Rappaccini’s Planet: The Legacy of Hawthorne in Vonnegut’s Cat’s Cradle, Pynchon’s Gravity’s Rainbow, and DeLillo’s White Noise

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Although definitive credit for inventing the mad scientist genre of modern fiction rightly belongs to Mary Shelley, Nathaniel Hawthorne is unarguably its pioneering American practitioner. The theme of mad science is uniquely appropriate to the American imagination. Not only has the rhetoric of American exceptionalism frequently been framed in terms of techno-scientific mastery of the world, but the United States itself is a kind of Frankenstein polity, built from scratch out of the spirit of the Enlightenment. The legacy of the American tinkerer can be traced back in time from Silicon Valley to Los Alamos to Menlo Park to Constitution Hall in Philadelphia. The American experiment begins as an attempt to engineer a new kind of world for man to live in and, correspondingly, a new kind of citizen to inhabit it. In the language of the founding documents of the United States, the framers convinced themselves and their contemporaries that the elaborately wrought apparatus of governance that they invented and instituted returns citizens to their “natural” condition as free individuals. Such a claim, however, obviously plays fast and loose with the definition of nature. The ostensibly natural world of American constitutional democracy is a mental and semantic environment as finely wrought as the mechanical butterfly in Hawthorne’s story, “The Artist of the Beautiful.” The condition of United States citizens has always been one of participation in an elaborate experiment in the fusion of the world of nature with the world of mind; an experiment concocted by a previous generation of illustrious forefathers.

Hawthorne evokes this historical condition in The Scarlet Letter (1850), which describes a failed experiment in social engineering, but the 1844 short story, “Rappaccini’s Daughter,” contains Hawthorne’s most vivid depiction of an experimental environment. Dr. Rappaccini’s daughter, Beatrice, and his poison garden are both products of Rappaccini’s cross-breeding of Nature
and Intellect. Beatrice’s identity has been altered so subtly and at such a genetic level that she is indistinguishable from a natural girl in a natural garden. The illusion is compelling enough to befuddle her hapless admirer Giovanni into unwittingly becoming a part of Rappaccini’s experiment and becoming himself transformed into another one of the mad scientist’s daughters. Rappaccini is sowing the seeds of a new kind of nature, an artificial nature which takes root reciprocally in the external world and in the corporeal being of his experimental subjects. In expressing this allegory, Hawthorne reveals a compelling aspect of the phenomenological being of technology, that any given technological apparatus – be it representational democracy, the telegraph, or the Bomb – constitutes just as much of an incursion into the selfhood of the person who lives in the environment articulated by that technology as it does upon the environment itself.

The interrelationship between an environment that has been invented for Americans by previous generations and the romantic-transcendental ideal of an authentic subjectivity has become a conspicuous theme in the post-atomic American novel. The Rappaccini-esque mad scientist – his fingers in the twin pies of the environment and the subject – has consistently been a shadowy figure in the background of this crisis of identity and self-possession. With remarkable consistency, the conceptual architecture that inspired “Rappaccini’s Daughter” – A mad scientist creates an artificial world which then becomes the natural home for his unwittingly artificialized experimental subjects – is revived in at least three major novels of the Cold War era, Kurt Vonnegut’s *Cat’s Cradle*, Thomas Pynchon’s *Gravity’s Rainbow*, and Don DeLillo’s *White Noise*. In each of these novels, the protagonists – Jonah, Tyrone Slothrop, and the Gladney family – discover what Giovanni discovers, that their fate and very character bear an alienating correspondence to scientific interventions that are beyond the scope of their understanding. Within the continuities of these texts, it is possible to discern the refinement of Rappaccini’s manipulations on his various progeny as his experimental methods progressively become more subtle, more viral, and simultaneously more all-encompassing and more invisible.

Rappaccini accompanies Aylmer of “The Birthmark” and Chillingworth of *The Scarlet Letter* in Hawthorne’s pantheon of mad scientists whose demonic lack of empathy and humility causes them
to relate to other people as experimental subjects. This attitude, of course, is precisely what another Hawthorne character, Ethan Brand, recognizes to his horror as the Unpardonable Sin, of which he himself is preeminently culpable. Hawthorne writes of Ethan Brand that “He was now a cold observer, looking on mankind as the subject of his experiment, and, at length, converting man and woman to be his puppets, and pulling the wires that moved them to such degrees of crime as were demanded for his study” (365). If the culmination of Brand’s tale is the calcification of his own heart into an industrial material, Hawthorne describes Rappaccini as “as true a man of science as ever distilled his heart in an alembic” (53). Baglioni explains of Rappaccini that “He cares infinitely more for science than for mankind. His patients are interesting to him only as subjects for some new experiment. He would sacrifice human life, his own among the rest, or whatever else was dearest to him, for the sake of adding so much as a mustard seed to the great heap of his accumulated knowledge” (41). Although Baglioni himself is introduced into the story as a more humanistic variety of scientist, the ending of the story leaves it unclear whether Baglioni truly had Beatrice and Giovanni’s best interests at heart when he counseled Giovanni to give Beatrice the antidote which directly causes her death, or whether his rivalry has caused him to manipulate Giovanni into thwarting the rogue physician’s radical experiment. An implication this ambiguity raises is that, more than simply being the victims simply of Rappaccini himself, Giovanni and Beatrice are destroyed by a collaborative techno-scientific project in which they count only as guinea pigs or pawns. Hawthorne’s critique of the techno-scientific imagination is that it constitutes a dehumanizing mode of perception. The kind of gaze which Lavoisier and Ben Franklin turned on the physical properties of the nonhuman world can easily be redirected onto other people in a way that effaces any discontinuity between human subject and material object. In this respect, it is significant that Rappaccini has two ongoing experiments, one which is directed toward his botanical manipulations and one which is directed toward his daughter and her lover. Or rather, both the nonhuman and the human experiments are part of the same overarching project of creating a new ecology characterized by the fusion of the nonhuman with the human.

Victor Frankenstein and Aylmer experiment with the flesh of human beings, but Rappaccini is remarkable in that he experiments
on the environment of human beings. Although it seems initially that Rappaccini is solely interested in botany, the ultimate thrust of his experiment is toward fashioning a new race of super beings who, in the hackneyed phrase of so many post-Hawthornian mad scientists, will conquer the world. But Beatrice and Giovanni, Rappaccini’s unwitting subjects, could not be more indifferent to Rappaccini’s grandiose dream of unlimited power. They are entranced by the strange allure of the poisonous habitat that Rappaccini has engineered to be the plastic womb or artificial Eden for his new creatures. The garden itself is a vast experiment in the hybridization of nature and artifice. “Several [plants] also would have shocked a delicate instinct by an appearance of artificialness indicating that there had been such commixture, and, as it were, adultery of various vegetable species, the production was no longer of God’s making, but the monstrous offspring of man’s depraved fancy, glowing with only an evil mockery of beauty” (47-8). Beatrice herself is an extension of the garden, another grotesquely beautiful crossbreed of nature and art. She is the human twin of the purple plant that is the centerpiece of the garden; Hawthorne’s title “Rappaccini’s Daughter” refers ambiguously either to Beatrice or her twin plant. Beatrice explains, “At the hour when I first drew breath, this plant sprang from the soil, the offspring of his science and his intellect, while I was but his earthly child” (56). As a participant in a human-nonhuman dyad along with the plant, Beatrice’s humanness is intertwined with her nonhumaness and inseparable from it. But Giovanni also becomes another one of Rappaccini’s daughters. Hawthorne describes Giovanni’s attraction to and pursuit of Beatrice in terms that leave Giovanni’s motivations in doubt. In a classic case of Hawthorne’s characteristic narrational ambivalence, Giovanni is plagued by a suspicion that his infatuation with Beatrice is not entirely sincere; there is something artificial intermixed with his passion. He is troubled by questions as to “whether this intense interest on his part were not delusory” (47), and the narrator suggests that Giovanni’s love may be nothing more than “that cunning semblance of love which flourishes in the imagination, but strikes no depth of root into the heart” (51). It is as if Giovanni’s will has been hijacked. We discover in retrospect that, rather than acting out of his own volition, Giovanni’s emotions are being manipulated from without through the influence of Rappaccini’s artificial environment to which Giovanni becomes
increasingly and then inescapably habituated. The artificial garden has taken root in the subjectivity of its inhabitants and Giovanni discovers too late that he has become “severed … from all the warmth of life and enticed … into [a] region of unspeakable horror” (57). Giovanni thereby becomes one of the first, but not the last, fictional character to be manipulated by a technological environment to become technologified in his being.

Kurt Vonnegut’s breakthrough novel, 1963’s *Cat’s Cradle*, centers around the figure of Dr. Felix Hoenikker, “one of the so-called ‘Fathers’ of the first atomic bomb” (14), who has a number of affinities with Hawthorne’s Rappaccini. Most evidently, he is a brazen perpetrator of the Unpardonable Sin. His scientific imagination is characterized by an inexhaustible curiosity bereft of any ethical dimension. If Rappaccini’s madness is that “he cares infinitely more for science than for mankind,” Dr. Hoenikker’s son Newt explains of his father that “People couldn’t get at him because he just wasn’t interested in people. I remember one time, about a year before he died, I tried to get him to tell me something about my mother. He couldn’t remember anything about her.” (19). Hoenikker is able to dream up inventions like the atom bomb and ice-nine out of a complete obliviousness to the human consequences that might result from the realization of such ideas. Indeed, another telling similarity between Rappaccini and Hoenikker is that they are both ambivalently parents of human and nonhuman progeny. Hoenikker is “Father of a bomb, father of three children, father of ice-9” (82). If anything, Hoenikker is a much more devoted father to his nonhuman children than his human children. If Rappaccini is humanized somewhat by his father’s pride in the uniquely gifted daughter he has raised, the only interest Dr. Hoenikker ever demonstrates in his three children is his deathbed gift to them of his ultimate brainchild, the pellets of the apocalyptic substance ice-nine. This gesture entwines the fate of the human and inhuman children in as tangled an existential knot as that which bound Beatrice to her vegetable sister.

But more than simply an invention, Dr. Hoenikker bequeaths to his children an entirely new kind of environment. As closely as Beatrice is confined in her artificial Eden, Dr. Hoenikker has enclosed his children in a kind of world that has been altered on the genetic level by technologies of mass-destruction. In this sense, we are all Rappaccini’s children. Jonah, the narrator of *Cat’s Cradle*, is
working on a book about the day the first atomic bomb was dropped on Hiroshima which he intends to title “The Day the World Ended.” The new world that exists in the wake of the end of the world is a techno-human ecology, a global Rappaccini’s garden in which subjective identity is hybridized with the impersonal forces of techno-scientific systems. Dr. Hoenikker’s gift to his children of ice-nine is paralleled by his corresponding gift to the world of the Cold War condition. Hoenikker’s children – Newt, Franklin, and Angela – have only their father’s legacy to help them make their way in the post-apocalyptic world that Felix has invented, and the major events in their lives – Newt’s affair with a Russian acrobat, Franklin’s employment in the government of San Lorenzo, and Angela’s marriage to a corporate technocrat – are all facilitated entirely by the interface between their identity as possessors of ice-nine and the Cold War ecology of global weaponization. As subjects, they constitute little more than a circuit between the artificial identity which their father has bequeathed to them in the form of ice-nine and the nuclear garden he has planted for them in the form of the atomic economy. But if the atomic age ushers in the end of the world in a figurative, potential sense, ice-nine ultimately brings about a literal, actual apocalypse. Hoenikker had originally imagined ice-nine as a solution to the problem of mud. In order for armies to march efficiently across swaths of land, ice-nine would theoretically plasticize the earth by locking water molecules into a fixed position. The dream of ice-nine is the dream of a synthetic reconfiguration of nature itself into the abstract, eternal, and dehumanized world that is the natural home of the techno-scientific mind. When “seeds” of ice-nine spill out into the ocean, it causes a chain reaction which locks the entire globe into the man-made condition of terminal entropy. All the Hoenikker children are killed in the ensuing catastrophe, but those who eke out a living in the bleak Hoenikker garden are all Hoenikker’s daughters, living in the posthuman environment that follows the commission of the Unpardonable Sin on a global scale.

Thomas Pynchon’s 1974 masterpiece Gravity’s Rainbow also conceptualizes the Cold War environment of military technologies according to a Rappaccini-esque scenario. Pynchon’s relationship – literary and ancestral – with Hawthorne is an intimate one, and the shadowy character of Dr. Laszlo Jampf in Gravity’s Rainbow represents an homage to Hawthorne’s Unpardonable Sinners.
Rappaccini delights that, thanks to his bioengineering, his daughter is to be “endowed with marvelous gifts against which no power nor strength could avail an enemy” (59). Dr. Jampf looks forward to a similar kind of puissance when he advises his students to “move beyond life, toward the inorganic. Here is no frailty, no mortality – here is Strength, and the Timeless” (580). Where Hoenikker’s posthuman future took the form of a rigidified landscape determined by angles and inorganicism, Jampf shows a similar impatience with the physics of indeterminacy. As a chemist, Jampf prefers the crystalline ionic bonds to the wishy-washy covalent bonds, and speculates on the possibility of replacing carbon with silicon as the basis for organic molecules, thereby retranscribing biological processes as chemical ones. Rather than simply caring infinitely more for science than for mankind, Rappaccini and his subsequent avatars engage in science in order to pursue the solution to mankind, to reproduce humanity as the progeny of Intellect, rather than of the merely biological process of mammalian reproduction. Accordingly, in Gravity’s Rainbow, Jampf is also a surrogate father-figure to the novel’s main character, Tyrone Slothrop. Slothrop’s parents sold him to the psychology department of Harvard University, where Jampf used “Baby Tyrone” as the experimental subject in his final experiment “before he phased into organic chemistry” (84). Jampf’s Baby Tyrone experiment is a fitting bridge between psychology and organic chemistry in that it involves the establishment of a deep psychological connection between Tyrone’s human consciousness and a synthetic material, Imipolex G. Just as inextricably as Beatrice’s flesh is interfused with the substance of her ambient artificial plantlife, Slothrop’s very consciousness is hyperlinked to Jampf’s mysterious plastic.

Just as Hoenikker’s techno-scientific interventions shape not only the personal lives of the Hoenikker children but also infect the kind of world they inhabit, so Imipolex G is not only a component of Slothrop’s consciousness, but also a structural component of the Nazi missiles which rain down around him as he is stationed in London during the Blitz. The mystery with which the novel begins involves an uncanny correspondence between the location of missile strikes and the sexual activities of Lt. Slothrop. Slothrop’s erections seem to be able to predict the sites of future missile strikes. The “ass-backwardsness” of this phenomenon – Tyrone’s conditioned response precedes the introduction of the conditioned stimulus –
suggests that the connection between Slothrop and Imipolex G is so integral that it delves below what we know about time and space. Imipolex G is Slothrop’s twin brother, his erotic fixation, and the central mystery of his identity all in one, and the ambiguity of the causal relationship between Slothrop’s erections and the missile strike sites suggests that Imipolex might be just as mysteriously tied to Slothrop as Slothrop is tied to Imipolex. This radical intrication of human subject and nonhuman object is so severe as to actually disrupt Slothrop’s subjectivity altogether, and the final third of the novel describes Slothrop’s disintegration into the postwar landscape of Jampf’s Garden, the kind of world that exists beneath the penumbra described by the missiles which land on the reader at both the very beginning and the very end of the novel. The continuity of the message from Hawthorne to Vonnegut to Pynchon is clear: as foster children of the artificial garden, our true fathers are neither biological nor theological, but technoscientific.

Jack Gladney, the protagonist of Don DeLillo’s 1985 novel, *White Noise*, has no father that we ever hear about. The novel has no central Rappaccini, and yet Jack’s entire world is certainly a Rappacini’s garden, an artificial world which represents his natural home. Baglioni’s observation that Rappaccini’s scientific gaze constitutes “a look as deep as nature itself, but without nature’s warmth or love” (45) is echoed in a snappy aphorism articulated by one of the characters in *White Noise*: “Technology is lust removed from nature” (285). Jack exists in a technological environment of shopping malls, supermarkets, television shows, psychopharmaceuticals, and inscrutable but all-pervasive electromagnetic radiation. As with Beatrice, the Hoenikker children, and Slothrop, Jack’s personal identity is interlaced with his artificial environment in a variety of ways. Most literally, Jack’s personal exposure to the synthetic chemical Nyodene D during the Airborne Toxic Event imbues him with a strange existential relationship to the similarly infected landscape. Jack, a 52 year old man, is told by his doctors that as a result of his toxic exposure, he probably doesn’t have more than 35 years or so to live. The humor here of course comes from the redundancy of the sentence. The death that results from computers and industrial chemistry is indistinguishable from the natural-biblical-pastoral allotment of three-score and ten. So in a sense, we breathe a sigh of relief for Jack Gladney, because his fate is essentially unchanged. But then, if we are sympathetic to
DeLillo’s sensibilities, we will freeze up with dread on Jack’s behalf, because his fate, his very existence, the meaning of “fate” itself, is changed utterly, infected on the genetic level with a synthetic reagent. His life itself – in an existential rather than merely biological sense – has been contaminated. For Jack Gladney, as for Beatrice and Giovanni, the horror is that technology and its living death have infiltrated the structure of the natural self.

Moreover, the same chemical that reconfigures the nature of Jack’s existence also reconfigures the nature of the physical world. The Airborne Toxic Event has scattered Nyodene D into every aspect of Jack’s environment. The most visible manifestation of this infection is that, due to the trace amounts of poisonous residue in the atmosphere, the sunsets in Jack’s home town are newly beautiful in an eerie, almost disturbing way that recalls the gaudy beauty of Rappaccini’s artificial flowers. Nyodene D has infiltrated Jack’s physical world as genetically and as subversively as it has entered his life. This relation between Jack’s condition and his physical habitat is not merely a metaphorical or symbolic relation, it is a real correspondence between subject and object; Jack and the evening sky are both transformed in their being by the same industrial contamination. The same anonymous Rappaccinis have rendered the same kind of change in the sunset that they have rendered in Jack’s self-understanding. When this depth of fusion has been achieved, it becomes pointless to talk about Nature over here and Civilization over there. The apocalypse has come and gone unnoticed. The trees still stand, the sun still shines, but nature has become artificialized in its phenomenological being; its perceptual structure has been plasticized, acculturated, domesticated. Like Vonnegut and Pynchon, DeLillo imagines the contemporary techno-scientific environment as a global Rappaccini’s garden in which all human beings are the experimental guinea pigs.

From the perspective of the social critiques of these latter-twentieth century writers, Hawthorne’s story can seem eerily prophetic. Its nightmare vision of human beings genetically interlaced to the mortal depths of their being with a technological environment has become a fitting paradigm for expressing the logical extension of the techno-scientific imagination from the world of nature to the world of mankind. Beatrice and Giovanni are pioneering cyberpunks, personalities for whom, as Bruce Sterling explained in his preface to the influential anthology *Mirrorshades*
“technology is visceral … It is pervasive, utterly intimate. Not outside us, but next to us. Under our skin; often inside our minds” (xiii). Although Vonnegut, Pynchon and DeLillo are not generally recognized as cyberpunk writers, their vision is consistent with Donna Haraway’s famous pronouncement that “By the late Twentieth Century, our time, a mythic time … we are all cyborgs” (150). But the cyborgism inherent in the ontology of characters like Jonah, Slothrop, and Jack Gladney is more invasive than any brute conjunction of flesh and apparatus; these characters wear their otherness in the heart of their self-understanding, and the mechanical prosthesis into which they are strapped is nothing less overarching than the entire world that they inhabit. The real meaning of the nuclear bomb is not the object in a silo, but the creation of a race of human beings whose personalities are shaped under the possibility of instantaneous global annihilation. The meaning, similarly, of other signature twentieth century technologies such as mass-media, global telecommunications, and genetic sequencing, are to be found not in their instrumental structures, but in their psychological significance. In reconfiguring the tactile and semiotic structure of the world around us, plastics and other synthetic chemicals – ice-nine, Imipolex G, or Nyodene D – reconfigure the shape of Twentieth Century subjectivity in ways that are simultaneously all-pervasive and radically incomprehensible.

In the twenty-first century, Rappaccini’s experiment in the cross-breeding of human beings and technological ecologies takes an increasingly diverse variety of forms. The Matrix series of films (1999, 2003) imagines Rappaccini’s garden as a construct of artificial intelligence into which human consciousness is collectively imprisoned. The mastermind of the Matrix is a Rappaccini-esque computer program known as The Architect, and the Beatrice of the garden, Neo, learns that even when he thought he was escaping the computer-generated garden, he was in fact only acting in accordance with The Architect’s master design. Margaret Atwood’s 2003 novel Oryx and Crake transplants Rappaccini into the era of genetic engineering. The novel’s Rappaccini is the brilliant but vaguely autistic and dangerously aloof young geneticist, Crake, whose twin “daughters” are a species of genetically designed Crakers, humanoid animals that Crake believes to be better adapted for survival than natural humans, and a globe depopulated of the old, outmoded kinds of human beings by Crake’s homemade virus. The natural world of
the new man-made species of humans includes animals, plants, and microorganisms that are products of the genetic experiments of the late human race; Crake’s artificial Adams inherit the artificial garden that is their natural home. The ABC television series “Lost,” (2004-2010), strands its characters on a presumably uncharted island of Edenic beauty, snatching them, so it seems, from their complex, globalized twenty-first century lives and delivering them over to a state of nature. Although the nature of the island remains unspecified as of this writing, the mystery of the island’s identity is animated by the question of whether the island is a naturally-occurring phenomenon, an anthropogenic anomaly, or some hybrid of both. The narrative has insinuated by turns that the island may actually be a psychological testing facility, a geoengineering laboratory, or even a globally-financed physics experiment in which the castaways have been intentionally set down, like rats in a maze. The various figures who have appeared to play the role of Rappaccini in “Lost” include the shadowy Hanso Corporation, the Dharma Initiative, Widmore Industries, and, with alarming frequency, the castaways’ own fathers. The recurring fusion of the artificial world and the correspondingly artificialized self connects all these fables of computer simulation, genetic engineering, and globalization, just as it permeates our discourse about global warming, the media environment, the mainstreaming of psychopharmacology, and cybernetic medical implants. To interrogate any of these proliferating revolutions in classical understandings of what constitutes the human is to turn an accusatory eye to Rappaccini and ask, along with Baglioni: “Is this the upshot of your experiment?”
Works Cited


