used to push nerds out of a universe of meaning, to consign them to a place of shame. An ironic symbol, whose function is obscured to make it seem less important, may function as a symbol nonetheless. It reveals important aspects of the American environmental ethos and worldview that are not acknowledged as a system in ecocriticism, though its individual elements have been considered separately. In the analysis that follows, I attempt to interpret "nerd" as an ironic symbol that contains not just a single, coherent set of meanings, but a set of conflicts over these meanings and their value. Though our examination of the nerd has not been exhaustive, the examples in the previous pages form a corpus from which to construct a preliminary understanding of the structure of the sign of the nerd. Bearing in

Figure 1.1 The sign of the nerd

mind that the following analysis is heuristic rather than definitive, I present a diagram of the American idea of the nerd as failed specimen, or “Loser”; the nerd as depersonalized waste and pestilence, or “Effluvium”; and the nerd as impersonal automaton, or “Machine.”

The nerd-sign demonstrates why an idea that seems trivial actually reflects a deep structure in the American environmental imagination. “Nerd” connects biological to cultural failure as cause to effect; it represents the way “failed” persons are depersonalized as biological waste and mechanical slave; its standards of failure, understood as a system, generate political and aesthetic principles. At the apex of the triangle, the category of “loser” asserts the failure to compete successfully for power, status, and reproductive agency as the result of genetic inferiority. Difference from the norm becomes a predictor and a justification for failure. To borrow terms from Judd Apatow’s seminal *Freaks and Geeks*, nature is related to culture as freak to geek: failure of substance, or freakishness, naturally leads to a failure of taste, or geekishness. These failures are pathologized as “loser” moves toward “effluvium”: the failed individual becomes a biological waste product, an excrementum of a diseased

body. The normal and healthy are authorized to throw away flawed nature and sick culture as poisons in the body politic. In the final step, the movement from waste to “machine,” the nerd is depersonalized further as dead matter fit only to serve the purposes of others. Pathologized difference becomes thingship, the acme of artifice that is, paradoxically, also anticulture. The nerd is not merely an artificial nonperson; the nerd is *only* a tool, never “art.” This negative side of nerd ecology maps the production of things and diseases onto individuals who were supposed to be persons. Because things and diseases cannot be members of a community, cannot form a city or a nation, this version of nerd ecology prescribes the impossibility of Nerdland as more than toxic dump, filthy swamp, or junk heap. It proscribes nerd politics as unnatural while pretending merely to describe it.

The proscription against a nerd politics begins with the apex concept of “loser.” There are many versions of the nerd-as-loser: the dweeb, the dork, the spazz, the poindexter, the sissy, and so on. Reading this term ecologically leads to Charles Darwin and his theory of evolution by natural selection or, in popular terms, “survival of the fittest.” At first blush, the place of the nerd in Darwinian theory is obvious: the nerd is that creature that struggles to exist and does not succeed, the child as prey, the runt of the litter. Though it is tempting to call “nerd” a social Darwinian concept, we must be careful to distinguish Darwin’s idea of the struggle for existence from the application of that idea by disciples such as Herbert Spencer, a true social Darwinian thinker. It was Spencer who believed that social competition would “cull the unfit”; Darwin believed that natural selection had ceased to operate in modern societies (*Descent* 220), though he later affirmed “survival of the fittest” in the fifth edition of the *Origin*. As Diane B. Paul argues, “Darwin’s waverings certainly contributed to the diverse readings of Darwinism, as did ambiguities in the *Origin* about the locus and meaning of struggle” (Paul 229), but this means that the Darwinian background to nerd ecology is more equivocal than social Darwinism. In Chapter 3 of the *Origin of Species*, Darwin multiplies the meaning of “struggle” in the process of natural selection:

I should premise that I use the term Struggle for Existence in a large and metaphorical sense, including dependence of one being on another, and including (which is more important) not only the life of the individual, but success in leaving progeny. Two canine animals in a time of dearth, may

be truly said to struggle with each other which shall get food and live. But a plant on the edge of a desert is said to struggle for life against the drought, though more properly it should be said to be dependent on the moisture. A plant which annually produces a thousand seeds, of which on an average only one comes to maturity, may be more truly said to struggle with the plants of the same and other kinds which already clothe the ground. The mistletoe is dependent on the apple and a few other trees, but can only in a far-fetched sense be said to struggle with these trees, for if too many of these parasites grow on the same tree, it will languish and die. But several seedling mistletoes, growing close together on the same branch, may more truly be said to struggle with each other. As the mistletoe is disseminated by birds, its existence depends on birds; and it may metaphorically be said to struggle with other fruit-bearing plants, in order to tempt birds to devour and thus disseminate its seeds rather than those of other plants. In these several senses, which pass into each other, I use for convenience sake the general term of struggle for existence (63–64).

Darwin clarifies that the measure of success in struggle is reproductive, and we can hear the eugenicist preoccupation with breeding to come. However, the Darwinian notion of struggle to reproduce includes the ideas of dependence and cooperation alongside competition, and Paul observes that readers of differing political ideologies interpreted these claims to suit themselves. There is an anarchist and socialist appropriation of cooperation as well as a fascist appropriation of competition (Paul 229). There is also the problem of an anthropomorphic interpretation of the struggle: though social Darwinists were concerned with human agency, Darwin believed struggle to be an impersonal process involving the organism's relationship to an *environment* of struggle, such as the desert. His description of a cooperative-competitive process involving individual organisms, organismic communities, and the physical environment set the stage for the biology of systems that would become ecology proper. Material as these relations are, however, Darwin insists on the metaphoric nature of the struggle for existence, the several "senses" of the term that must be held together. This entanglement of metaphor, material, and theory leads, as Gillian Beer points out, to an "extraordinary hermeneutic potential" in Darwinian theory, the ability to produce multiple meanings and to invite rereadings in new contexts (Beer 8). Darwinian polysemy is the ground of narrative as well as ideation: it

takes up older myths of “transformation and metamorphosis” and transposes them into the key of modern science (Beer 7).

Interpreting the nerd as loser in a Darwinian context means understanding the nerd as an individual organism struggling for existence in an environment. Though Darwin’s idea of struggle foregrounds the possibility of change, the chances for the metamorphosis of the nerd are, at first, radically limited. As we saw in the case of Chachi in *Happy Days*, the nerd has the potential to transform from unsuccessful to successful struggler through the example of a normative male. Abnormality is the source of failure in the struggle, so the hope of the nerd is to become something else. As Beer suggests, there are potent myths of shape changing to ground this narrative, such as Ovid’s *Metamorphoses*, and plentiful biological models, such as caterpillar-to-butterfly. These narratives presuppose that the end of the nerd is to end the nerd, to succeed by becoming something better. As popular representations shift to the communal mode of *Revenge of the Nerds*, the conflict becomes analogous to a species struggling for survival against other species. This analogy underwrites a racial-ethnic meaning of the nerd as collective: Enlightenment philosophy and Romantic anthropology already thought of different races as different species, though Darwin thought of them as “sub-species” (Descent 401). The autoethnographic tradition of nerd literature conveys an internalized sense of the nerd as alien in an unfriendly environment. Octavia Butler, who makes the status of alien literal in *Xenogenesis*, figures the nerd as the agent of metamorphosis for several species at once, and ultimately, for the biosphere itself. Gene Yang splits the difference by identifying Chinese American ethnicity with nerd-dom in a manner that engages traditional myths of collective identity. What binds all of them, however, is their sense that the struggle for existence can lead from a negative to a positive nerd identity. The nerd is not just the loser that disappears from the gene pool; the nerd is a subject of myth and history. The primal failure of the nerd to compete leads to the metamorphosis of the terms of struggle itself. The possibility of cooperation within the “species” becomes thinkable. The threat of personal and species-extinction creates a new narrative structure in which differences lead to better-adapted abnormalities. The seed that needs transportation finds the bird willing to eat it. This new story founds the possibility of a true community in a legitimate polity: the plant adapts to the desert. When

the struggle for existence leads the “loser” to become another kind of nerd with a collective sense of struggle, Nerdland as a public sphere ceases to be a contradiction in terms, and question of a nerd politics can arise.

In moving from *loser* to *effluvium*, the nerd shifts from the individual recognized as inferior to the individual becoming diseased, the waste products of diseases, or the excreta of civilization. Nerdland, at this vertex, moves from the “entangled bank” of Darwinian natural selection to the site of pollution, the factory pouring waste into the river, dirt as disease vector. In *The Environmental Justice Reader*, Joni Adamson, Mei Mei Evans, and Rachel Stein explain that environmental justice movements work in multiracial coalitions “from the grassroots” calling “attention to the ways disparate distribution of wealth and power often leads to correlative social upheaval and the unequal distribution of environmental degradation and/or toxicity” (Adamson et al. 5). The nerd as effluvium calls attention to the way the victims of environmental injustice may be figured as the toxicity from which they suffer. *Effluvium* collects many of the ecocritical tropes of disgusting mess: Timothy Morton’s “mesh,” a postmodern descendent of Darwin’s entanglement, considers “life-forms” as bound together materially and epistemically in an unthinkable vast net of relationships, a kind of negative biology or biology of unknowing (Morton 28). Given Morton’s emphasis on disgust and melancholy as environmental affects, it is appropriate to consider the mesh as bound by effluvia, both biological and industrial, the remains of the *lachrymae rerum*. Where Morton emphasizes forms, Stacy Alaimo finds bodies. Effluvia connect corpora, embodying the *trans* in Alaimo’s “trans-corporeality,” the flow of matter between bodies and environments that undermines the distinction between self and world, inside and outside (Alaimo 2). Effluvia, in these roles, take the place of both nature and the individual in ecology, but not in a nice way. Like the nerds of Alexandria, Virginia, effluvia are disgusting, the ick of perpetually sick children who wipe their noses on their sleeves. Of “Brown ecology,” Steve Mentz writes that “Brown is the color of intimate and uncomfortable contact between human bodies and the nonhuman world”: a truly effluvial thought (Mentz 193). Returning to Heather Sullivan’s critique of ecocriticism as not dirty enough, we can say that an effluvial Nerdland is all decomposing swamp mud. The rivers of Nerdland are choked with the soil washed away by industrial agriculture. The waste ponds of the Alberta tar sands, the Gulf

of Mexico after the Deepwater Horizon spill, Coltan mines in Congo, the radioactive city of Chelyabinsk in Ukraine, Appalachian creeks buried by strip mining, all are effluvial in this sense. If the failure of the loser is the failure to compete, the failure of effluvium is the failure to thrive due to illness, corruption, and decay. In this corner of Nerdland, the nerd is depersonalized as the underside of natural processes and the bad faith of industrialism. The ooze that used to be a person and is no longer: more accurately, the persons, ecosystems, and communities figured as waste by powerful interests, such as factory farms, power plants, and mines that profit by treating workers, natives, and locals as garbage. If the loser cries out for environmental justice for individuals, the effluvia cry out in the name of unbeautiful, wasted, and destroyed communities. Effluvium is the quintessence of Rob Nixon's "slow violence," the "long dyings" of the poor and other creatures, the wounds that ooze rather than bleed (Nixon 2–3).

The effluvial is therefore the nerd-mode that evokes social and political critique most directly, often in the form of blame or aversion. As garbage, effluvia determine the place of the individual in society: "because it is ubiquitous, garbage is among the most immediate categories against which people are defined" (Mazzolini and Foote 3). The effluvia of disease mark the sick as infections in the body politic. In *Illness as Metaphor*, Susan Sontag traces the polemical history of the city as cancer and the city-dweller as consumptive. Tuberculosis and cancer function, she says, as "master illnesses" that "are used to propose new, critical standards of individual health, and to express a sense of dissatisfaction with society as such. Unlike the Elizabethan metaphors [...] the modern metaphors suggest a profound disequilibrium between individual and society, with society conceived as the individual's adversary. Disease metaphors are used to judge society not as out of balance but as repressive" (72–73). This heritage explains a great deal of American nature writing and its post-Romantic tropes of the city which, according to this tradition, is both carcinogenic and a cancer itself (73). One has only to think of Edward Abbey's vision of New York City as a cancer on the Hudson, Rachel Carson's struggle with breast cancer in the suburbs of Washington DC, or the figure of HIV/AIDS as the "gay cancer" of San Francisco to detect the urban chancre in American literature. The effluvial, then, is the site of blame and shame. Cancer and tuberculosis were often attributed to the sick emotional

life of the patient, as was AIDS. In such accounts, each illness begins with an emotional failure that is also a moral flaw. Thus, the effluvial is the underside of the ecological tropes of balance and harmony that characterized American ecology in the age of the Odum brothers. Though ecology has since repudiated the principle that healthy ecosystems tend to stability and harmony, American environmentalism still associates virtuous citizens with a clean and prosperous land. The cancerous citizen in the consumptive city reflects that same tradition in the mode of condemnation: political disease and the individual patient are related as whole to part; they cause each other. Thus, the figure of the effluvial nerd in a polluted land undermines the promise of nerd politics by suggesting that diseased persons naturally spread corruption through their effluvia into the body politic. From this perspective, it is laughable to see the social structures nerds have built, including universities, fan conventions, and professional networks as political in any but a sinister fashion.

The final vertex, *machine*, completes the process of depersonalization: the purely artificial, the tool, the mechanical servant that is not even a by-product of a biological process. The failure of the machine is a failure to feel, the failure of a hollow body rather than the effluvial continuum of excessive emotion. The nerd-machine should be construed in three ways: the nerd as mechanism, the clockwork automaton that runs without breath or blood; the nerd as agent of industry, the machine that disrupts the pastoral states of America; and the nerd as information technology, architect and terminal of the computer intelligence at the center of the revenge plot. In the first case, nerds are identified as cogs in the world-machine that tried to supplant the organismal cosmos of the Renaissance as Carolyn Merchant details in *The Death of Nature*. Historically, the nerd emerges only after the cosmos is figured as a mechanism during the Enlightenment, a *l'homme machine* the French did not anticipate. This machine is what is left after the *deus* has absconded. As Rilke reminds us in *Duino Elegies*, it represents a cosmic hierarchy that cannot hear human cries. Given the organismal connotations of *ecology* in the present, it is useful to remember, as Robert P. McIntosh reminds us, that Ernst Haeckel, the German physiologist who coined the term "oekologie," thought of it in mechanistic terms (McIntosh 8). In the *General Morphology* (1866), Haeckel says: "Thus the theory of evolution explains the housekeeping relationships of organisms mechanistically as the necessary consequences of

effectual causes and so forms the monistic groundwork of ecology” (Haeckel 140–141). Ecology, as a branch of Darwinian theory, understands the household (*oikos*) as a machine that takes care of itself, a complex of efficient without first or final causes, laying the foundation for cybernetic theories of ecology as material flows of information. The nerd as machine is surprisingly natural, if the natural is modeled entirely after the artifactual. Yet, it is this artifactual nature that is demonized in the machine as agent of industry. In *The Machine in the Garden*, Leo Marx recalls the moment in 1844 when Nathaniel Hawthorne sat down for a literary reverie in Concord, Massachusetts, only to have his peace disturbed by the sound of a passing train. Hawthorne records in his notebook the train’s “long shriek, harsh above all other harshness,” breaking the harmony of the pastoral village (Marx 13). Hawthorne relates this sound to the advance of “men of business” who disturb the country with the city through the instrument of the locomotive. Marx reads this moment as emblematic of the horror in American pastoral at the advent of industry, which breaks the harmonies of agrarian life with the unnatural sound of engines carrying dirty city folk. This emblem recalls Nugent’s characterization of the nerd as one that seems machine-like because it prefers the company of machines to the company of people. So, the nature of the nerd as cog in the world-machine contrasts with the nerd as destroyer of pastoral reverie. This tension reflects the conflict within American environmentalism itself, which descends ethically from New England Romanticism but ontologically from oekologie. This conflict conceals a more important unity of nerd gender. As cog and disruptor, the nerd acquires a masculine agency denied at the other vertices. Neither loser nor effluvium is capable of effective agency, but the nerd as machine changes culture and nature. Lori Kendall argues that the nerd association with computers as liminal “quasi-creatures” contributes to the liminality of nerds as machinic, both powerful and disturbing (Kendall 263). Nerds of any sex are most masculine when they perform the role of nerd-machine, and most powerful when they are least human.

This is the secret to the revenge of the nerds that began in the 1980s with the advent of personal computing, continued in the 1990s with the rise of the World Wide Web, and expanded with the spread of cell phones and app culture in the early twenty-first century. The nerd-machine in the third sense, as paragon of information technology, returns us to *Bleeding Edge* and

Pynchon's denial that anything has changed in the nerd-jock power structure. Here we must distinguish between the nerd as economic engine and cultural engine. If Pynchon avers that nerd-billionaires are structurally irrelevant to a capitalist engine that runs on the energy of the warrior-businessman, it is true nonetheless that the integration of information technology into middle-class life has made nerd identity a path to bourgeois respectability. The vindication of the nerd as technological wizard is the subject of countless works of popular culture, including television programs such as *The IT Crowd*, *Freaks and Geeks*, *Futurama*, and *The Big Bang Theory*; Hollywood films such as *Romy and Michele's High School Reunion*, *The Social Network*, and *Revenge of the Nerds II and III*; websites such as *Nerdist*, *The Mary Sue*, *Nerds of Color*, *A Tribe Called Geek*, *Indigenerdy* (Indigenous/digital nerds), and *Gay Geeks of New York*. All of these artifacts feature nerds who have transcended the loser-effluvium dynamic through an association with information technology. However, one of the earliest and deepest explorations of the machine as a technology for nerd transcendence arrived in Douglas Coupland's novel *Microserfs* (1995), a seriocomic tale of coders at Microsoft headquarters. *Microserfs* is a fictionalized autoethnography narrated as an observation of coder life in a corporate nerd land. The narrator, "danielu@microsoft.com," a "bug tester in Building 7" who spends his days anatomizing the traits of his fellow "serfs," offers a testament to office life at the end of the twentieth century (Coupland 3). Each character is described by the seven categories—"680X0 assembly language," "Cats," and so on—he or she would favor on the game show *Jeopardy!*, as if the content of their souls can be rendered as data. Though danielu neglects no point along the loser-effluvium spectrum to describe his friends and their dysfunctions, it is their status as parts of the great machine of Microsoft that defines their lives. That they nevertheless develop as characters in a cyberbildung can be attributed to Coupland's insight into the crucial difference between earlier automata and information technology. Computers are the kind of machines that transcend themselves. Danielu observes:

I thought about the word "machine". Funny, but the word itself seems almost quaint now. Say it over a few times: *machine, machine, machine*—it's so ... so ... *ten years ago*. Obsolete. Replaced by post-machines. A good piece of technology dreams of the day when it will be replaced by a newer piece of technology. This is one definition of progress. (Coupland 179)

Two pages after this quotation are filled with one word, “machine,” stacked in eight columns and thirty-seven rows. This self-transcendence iterating to infinity conveys the terrifying sameness of change in coder-land. If the nerd does not simply correlate with this pattern, but causes it and is caused by it, there is good reason, politically, to be afraid of nerd-machines. They remind others of the totalitarian aspects of modernity with which the Frankfurt School was so concerned. They incarnate the flatness and meaninglessness that Fredric Jameson attributes to postmodern art. They are the stormtroopers of uncool. To Coupland’s credit, his characters do not descend into futility. They transcend the monotonous self-transcendence of the new machines, and thereby suggest that artificial intelligence may learn to do so as well. They point to the larger question of the Nerd Triangle: *how* does its structure produce narrative, aesthetics, and politics from the negative heritage of the loser, the effluvium, and the machine?

Impossible things: Defending the earth with unpopular culture

The most direct answer to this question follows the logic of semiotic revenge: unpopular culture tells stories of the defense of the earth which begin in self-defense, in redemption from the nerd as prey, filth, and idiot machine through a transvaluation of values. The beginning of a positive nerd ecological discourse requires the loser, effluvium, and machine to become the underdog, the refuge, and avatar. Unpopular culture appropriates materials that enact the positive and the negative values of the nerd-sign. In the simplest strategy, nerd narratives are constructed and interpreted through a story of the nerd overcoming itself, a pattern projected onto the screen of planetary history as the shift from fossil fuels to renewable energy, the remediation of dumps into parks, the alliance of human and technology to avert the end of the world. Aesthetically, this generates a chiaroscuro effect in which it is easy to distinguish beauty from horror, but difficult to separate them. Politically, it generates tales of a city, nation, or planet redeemed from ruin through the action of an extraordinary individual who becomes the avatar of the reader within the story world: the nerd as “Mary Sue” or “Gary Stu.” The reversal of loser to hero,

swamp to refuge, and machine to avatar provides a powerful political rhetoric by creating an excess of value in personal and collective identities. However, these simple patterns are complicated by three other aspects of the nerd sign: the antinomies between each vertex and its impossible opposite; the aesthetic and political values inhering in each side of the triangle; and the generation of metanarrative patterns via movement around the entire Nerd Triangle.

If the vertices represent static stereotypes, even when reversed, there is dynamism in the relationships between them and the continua formed by these relationships. This is appropriate, after all: this is a systems theory of *nerd*, a semiotic ecology of Nerdland. When viewed as a part of a system, each vertex is opposed by the midpoint of the line that connects the other two vertices. This midpoint displays characteristics of both vertices. I call these midpoints “impossible” because they reveal an aspect of nerd signification that appears forbidden if each vertex is read in isolation. “Swarm,” the impossible thing opposed to “loser,” lies at the midpoint between “effluvium” and “machine”: it combines the nerd as pathogen with the nerd-machine, suggesting a flow of pollution and pestilence, waste pouring uncontrollably into the environment. It can also be termed “horde,” “plague,” or any name that suggests the relentlessness of the machine and the endlessness of effluvia. It appears impossible from the perspective of “loser” because the loser is, by definition, incapable of reproduction or alliance. Moving counterclockwise around the triangle, the midpoint opposed to “effluvium” is “cyborg,” a combination of “loser” and “machine.” Because effluvia are the inhuman product of organismal function, “cyborg” appears impossible because it connotes a broken individuality and a refusal to flow. The nerd-cyborg is a special case of Donna Haraway’s fusion of human, animal, and machine: it is failed flesh bound to dead metal. The cyborg is not the body-without-organs of Deleuze and Guattari, but a body whose parts are all too apparent, horrifyingly solid. Finally, the midpoint opposed to “machine” is “degenerate,” a combination of “loser” and “effluvium.” The degenerate is impossible from the vantage of the machine because the machine embodies a fixed, inhuman order, while the degenerate is mutability itself, refusing to stabilize into a healthy, successful form. It is the pathological version of the Platonic dualism of Form and Matter found in the *Timaeus*, and that is its metaphysical significance, the nerd as hylomorphic disaster. The degenerate has a eugenic significance, too: “The

victims of eugenics were poor urban dwellers and rural ‘white trash’ from New England to California, immigrants from across Europe, Blacks, Jews, Mexicans, Native Americans, epileptics, alcoholics, petty criminals, the mentally ill and anyone else who did not resemble the blond and blue-eyed Nordic ideal the eugenics movement glorified” (Black xvii). The degenerate is the nerd as threat to the body politic, the opposite of all-American, the invader that must be repelled, the harbinger of the nation’s decline. It is the place where race and class nerd out together, the price for tolerating imperfection in the city on a hill. The degenerate, the swarm, and the cyborg provide more characters for nerd drama, and more material for vindication through reversal as the harbinger, the alliance, and the transhuman. These three chimeras generate three aesthetics, and their attendant politics, in turn: the queer, the monstrous, and the uncanny.

The movement from *loser* to *swarm* generates an aesthetic of the monstrous: of mindless groups driven by the instinct to destroy civilization through physical force. As the individual nerd moves toward an impossible community, it becomes even less human, arriving at the midpoint between

Table 1.1 Nerd tropology

Primary tropes	Loser, prey Trash, effluvia, pestilence, flux Machine
Secondary tropes	Degenerate, freak Swarm, monster, alien, horde cyborg, geek
Failures	Failure to survive. Failure to thrive. Failure to feel.
Plot vectors	Losers become the alliance of friends. Garbage is recycled. The machine becomes the avatar. The freak finds refuge. The swarm founds a city. The cyborg mediates epiphany. Underdogs challenge the rules of the game. The unreplicable reproduce. Repressed emotion becomes political affect.
Aesthetics	The queer The monstrous The uncanny

effluvium and machine. The aesthetic of the swarm involves myriad individuals engaging in titanic behavior, evoking the San Diego Convention Center overwhelmed by nerds at the annual Comic-Con. Swarms are made of solid particles that move fluidly, as if they are a liquid. Swarms buzz and sting, they appear out of nowhere and drown their environment, consuming vast resources while blotting out the sun. Swarms are naturally insectoid: the cloud of mosquitoes rising from the swamp, peaceful grasshoppers become ravenous locusts, disturbed nests of ants, hornets, and wasps. Swarms may be silent, or they may generate the hum of countless wings, the clack of sextapodic minions laying waste to fertile fields. The machinic extension of the swarm is also insectile: not the bathetic ravings of Marvin the Paranoid Android in *Hitchhiker's Guide to the Galaxy*, but the silent invasion of nanobots in the bloodstream, the assault of the Replicators in *Stargate: SG1*. Swarms are horrible because they possess a collective, invasive intelligence, an implacable drive to consume, and the sheer numbers to overwhelm human bodies from the inside or the outside.

The political version of the swarm, the *horde*, has always been used to connote the nomadic enemy that refuses to respect borders. As Page duBois has demonstrated, the Greek city-state was created in opposition to monstrous enemies: centaurs and Amazons, half-beasts with no respect for the law and women warriors who refused the patriarchal household (duBois 25). From a medieval perspective, the Golden Horde of the Mongols represented the archetypal threat to European Christendom from an exotic enemy that refuses the sedentary life. Swarms are a political disaster because they destroy food systems, while hordes evade politics in the strict sense by neglecting to form a true *polis* with stable boundaries. If the horde is the opposite of the classical polis, it also represents the ecological forces that allow the city to exist in the first place. Swarm aesthetics should remind us of the city's dependence on work done by monsters to make the city possible. Case in point: the crisis of pollination due to Colony Collapse Disorder. Over the last decade, North American honeybee colonies have died in vast numbers because bees leave the hive and never return. Though a variety of factors, including disease, mite infestation, and monocultures appear to be at work, research now points to neonicotinoid pesticides as the key cause of the collapse. The U.S. Department of Agriculture estimates that honeybees perform \$15 billion of work per

year pollinating food crops that would have to be pollinated manually or mechanically in their absence—a true agricultural disaster in the making (United States Department of Agriculture). Honeybees should be thought of as agricultural workers, a transhuman component of contemporary food systems that deserve protection *as* workers. Despite the opportunity for an ecosocialist response to this crisis, Colony Collapse Disorder remains off the radar of the American Left. Another case: ocean acidification, leading to the spread of jellyfish, and the specter of an ocean emptied of vertebrates but conquered by cnidarians in a scenario Alyssa Battistoni describes as “the plot of a second-rate horror movie” (Battistoni 13). In each case, I argue, the true enemy is hidden by swarm aesthetics, leading us to recoil at the sting of monsters instead of the pesticides and carbon pollution. Nerd ecology warns us, however, that the true horror of the monstrous aesthetic is the fear that we, as individuals and a planetary collective, are the real horde poised to overrun the planet. One sees this fear in the rhetoric of the “Sixth Great Extinction,” which compares humanity to the asteroid that killed the dinosaurs. The threat of monstrous aesthetics at the heart of environmental guilt is its tendency to inhibit collective action with a narrative of natural human monstrosity. *Gojira, c’est moi.*

Moving widdershins around the Nerd Triangle from swarm to cyborg, we pass through the machine, taking note of this vertex inverted into figures of the adorable robot friend who saves the world with grit and a good heart. R2D2 and Wall-E are prime examples of the cinematic triumph of machinic cuteness in the face of robot-as-dangerous-slave. If Sianne Ngai is correct, and cuteness/*kawaii* is a postmodern aesthetic that compels our attention with the helpless and the infantile, we should recognize the robot nerd as a rhetorical resource (Ngai 64). At the same time, the adorable machine alerts us to the aesthetic disaster of the nerd as cyborg, which combines the lifelessness of the machine with the failure of the loser. The nerd-borg is the dysfunctional doppelganger of Donna Haraway’s cyborg, the trickster that combines animality, humanity, and mechanism into the interpretive key to postmodern culture. Many critics have mistaken the nerd cyborg for the Harawavian trickster, but their effects are quite distinct. The Borg, the collectivist menace of *Star Trek: The Next Generation*, is/are a good example of this confusion. While the Borg deployed a rhetoric of the collective sublime—their refrain was “Your uniqueness will be added to our own”—

the pathos of this villain lay in its inability to achieve aesthetic perfection. Instead of producing a posthuman synthesis of organism and artifact, the Borg created prostheses of industrial ugliness that they attached to humanoid bodies that became “drones,” the acme of Communist dehumanization in Cold War rhetoric. Through the conversion of Captain Picard to the drone Locutus, audiences came to understand that the most noble human subject could be swamped by the collective cyborg mind. The nerd-borg represents that fusion of humanity and technology that is less than the sum of its parts. Like the zombie, the nerd-borg is an instance of the Freudian uncanny, the horror produced by dead objects that ought not to move, but do. The addition of dead metal to undead flesh only worsens the problem. Robotics scholarship on the “Uncanny Valley” helps us to understand why. Masuhiro Mori, a Japanese roboticist, asked participants to react to entities that were more or less shaped like human beings. By plotting acceptance versus degree of human shape, he discovered that participants felt more comfortable the more an artificial human appeared to be human until a key point of failure, corresponding to corpses, puppets, and zombies. Here, acceptance dropped rapidly into horror, creating the so-called “Uncanny Valley” in the graph occupied by life-like androids, persons with severe physical handicaps, and other boundary-creatures. The uncanny valley of the nerds may be produced when a sickly human becomes so attached to technological devices that a sickness unto death is created. The nerd-borg is the sign of teenagers who text too much, video gamers who stay up for thirty hours straight, and commuters who can’t stop touching their iPads. At the level of the bioregion, the nerd-borg stands for brownfields, toxic waste dumps, landfills, and other facets of the “necro-region”—as Serenella Iovino calls the Po River Valley—where undead land, water, and air keep moving when a self-respecting biome would simply give up (Iovino 101).

The uncanny vitality of the nerd-borg and the necro-region points to the cyborg as a source of ecological politics. In classic American environmentalism, the special place is worthy of protection because of its majesty, which it lends to human visitors. Big Sur, Yellowstone, the Rocky Mountains, and other “green cathedrals” must be kept pure and apart from civilization because they are especially beautiful, powerful, and alive. While there is no denying the importance of such places, there is a danger to this theory of environmental

value. Affirming sites of unusual grace as a rationale for protection leads to an underthought: mundane places do not deserve to live. This is a version of the “charismatic megafauna” problem in species conservation: it is easier to convince the public to care about polar bears than snail darters or “snot otter” salamanders. Some creatures and environments seem more worthy than others. The resemblance to eugenic thinking is striking. This kind of “land eugenics” surfaces especially in American nature writing about the Southwest, such as Edward Abbey’s canon, and in the tradition of the utopian novel of the Pacific Northwest. In Ursula LeGuin’s *Always Coming Home*, set in a far-future Northwest, no one knows or cares about what happened to the East in the disaster that ended the United States. Similarly, in Starhawk’s *The Fifth Sacred Thing*, an ecotopian San Francisco is opposed to a fascist Los Angeles, while in Ernest Callenbach’s *Ecotopia*, the Pacific Northwest secedes from the United States in order to make a better world. The nerd-borg and the necro-region challenge this ethos of superiority. Certain individuals, species, and environments persist after the end of their purity. Poisoned and disenchanting, they attract condemnation or aversion. And yet they survive. Given such uncanny survivals as Pine Ridge Reservation, the Alberta tar sands, Proving Ground Flora, Detroit, East Los Angeles, Ogoniland, the Ninth Ward of New Orleans, the Chernobyl region, the Rocky Mountain Arsenal, the coltan mines of the Democratic Republic of Congo, and the South Bronx, the question for contemporary environmentalism is: how should we support life in the Uncanny Valley, the place that ought to curl up and die?

Donna Haraway suggests an answer in “A Manifesto for Cyborgs” when she contrasts the biblical and Aristotelian dreams of a garden regained, a harmonious cosmos, with the political disruptions of the cyborg, which is “resolutely committed to partiality, irony, intimacy, and perversity” (Haraway 9). Haraway generates a poststructuralist *frisson* by describing the cyborg as Coyote, the preeminent trickster, making it more charismatic and less uncanny than the nerd-borg. Nonetheless, one can glimpse a future for the necro-region in her account of the difference between cyborg and monster: “Unlike the hopes of Frankenstein’s monster, the cyborg does not expect its father to save it through a restoration of the garden; i.e., through the fabrication of a heterosexual mate, through its completion in a finished whole, a city and cosmos” (9). Rather, “the cyborg defines a technological polis based

partly on a revolution of social relations in the *oikos*, the household” (9). The Harawavian cyborg interrupts the hierarchies of husband/wife, master/slave, and human/animal/machine in the Athenian household. It is not merely a description of the postmodern subject glued to her iPad; it is a challenge to the command structure of the classical city-state. The cyborg is a political simulacrum like Vitruvian Man, a model of the individual that is also a paradigm of the community and the universe. It is not a monster because it is still an exemplar, a way of mapping the microverse onto the macroverse, and vice versa. The cyborg is an icon, an image that leads elsewhere: in this case, to a theory of polis and planet that does not depend on classical Greek standards of harmony, proportion, and self-containment. The cyborg as individual undermines the standards of eugenic excellence; as community it disrupts social hierarchies in which every class of person has a single place and a changeless function. The cyborg planet includes biota, the creatures we expect to be alive, as well as machines and their effluvia, now uncannily alive. A cyborg ethos—a moral standard and habitat—expects the human world to flow into the inhuman, the nonhuman, and the posthuman. In such an ethos, there is a place for the nerd-borg and hope for the necro-region. No longer damned by their failure to attain excellence and purity, the Uncanny Valley and its people become part of Nerdland as territory and citizens. This political role of the cyborg is illustrated by the multi-year plot of *Star Trek: Voyager*, in which the captain, Janeway, becomes a mentor to Seven of Nine, a Borg separated from the collective. While the classical models of self and community would lead us to expect the restoration of “Annika Hansen,” her human identity, the show stages a continuous negotiation in which Janeway assists Seven in deciding to what extent she will remain Borg, even as she recovers personal agency. Jeri Ryan, the actor who portrayed Seven, communicates a lasting ambivalence toward both of Seven’s communities, such that she never wishes to be restored to either on its own terms. She remains her own chimera, and charts an unexpected course through the Federation, a humanist utopia in need of a silicon citizen.

The movement from cyborg to degenerate signifies the shift from the dream of a new citizen and the fall of the nation, the difference between the uncanny as a source of weird vitality and the nerd as queer stranger. The degenerate is associated with the deviant, the crippled, the disfigured, and the criminal,

the body politic reduced to unrecognizable waste. The queer degenerate depends on the senses subordinated in Western aesthetics: touch, taste, and smell. While the polis is governed by harmony and balance, beautiful sound and symmetrical shape, a degenerate Nerdland is viscous, bitter, and acrid, the city on hill sliding into the swamp. It is the aesthetic of villainy, the body undermined by inferior genetics or phenotypic betrayal of inheritance. It reveals the aspect of *loser* as failed defender of empire, the young man too weak to conquer and hold a continent as a citizen-soldier. The degenerate is *queer*, “strange,” and not gay: as Jack Halberstam argues, “homonormative” urban male culture asserts standards of virility that parallel norms of female beauty (Halberstam 152). Queer and degenerate produce one another, descending together from the pinnacle of healthy normality set against the nerd as loser. In their introduction to *Queer Ecologies*, Catriona Mortimer-Sandilands and Bruce Erickson identify the queer-ecological attempt to understand “the ways in which sexual relations organize and influence in the material world of nature and our perceptions, experiences, and constitutions of that world” (5). They further identify the project of queer ecology with an “ecosexual resistance” to versions of nature and culture that produce heterosexism as a political norm (21). In this project, queer and nerd ecology intersect. It is instructive to contrast their reading of *Brokeback Mountain*, a film in which masculine men make love in a charismatic wilderness, to the episode of *Will & Grace* (S7 E17) called “Birds and Bees.” In this episode, Jack, the homonormative Manhattanite, identifies a rare bird, the “HGN” or “Hot Gay Nerd,” combining birder and gay shorthand. The HGN, himself a bird-lover, is dressed in the unfabulous gear of the nature geek: cargo shorts, glasses, and a vest made of synthetic fibers. The character is played by Luke Perry, once a teen heartthrob on *Beverly Hills 90210*, tricked out in nerd drag, suggesting a diamond in the rough. The joke of the episode is that the Jack cannot stop himself from experiencing the gay nerd *as* hot, despite his inferior appearance and lack of fabulousness. Unlike Ennis and Jack, the couple from *Brokeback*, the HGN’s attraction evokes astonishment and discomfort, because *nerd* is the antithesis of *hot* in the farcical version of Chelsea. The ability of the hot gay nerd to evoke desire in spite of his aesthetic failures represents the promise of nerd ecology for queer ecology. The degenerate queer is strangely compelling, and not as rare as Jack might suppose. The new comic book *Lumberjanes* (2014), about a

pack of queer girl scouts on a wilderness adventure, begins to make the same point from the tomboy's point of view.

However promising “adorkable” might be as a supplement to megafaunic charisma, queer-degenerate does pose an aesthetic challenge that relates to class and environmental justice. In “Marxism and Ecocriticism,” Lance Newman suggests that there is a critical vector connecting Antonio Gramsci and Raymond Williams, who paraphrases Gramsci's concept of hegemony as “a whole body of practices and expectations, over the whole of living: our senses and assignments of energy, our shaping perceptions of ourselves and our world” that make capitalist society appear natural, inevitable, and unchangeable (quoted in Newman 16). Hegemonic concepts of the degenerate teach us to see bodily difference as otherness, to experience the ill, the poor, and the immigrant as less than human, vectors of aesthetic inferiority understood as disease. The challenge to aesthetic hegemony presents a problem for queer ecology, given the compensatory nature of physical beauty in gay culture after Stonewall. The idolization of the perfect athletic physique and the ultraglamorous drag queen represent the butch and femme versions of a weaponized beauty in the war against heteronormativity. As many queer critics have noted, there is a high price for this weapon: the rejection of the fat, the old, and the ill in the age of AIDS. Queer ecologists must not only question the immediate price of such aesthetic weapons, they must also question the inscription of gay identity into a standard of affluence that is unsustainable for most of the world. We must question to what extent queer aesthetics can disrupt such norms in an age of gay marriage and military service that is also an age of nativism, demonization of the poor, and ecocidal globalization. As Newman avers, ecosocialism must teach us of “the coevolution of material social and natural systems that has produced the present crisis, and of the long history of creative struggle to overturn an ecosocial order founded on the oppression and exploitation of people and nature” (Newman 21). Queer nerds should find the revolutionary heart of *Napoleon Dynamite*.

Finally, an aesthetic of queer degeneracy must privilege desire and enthusiasm, the very qualities denied to the machine, and denied to hegemonic masculinity and femininity outside highly policed boundaries. Nerds like what nerds like beyond the narrow confines of gender role: this is the essence of degenerate affect and the danger of nerd love. In a moving speech to a young

girl at the Denver Comic Con in June 2013, Will Wheaton defended the rights of nerds to love nerdy things. The girl asked Wheaton, who played Wesley Crusher in *Star Trek: The Next Generation*, whether he had ever been called a nerd, and what he had done about it. Wheaton explained:

When I was a boy I was called a nerd all the time—because I didn't like sports, I loved to read, I liked math and science, I thought school was really cool—and it hurt a lot. Because it's never ok when a person makes fun of you for something you didn't choose. You know, we don't choose to be nerds. We can't help it that we like these things—and we shouldn't apologize for liking these things. (Velez)

His argument was greeted with thunderous applause. Wheaton uses the “born this way” defense of queer love to assert that nerds do not choose to desire what they desire, and therefore have a right to assert those desires. Though one might object to his appropriation of liberationist rhetoric for the realm of nerd desire, Wheaton's answer points to an important truth about the queer nerd aesthetic: it involves the performance of emotions forbidden to the winner and to the machine. It moves toward effluvia in its disregard for the affective boundaries of gender. Relative to normative American masculinity, nerd affect is queer because it involves the expression of love for cultural artifacts and practices associated with childhood, and not with the adult masculine role of producer and reproducer. Enthusiasm as such is forbidden (except in the realm of competitive sports) because men are expected to exert rational control over their emotions. Nerd love is queer relative to normative American femininity when it is directed at cultural artifacts and practices associated with boys. Even an activity such as cisgender cosplay is queer because it transgresses into the masculine pursuit of embodying heroism. Wheaton's claim that nerds love these things naturally, and need not apologize for natural desires, asserts a politics of affect that is dangerous to American gender norms. When Greta Gaard called for a combination of queer and ecofeminist insights to generate “a genuine transformation of Western conceptions of the erotic as fundamentally opposed to reason, culture, humanity, and masculinity,” she was not writing about nerd culture, but she could have been (Gaard 137). Audre Lorde's goal of freeing the erotic from the logic of domination lives on in Nerdland as an environment of affection and enthusiasm. It retains the radical potential to

incite environmental justice by expanding that affection to the degenerate through a politics of hospitality.

Nerds and their ecology are finally important because they contain the resources that poison entire populations and condemn whole environments. But the tension inside the nerd-sign means that the nerd may be a *pharmakon*, the poison that is also the cure, if the meanings generated by the nerd system can be transvalued in an ecological thought of hope. It is certainly true that nerd culture yields evidence of the loser, effluvium, and machine: there are enough stories about underdogs, shape shifters, and plucky robots to make that clear. There are also narrative vectors formed by the movement from vertex to recycled opposite: the story of the nerd alliance (loser to community); the story of nerd alchemy (effluvium to cyborg trickster); and the story of nerd epiphany (machine to avatar). The three aesthetics of monstrous, uncanny, and queer nerdiness connect the modes of nerd existence to artistic and political struggles in postmodernity. Perhaps the most hopeful of all tropes is the movement around the triangle itself that begins a process of nerd transmogrification. This process challenges eugenics, waste, and mindless destruction through a transhuman polity too stubborn to go extinct. If nerdist can harness the power of transmogrification consciously and collectively, it may be possible to embody our stories in a culture of world-defense. Perhaps it is true that an earlier moment in postmodernity was characterized by the collapse of the epic tales that structure civilizations, as Jean-François Lyotard claimed in *The Postmodern Condition*. Yet, his account of this collapse depends on an elision of story-building powers produced by postmodernism itself, namely, popular culture mediated through literature, film, television, and social media. As Henry Jenkins demonstrates in his studies of fan culture, nerds have moved beyond passive consumerism in relationship to the culture industry, and assumed the role of “prosumer,” a producer-consumer of culture. Media convergence and participatory culture make the pessimism of classic theories of postmodernism appear premature. Even now, the unpopulars demand a place in the creation of new narratives. Chief among these stories is the hope of an ecological, planetary culture that includes many peoples, species, and environments. Why do we keep telling these stories? Because we are trying to make them come true. The study is meant to reveal the hidden coherence in these efforts that is difficult to see

when one focuses obsessively, as nerds do, on one object at a time. Though the roots of nerd narrative are many, there is one incontrovertible beginning to the project of geektopia. At the foundation of the eco-cosmopolitanism of nerds, there is a Federation: The United Federation of Planets, the great tale of nerd utopia among the stars.