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ARTICLE

Meatspace is Cyberspace: The Pynchonian Posthuman in *Bleeding Edge*

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This article examines Thomas Pynchon's indirect critique of utopian posthumanism in *Bleeding Edge* by analyzing the deleterious effects that an emerging Internet culture has on the novel's characters. By seeping into every aspect of their lives, embedding itself in their minds, and becoming a prosthetic consciousness, the Internet has transformed the characters into posthumans and altered their subject positions within a technological global capitalist culture. Contrasting the novel's take on the posthuman with the posthuman theories of Donna Haraway, N. Katherine Hayles, Robert Pepperell, Rosi Braidotti, David Roden and Seb Franklin, I argue that, while the dominant utopian strain in posthuman theory imagines the advent of posthumanism as an opportunity for liberation from the sexism, racism, and colonial oppression that are enabled by the positing of the classical humanist subject, Pynchon demonstrates that because the Internet technology that brought about the posthuman condition is controlled by governments and corporations, it has become just one more lost chance at freedom that was converted into an instrument of increased control and surveillance. Reading *Bleeding Edge* against William Gibson's prototypical posthuman novel *Neuromancer*, I also contend that while Gibson, despite challenging the ontological primacy of meatspace over cyberspace, keeps the two realms separate, Pynchon, who borrows Gibson's terms, shows that cyberspace has already merged with meatspace. As a result, Maxine Tarnow, the protagonist of *Bleeding Edge*, has nowhere to run in her attempt to find a provisional refuge for herself and her family.

“It is a principal aspect of the electric age that it establishes a global network that has much of the character of our central nervous system.”

—Marshall McLuhan, *Understanding Media*

“As you gaze at the flickering signifiers scrolling down the computer screens, no matter what identifications you assign to the embodied entities that you cannot see, you have already become posthuman.”

—N. Katherine Hayles, *How We Became Posthuman*

Like Oedipa Maas' ancient namesake, Thomas Pynchon's protagonists are often given a riddle to solve that promises to unlock the secrets of their culture. In *Bleeding Edge*, that riddle is: What do the Internet and 9/11 have in common? As Maxine Tarnow discovers, the answer is that they both offered the hope for positive change and liberation, but instead became coercive instruments of control. Because the September 11 attack on the World Trade Center is located at the temporal midpoint of the novel, one would expect the focus of the narrative to be the elaboration of the paranoid conspiracy theories for which the author is known. While the adumbration of such theories maintains much of the narrative tension throughout the novel's first three hundred pages, they do not take on the force or significance of the Tristero conspiracy from *The Crying of Lot 49*. For although *Bleeding Edge* shares *Lot 49*'s basic plot structure and features a similar female quasi-detective protagonist, Pynchon's latest work is less interested in evolving plausible conspiracy theories about the American government and big business than it is in examining the effects of cyber-technology on the status of the post-9/11 American subject under late capitalism. In this sense, *Bleeding Edge* is a posthuman novel.

Over the past thirty years, posthuman theory has evolved as technological advances have confirmed the poststructuralist deconstruction of the liberal humanist subject. The classical humanist model imagined the human being as a discrete individual whose mind and body were cleanly split in Cartesian fashion. However, new neuro-scientific insights into the working of the human brain suggest that the

mind and body are inextricably interconnected and that the individual consciousness cannot be separated from the environment it inhabits. In addition, technological innovations allowing for the genetic, mechanical, and cybernetic alteration of the human body call into question the limits of human identity. A dominant strain in posthuman theory sees the breakdown of the binary distinctions that buttressed the humanist definition of the individual subject—implicitly posited as a colonizing white male of European origin—as an opportunity for liberation from patriarchy, institutional racism, and colonialism. In *Bleeding Edge*, Pynchon indirectly critiques this utopian movement in posthuman theory by acknowledging the material conditions under which the technologies that challenge the humanist conception of the human arose. He argues that because such technologies—specifically Internet technologies—are controlled by a coalition of government, law enforcement, and big capital, the advent of posthumanism has become another in a long line of opportunities for freedom that was co-opted by the powers that be and transformed into an instrument of oppression. Pynchon's description of the subsumption of human beings under a computerized global capitalist system is in line with Seb Franklin's analysis of control societies that de-subjectify individuals and reduce them to programmable objects whose inputs and outputs are valorized. Pynchon mounts a form of resistance to the apparatuses of control by revealing to Maxine and the reader the extent to which 21st century posthumans are already programmable objects and by locating them within the matrix of economic relationships that constitute global capitalism.

From the inception of posthuman theory, its practitioners have exhibited an idealistic tendency to view the change in the ontological status of the human as a positive development. Donna Haraway openly displays the utopian project of her essay "A Manifesto for Cyborgs" (1985), which is often regarded as a foundational text of posthuman theory. She argues that the human subject has already become a cyborg, which she defines as "a cybernetic organism, a hybrid of machine and organism, a creature of social reality as well as a creature of fiction" (7). Haraway uses the figure of the cyborg to suggest that technology has become a prosthetic extension of humanity, in Marshall McLuhan's sense, which has altered the way we conceptualize

humanity.¹ For her, this is an opportunity for liberation from patriarchal capitalist hegemony. By breaking down the barriers between the mind and the body, the individual and the environment, and the human and mechanical, Haraway believes that the replacement of the humanist subject with the cyborg can also break down the distinction between male and female that has facilitated the systematic oppression of women for centuries.

Posthuman theorists like Rosi Braidotti and David Roden, who have succeeded Haraway, have fleshed out her description of the posthuman as cyborg and have continued her utopian mission. In *The Posthuman*, Braidotti attempts to develop a posthuman ethics that will allow us to avoid the potentially oppressive aspects of capitalist-controlled and technologically-engineered posthumanism, concluding that “the end of classical Humanism is not a crisis, but entails positive consequences” (51). These positive consequences arise, according to her, because while the classical humanist subject was posited as an individual ruled by self-interest, the posthuman subject is indistinct from his or her “territorial or environmental inter-connections” (190). This engenders an enlarged sense of responsibility for one’s environment and community, encouraging ethical actions. Roden, meanwhile, attempts to adopt a more neutral stance in *Posthuman Life*, but his idealism surfaces in his defense of technology from the allegation that it strips human beings of their agency. He argues that “while technology exerts a powerful influence on individuals, society and culture, this cannot be an ‘autonomous’ influence because there are no ends or purposes proper to it” (153). For him, the tendency of a technological development in one field to create a domino effect that produces developments other fields “does not remove human agency but mediates it through networks where no single agent or collective is able to exercise decisive control over the technical system” (156). Roden seems to be splitting hairs here in order to caution against apocalyptic prophecies that computers will eventually take over the world. For, as Pynchon demonstrates in *Bleeding Edge*, what ultimately matters is not whether technologies are technically

¹ Robert Pepperrell clarifies and reaffirms the posthuman notion of the interrelation between humans and technology that constitutes Haraway’s cyborg: “The posthuman conception of technology is that of an *extension* to human existence, not of an external agent with a separate history and future” (152).

autonomous, or whether they completely eliminate human agency rather than merely mediating it. What more crucially determines the extent to which evolving computer technologies serve to oppress or liberate individuals are the hands that control those technologies and the uses to which they put them. The potentially oppressive consequences of posthumanism that Pynchon exposes in his critique of posthuman utopianism begin to surface in the works of posthuman theorists who focus on the material conditions underlying the reconceptualization of the human subject.

In her anatomy of posthumanism *How We Became Posthuman*, N Katherine Hayles clarifies the figure of the cyborg introduced by Haraway, and, in the process, reveals one of the potential flaws of posthuman theory that Pynchon will pick up in *Bleeding Edge*. In Hayles' view, we are not cyborgs because our bodies have been physically augmented with cybernetic parts, but because the development of technology has forced us to re-conceptualize what it means to be human. As she puts it, "People become posthuman because they think they are posthuman" (6). Therefore, the posthuman cyborg is more of a theoretical than a practical reality, and as Pynchon demonstrates, this is why posthuman utopianism cannot effect the liberation of the human subject. While posthuman theory allows us to imagine subject positions that are unconstrained by the lopsided binary oppositions complicit in the oppression of women, racialized others, and postcolonial subalterns, the theoretical deconstruction of the humanist subject and its reconceptualization as the posthuman cyborg do nothing to change the material reality, which is that the very technologies that generated posthuman idealism have already become the instruments allowing global capitalist forces to extend their domination of the populace.

While Hayles' relatively neutral account of posthumanity reveals the gap between theory and practice, the more recent work of Robert Pepperell and Seb Franklin helps us understand how the posthuman subject has been theorized with respect to the Internet culture whose emergence *Bleeding Edge* details. In *The Posthuman Condition: Consciousness beyond the Brain*, Pepperell explains that breakthroughs in neuroscience have debunked the previous assumption that the brain is the center of

human consciousness. Because the brain's development depends on signals from receptors in other parts of the body, which in turn receive stimuli from the outside environment, not only can human consciousness not be restricted to the brain, but it cannot be limited to the body either. Pepperrell thus advocates an "extensionist" view of human nature," which "in contrast to the humanist view,"

does not therefore make a distinction between the biological substrate of the human frame (what is most often referred to as the 'human') and the wider material domain in which we exist. In other words: where humanists saw themselves as distinct beings in an antagonistic relationship with their surroundings, posthumans regard their own being as embodied in an extended technological world. (152)

This conception of the posthuman as coextensive with the surrounding technological environment is crucial to *Bleeding Edge*, a novel that focuses on the rise of the Internet. Pynchon's characters are posthuman insofar as the Internet has embedded itself in their consciousnesses and altered their subject positions within a late capitalist world.

In *Control: Digitality as Cultural Logic*, Seb Franklin describes the evolution and nature of this computerized late capitalist world by historicizing the rise of cybernetics and the concomitant transition of global capitalism to the era of control. Franklin defines control as "the logical basis of a worldview that imbricates literal practices of computation, the new organizational and infrastructural concepts these practices facilitate, and the metaphors derived from the electronic digital computer and its processes within a system of value production that can produce profit only by exploiting and dispossessing human life" (xviii). Functioning as the dominant episteme of the early 21st century, control reduces people to programmable objects with valorizable inputs and outputs that can be computed and monetized. Anyone whose inputs and outputs produce no profit is exploited and excluded from representation within the system.

Taken together, these theories provide three ways of thinking about the posthuman that are germane to Pynchon's critique of posthumanism in *Bleeding Edge*.

There is the utopian view of theorists like Haraway, Braidotti, and Roden, who see in the debunking of the classical humanist subject an opportunity for generating a more egalitarian conception of human subjectivity; there is Peperrell's extensionist view, which merges the human subject with its physical, cultural, and technological environment; and there is Franklin's account of the control society that digitizes the already divided subject in order to monetize and exploit it. In *Bleeding Edge*, Pynchon agrees with the utopian theorists that the classical humanist subject was always already a myth, but he refutes their optimistic appraisal of the posthuman future by arguing that the integration of human beings with the digital environment of cyberspace opens up the posthuman subject to an increased level of surveillance, manipulation, and exploitation. The Pynchonian posthuman, therefore, is defined, not by the breakdown of the classical humanist subject, but by the mutual extension of human consciousness and cyberspace into one another and the reduction of the human to a programmable object within the late capitalist society of control that computer and Internet technologies facilitate. By tracing the materialist underpinnings of posthuman theory, Pynchon attempts to resist these effects by exposing the hitherto invisible relationships between the posthuman subject and late capitalism's society of control.

Set between the springs of 2001 and 2002, the novel centers on Maxine Tarnow, a de-certified fraud examiner who is separated from her husband Horst Loeffler and is trying to raise her two adolescent sons Ziggy and Otis. Maxine's former acquaintance Reg Despard asks her to look into a computer security firm called hashslingrz run by boy-billionaire Gabriel Ice. Reg was hired to make a documentary about hashslingrz but has been denied access to information about the firm. During her investigation, Maxine discovers that Ice, in cahoots with the U. S. Government, has been diverting funds to what appears to be a jihadist organization in Dubai. Lester Traipse, the head of a dotcom Ice used to funnel the funds, is murdered by Nicholas Windust, a government torturer and assassin because Lester embezzled money from Ice and found out too much about Ice's secret activities. Windust himself is assassinated after Maxine leaks a video showing men with Stinger missiles on the roof of the Deseret—the same building in which Lester was murdered—engaged in a practice run of shooting down

a commercial jet in the days prior to the 9/11 attack on the World Trade Center. The jihadist organization turns out to be an undercover CIA-installed anti-jihadist group, and in the wake of 9/11 and the collapse of the dotcom boom, Ice seeks to solidify the position of his company by buying up fiber, setting up secret server farms in the Arctic north, and acquiring the source code of a website called DeepArcher, which has been set up by Justin McElmo, the husband of Maxine's friend Vyrva, and his partner Lucas as "a virtual sanctuary to escape from the many varieties of real-world discomfort" (74). Ice is interested in DeepArcher because its security design allows users to traverse the Internet "without leaving a trail" (37). Around the time of the World Trade Center attack, the random number generator protecting DeepArcher's source code stops working, and Ice is able to hack in and steal the code. On the whole, then, the novel's plot tells the story of increasing corporate and government domination of the individual by means of the Internet technologies that make us posthuman.

The novel's multivalent title affirms Pynchon's Luddite belief that, under late capitalism, governments and corporations inevitably co-opt the technologies that promise additional freedom and turn them into instruments of domination and surveillance. On the most obvious level, the phrase "bleeding edge" refers to what Lucas, describing DeepArcher, calls "bleeding-edge technology . . . Not proven use, high risk, something only early-adoption addicts feel comfortable with" (78). As mentioned in the synopsis above, DeepArcher, the bleeding edge technology intended as a virtual refuge for the Preterite, is exploited by Ice to allow his security firm, the U. S. Government, and its law-enforcement agencies to mount an undetectable program of surveillance over any information indexed in cyberspace.² Thus, technology intended to liberate is used to oppress.

On a more metaphorical level, a "bleeding edge" is a liminal space that acts as a boundary between an object and the space that surrounds it. The fact that the edge is "bleeding" suggests that the object and its surrounding environment are bleeding

² It is fitting that the NSA's PRISM surveillance program was revealed just three months before *Bleeding Edge* was released.

into each other, blurring the boundary that separates them, just as the advent of the Internet, according to Pepperell, blurs the line between human consciousness and cyberspace. In addition, the “bleeding” suggests the violent penetration of organic matter (what Pynchon dubs meatspace) by a metallic blade—a conceit that is literalized by the spring-propelled knife that stabs through Lester Traipse’s body, ending his life in order to protect corporate and governmental interests, as well as by the blade servers that physically generate the conceptual space of the Internet and run the hashslingrz site. The novel’s title therefore figures the penetration of human consciousness by cyberspace as an act of violence that subjects the posthuman citizen of late capitalism to increased surveillance and domination by the rich and powerful.

Pynchon develops his description of the subjected and de-subjected posthuman—which stands in direct contrast to utopian theories of the liberated posthuman subject—by negotiating the crumbling distinction between meatspace and cyberspace. Pynchon borrows these terms from William Gibson’s *Neuromancer* (1985), which is often credited as the foundational cyberpunk novel, as well as a major work of posthuman theory.³ *Neuromancer* tells the story of Dorsett Case, a super-hacker whose previous employer damaged Case’s nervous system, preventing him from any longer “jacking into” cyberspace after he was caught embezzling money. Case is hired by what turns out to be one half of an artificial intelligence called Wintermute, who promises to restore Case’s abilities. Case is asked to hack into the system of the aristocratic Tessier-Ashpool family, which created Wintermute, and its brother-AI Neuromancer. With the help of the computer construct of his deceased mentor Dixie Flatline’s mind, Case hacks into the system and allows Wintermute to merge with Neuromancer, creating a new being that represents the next stage in cybernetic evolution.

Neuromancer is a key intertext for *Bleeding Edge*, and the different ways in which the two novels deal with the dichotomy between meatspace and cyberspace elucidates Pynchon’s take on the posthuman. Gibson actually coined the term cyberspace

³ Hayles writes that “Gibson’s novels have been so influential not only because they present a vision of the posthuman future that is already upon us . . . but also because they embody within their techniques the assumptions expressed explicitly in the themes of the novels” (39).

in *Neuromancer*, where he defines it as a “consensual hallucination experienced daily by billions of legitimate operators, in every nation, by children being taught mathematical concepts . . . a graphic representation of data abstracted from the banks of every computer in the human system. Unthinkable complexity. Lines of light ranged in the nonspace of the mind, clusters and constellations of data. Like city lights, receding” (51). Gibson’s version of cyberspace differs greatly from our current usage of the term. We usually think of cyberspace as the conceptual space created by the Internet, but Gibson’s cyberspace is a graphical and spatial representation of the world’s data that exists in the mind of every person who is “jacked into” the system. Gibson’s cyberspace is thus closer to Pynchon’s description of the Deep Web, which is where DeepArcher—whose cityscapes resemble Gibson’s description of cyberspace—is located. It is crucial to note that Gibson’s posthumans, like Case, have been physically enhanced with cybernetic parts, and that to access cyberspace, they need to connect themselves to a computer console. They are thus literally cyborgs in a way that Pynchon’s characters are not. This difference reveals the distinct ways in which Gibson and Pynchon represent the edge between cyberspace and meatspace. While *Neuromancer’s* narrative challenges the ontological primacy of meatspace’s “real” world over cyberspace’s virtual reality, it nonetheless keeps the two realms clearly demarcated from each other. *Bleeding Edge*, on the other hand, asserts that cyberspace and meatspace are increasingly indistinguishable, that meatspace *is* cyberspace.

Pynchon’s account of the relationship between meatspace and cyberspace is perhaps more troubling than Gibson’s because it suggests that the two realms coexist in a single posthuman space. One way Pynchon shows the penetration of cyberspace into meatspace is his use of dehumanizing descriptions that metaphorically compare human beings to machines. There are more than twenty such chremamorphic descriptions scattered throughout the novel, and they evince a posthuman perspective that understands human beings in mechanical terms.⁴ For example, early in the

⁴ Pynchon’s chremamorphisms range from the silly—when Maxine sees a chance to fix Eric and Driscoll up with each other, a screen begins “blinking on her Lobodex of Love, or in-brain matchmaking app” (305)—to the more alarming, but their proliferation generates a posthuman milieu in which people are indistinguishable from machines even without the cybernetic implants that Gibson describes.

novel when Maxine hears a rumor that the U. S. government is preparing for a second Gulf War, Pynchon describes this disturbing intelligence as “Toggling Maxine immediately into Anxious Mom mode” (48). Much later, after Maxine and Windust are shot at, a rattled Maxine picks Ziggy and Otis up from school and “parental subroutines kick in” (392). In these descriptions, Maxine’s maternal instinct and the love she feels for her sons—emotions that classical humanists might cite as traits that separate human beings from machines—are compared to computer programs. For Pynchon, then, our human qualities are indistinguishable from our mechanical ones both because the development of computer technology reveals the similarities between humans and machines, altering our understanding of the human, and because our use of computers changes the way we interact with each other. Directly following the last chremamorphic description, Maxine learns that Ziggy and his friend Nigel have Cybikos, devices which allow them to send rudimentary text messages to each other. Nigel comments that such devices are “da wave o’ da fyootch” (393). At the time of the novel’s writing, of course, text messaging was no longer a bleeding edge technology reserved for early adopters like Ziggy and Nigel, but a dominant mode of communication, especially among younger people, that mediates and valorizes our verbal interactions with each other. This is one example of the ways in which Pynchon reveals his characters to have been reduced—like Franklin’s programmable objects—to mere producers of inputs and outputs (text messages) that can be monitored and monetized.

Perhaps the most dramatic chremamorphism in the novel occurs when Maxine has sex with Nicholas Windust: “His hands, murderer’s hands, are gripping her forcefully by the hips, exactly where it matters, exactly where some demonic set of nerve receptors she has been till now only semi-aware of have waited to be found and used like buttons on a game controller” (258). The references to Maxine’s “nerve receptors” and semi-awareness suggest that her sexual pleasure and subconscious sexual desires are mechanical processes dependent on hardware (receptors) and software (the internal programming of her hardwired desires). In addition, the comparison of Maxine’s body to a game controller not only turns her into a machine, but also suggests how vulnerable her status as a posthuman cyborg makes her to the

manipulation of the governmental and corporate interests of which Windust is an agent. Finally, in this sequence, Maxine becomes the programmable object *par excellence* in that she has become the actual instrument—the game controller—through which the posthuman user relays outputs in response to the inputs of onscreen images.

In the final chapter of *Control*, Franklin draws a connection between video games and websites in that they both “demand an instant response, the type of motor response so fascinating to 1940s cyberneticians, which in many cases functions more quickly than the time needed to consciously process and interpret the image” (164). As a result, both video games and the Internet erase all aspects of the user except for the inputs and outputs that the user respectively receives and delivers. In this way, the user becomes a programmable object who unconsciously reacts to onscreen prompts. As Franklin puts it, “Each significant change in the image is directed not only at the construction of a specific mode of perception, but also at the motivation of some form of input—a mouse click, a keystroke, or a button press” (164). Moreover, the outputs that the user delivers in response to onscreen inputs are value-producing. In the case of video games, the longer the user sits in front of the screen engaged in the back-and-forth of receiving inputs and relaying outputs, the more likely the user is to spend money by purchasing a new game, paying for add-on content, or—in the case of some online games—extending a subscription. The player’s leisure time is thus monetized under a control regime. Websites, meanwhile, convert user inputs and outputs into capital, not only by charging for online content or selling products in online shops, but also by facilitating the collection of demographic data that can be used to customize advertisements, products, and content.

Maxine’s interpolation into a control society, rendered by her metaphorical identification as a game controller, displays both the way in which Maxine’s de-subjectification opens her up to the manipulation of Windust (who represents the merging interests of law enforcement, government, and corporations) and the way in which Maxine becomes a vehicle for the perpetuation of control. The game controller is at once a manipulable object, and, as described above, a medium through which users become programmable objects. Similarly, Maxine is an object handled by Windust as

well as an inadvertent agent of control. In her capacity as an investigator, Maxine is a kind of human computer that takes in data and processes it. She is only able to do this work in the first place because she is hired by Rocky Slagiatt, a venture capitalist with a stake in her case, and the only practical result of her investigation is that Windust is killed because Maxine releases the Stinger missile video that Windust was supposed to keep under wraps. In the process, Windust turns out to be another replaceable part in the control phase of late capitalism; he begins as a valuable agent and assassin, but becomes a sort of computer virus that must be eliminated in order to maintain the stability of the system. Taken together, the novel's chremamorphic sequences reveal that we are all already cyborgs, that meatspace is cyberspace, and that our posthuman ontology leaves us increasingly susceptible to and complicit in the domination of the corporations, governments, and law enforcement agencies of late capitalism.

Pynchon further illustrates the encroachment of cyberspace into the territory of meatspace by describing his characters' ontological confusion about the difference between real life and virtual reality. At the end of the novel, Maxine spends a lot of time logged into DeepArcher after the site has gone open source. The site's many new users have generated an abundance of content, including a virtual cityscape of old New York created by Ziggy and Otis and dubbed Zigotisopolis. Upon returning to meatspace, Maxine notices that

Increasingly she's finding it harder to tell the real NYC from translations like Zigotisopolis . . . as if she keeps getting caught in a vortex taking her each time farther into the virtual world. Certainly unforeseen in the original business plan, there arises now a possibility that DeepArcher is about to overflow out into the perilous gulf between screen and face. (429)

Maxine's inability to distinguish physical reality from its virtual counterpart deconstructs the dichotomy between meatspace and cyberspace that was upheld in *Neuromancer*, but like Gibson's novel, *Bleeding Edge* subverts the ontological primacy of meatspace over cyberspace. At first, this development may seem benign, since DeepArcher is designed as a "refuge" or "sanctuary" from the anxieties of the day.

Therefore, its spilling out into meatspace does not appear to be a bad thing. However, Eric Outfield, the hacker who has been helping Maxine and Reg investigate hashslingrz, reveals the more sinister aspects of cyberspace's inundation of meatspace. Maxine consults Eric about the "virtuality creep" that she has been experiencing, and he responds that he has been having

"this strange feeling about the Internet, that it's over, not the tech bubble, or 11 September, just something fatal in its own history. There all along . . . every day more lusers than users, keyboards and screens turning into nothing more than portals to Web sites for what the Management wants everybody addicted to, shopping, gaming, jerking off, streaming endless garbage . . . Meantime hashslingrz and them are all screaming louder and louder about 'Internet freedom,' while they go handing more and more of it over to the bad guys." (432)

Eric complains that now that there are more "lusers"—Internet slang for laymen or non-hackers, with an obvious pun on "losers"—logged onto the Internet, the old optimistic vision of the Internet as a paradise for hackers allowing a free exchange of information that would bring an end to government and corporate secrets has been transformed into yet another means of control. The addictive activities in which Internet users engage effectually contain their subversive impulses, funnel them into capitalistic enterprises, and allow the "bad guys"—who for Pynchon are always large corporations, governments, and their law enforcement agencies—to gain a further stranglehold over ordinary citizens. Therefore, for Pynchon, what makes us posthuman is not that we think we are posthuman, as Hayles claims, but that technology alters our thinking and makes us programmable objects susceptible to increased surveillance and control. In this way, Pynchon's approach to the posthuman in *Bleeding Edge* diverges from that of the utopian posthuman theorists I discussed earlier; while those theorists are interested in figuring out how posthumans should think about themselves, Pynchon is interested in what happens to people once they become posthuman. And what happens, according to the novel, is that people are reduced to the inputs they receive from their computer monitors and the outputs they send back.

As the final connection between *Bleeding Edge* and *Neuromancer* shows, in Pynchon's view, the integration of cyberspace and meatspace subsumes people under a hive mentality that allows them to be constantly monitored and controlled. At the end of *Neuromancer*, Case surmises that "Wintermute was hive mind, decision maker, effecting change in the world outside. Neuromancer was personality. Neuromancer was immortality" (269). Case's negative appraisal of Wintermute and positive appraisal of Neuromancer contribute to the ambivalence of the novel's ending in the context of posthumanism. On the one hand, Case's rejection of Neuromancer's beach in favor of allowing Wintermute to subsume Neuromancer has put the hive mind in charge; on the other hand, the union of Wintermute and Neuromancer may potentially counterbalance Wintermute's cold calculation with human emotion and introduce the possibility of human immortality.

Bleeding Edge suggests that in the 21st century, Wintermute has won out because the novel's most important events take place in the Deseret, a building that Ice owns and Maxine thinks of as "itself the undead thing, the stone zombie, rising only when night fell, stalking unseen through the city to work out its secret compulsions" (28). The word "deseret" means honeybee and appears in the Book of Mormon. For Mormons, the word and the associated image of the beehive symbolize industry. "Deseret" was also the name of the unofficial Mormon state that existed in the 19th century.⁵ When Maxine and Conkling Spreewell investigate the scene of Lester Traipse's murder on the 13th floor of the Deseret, they discover a room shaped like the inside of a honeycomb or beehive:

The only light comes shimmering from watertight observation windows in the pool, each enclosed in its private viewing booth, much like a peep show at an arcade, where according to an early real-estate brochure "admirers of the natatory arts may obtain, without themselves having to undergo immersion, educational views of the human form unrestricted by the demands of gravity." (205)

⁵ See Ludlow, 99, 371–73.

Both the cells from which voyeurs can peep at swimmers and the “huge segmented dome of some translucent early plastic, each piece [of which is] concave and teardrop-shaped, separated by bronze-colored comes” (204) that hovers over the Deseret pool contribute to the building’s beehive-like appearance. Whereas the beehive symbolized assiduous cooperative labor for Brigham Young, for Pynchon it clearly symbolizes the addiction to television and computer screens, voyeurism, and surveillance.⁶ The 13th floor is designed so that the Deseret’s prurient patrician denizens can ogle swimmers’ finer parts while remaining unseen, placing them in the same position as viewers of reality television and Internet pornography. In addition, Lester Traipse’s body is found in one of the observation booths “propped up as if gazing into the pool, where earlier a swimmer had noticed him and after a couple more laps, getting the picture, freaked out” (205-206). The attitude of Lester’s corpse makes a travesty of the idea of the undetectable viewer as Lester himself becomes an object of observation, and, when he deviates from the hive mentality and its inherent hierarchy by stealing from the company honey pot, gets the stinger—a spring-propelled knife in the head. It is clear that for Pynchon, what results from the Internet’s conversion of humans into posthumans is an increased voyeurism that creates a false sense of security and leads to increasing surveillance, control, and personal danger.

Eric Outfield’s jeremiad about the deterioration of the Internet and the Deseret’s representation of the hive mentality produced by the Internet’s conversion of humans into posthuman programmable objects contributes to Pynchon’s larger argument that corporate and governmental powers effectively neutralize any resistance to the increased control and surveillance that the development of Internet technologies allows them to maintain. This leaves posthuman citizens to seek provisional refuges, where they might temporarily exempt themselves and their families from the apparatuses of control.

⁶ It is notable that Pynchon associates Mormons with U. S. government agents. Maxine’s father Ernie states that high government officials and law enforcement officers involved in possible cover-ups and conspiracy theories are “WASPs, Mormons, Skull and Bones, secretive by nature” (325).

Apart from DeepArcher, the major figure of resistance in the novel is March Kelleher, a middle-aged leftist activist who is Maxine's friend and the mother of Gabriel Ice's wife Tallis. Speaking at Maxine's son's eighth grade graduation, March tells a parable of a "city with a powerful ruler who liked to creep around town in disguise" (112). Whenever anyone recognizes him, he buys them off with money or a job, but one day he runs into an old bag lady, a "guardian of whatever the city threw away," who refuses to be bought off because, as she puts it, "Remembering is the essence of what I am" (113). The old woman remains elusive, and her criticisms of the ruler "had already entered the collective consciousness of the city and become impossible to delete" (114). On the surface, the parable seems to be about the resistance that is inherent in any hegemonic scheme. As a member of Pynchon's Preterite and Marx's surplus, the old woman represents the abjected element that allows society to function, and her memories of the city's unofficial history enter the public discourse as an uncontainable form of subversion. March compares the story to the allegorical fables that people told in Stalinist Russia to voice their criticisms of the government, so, like the bag lady in her story, March seems to be an effective subversive figure dispersing alternate histories to the body politic.⁷ For example, she runs a Weblog called *tablidofthedamned.com*, which posts conspiracy theories and exposés of *hashslingrz*. However, March herself admits the difficulties of remaining effectually subversive under late capitalism. After telling her parable, she remarks that in the 21st century, the allegorical meaning of her story remains ambiguous:

"Who is this old lady? What does she think she's been finding out all these years? Who is this 'ruler' she is refusing to be bought off by? And what's this 'work' he was 'doing in secret'? Suppose the 'ruler' isn't a person at all but a soulless force so powerful that though it cannot ennoble, it does entitle, which, in the city-nation we speak of, is always more than enough?" (114)

⁷ March is explicitly compared to the bag lady from her story when she, her drug-dealing ex-husband, and Maxine go on a drug run and find themselves in a floating garbage dump: "March lapsing for a moment into the bag-lady character in her commencement speech at Kugelblitz, the one person dedicated to salvaging everything the city wants to deny" (168–69).

The “soulless force” March refers to is clearly multinational capitalism, which creates economic winners who feel “entitled” to the disproportionate amount of money and power that they amass at the expense of the rest of society. The difficulty of mounting a revolt against capitalism is that the ‘ruler’ is not a single identifiable person or group; instead, it is a reified set of relations dependent on market forces, legacies, and happenstance. In addition, the schemes that keep ‘rulers’ in power are covert and undetectable, thanks in part to security firms like hashslingrz.

Later in the novel, Pynchon demonstrates the failure of March’s attempts to subvert hashslingrz and the U.S. government when she posts the video of the men on the roof with Stinger missiles, which Maxine has leaked to her, on her Weblog. The result is that the “Internet has erupted into a Mardi Gras for paranoids and trolls, a pandemonium of commentary there may not be time in the projected age of the universe to read all the way through” (388–89). The secret footage generates so many conspiracy theories on the Internet that the subversive potential of these theories is effectively contained. The sheer number of theories makes it impossible to take any single theory seriously or to find a theory that may in fact be true. In this way, the very structure of the Internet, which has turned us into posthumans by acting as an extension of our consciousnesses, renders subversive attempts like March’s completely harmless.⁸ The only practical consequence of March’s posting is that it gets Windust killed. Windust thus becomes another object to be thrown away (his corpse is left to be eaten by a pack of wild dogs) so that late capitalism’s regime of control can be maintained.

If March represents the difficulty of subverting late capitalist hegemony, DeepArcher represents the way in which late capitalism has neutralized the Internet’s potential to increase freedom and converted it to another instrument of control and surveillance. As has been mentioned, DeepArcher is initially conceived as a sanctuary for hackers, and its security software allows users to do whatever they want without

⁸ In his article “The Great Flattening,” Mitchum Huehls argues that the paranoid conspiracy theories of *Bleeding Edge* are partly contained by the Internet’s flattening of the vertical structures of both conspiracy and social hierarchies of power. As he puts it, “*Bleeding Edge* is a novel in which technological innovation crests, crashes, and leaves a different world in its wake. Everything changes not so much because of 9/11 but because of the Internet: even as conspiracies of capital continue to thrive, the Internet has laid them bare for all to see. In turn, paranoia in *Bleeding Edge* is on the wane” (866).

the possibility of being detected. When hashslingrz steals DeepArcher's source code, it opens the floodgates and allows anyone to access the site. This may seem like a democratizing turn of events, since a site that was only available to a few knowledgeable hackers is now open to the general public, but it defeats the purpose of the online refuge and violates the spirit in which it was conceived. Justin and Lucas' other product is a video game that Maxine's kids play with Vyrva's daughter Fiona. The game is a "first-person shooter, with a generous range of weaponry in a cityscape that looks a lot like New York" in which the object is to shoot down obnoxious yuppies (33). Most first-person shooters—like the games in the Call of Duty series, which is currently the best-selling video game franchise worldwide—place the player in the role of a soldier in a realistic military or science-fiction setting. By glorifying combat, these games promote jingoism and the military industrial complex. Justin and Lucas' game, in contrast, literally targets over-privileged yuppies, satirically attacking gentrification and the conspicuous consumption endemic to consumer capitalism.

When DeepArcher goes open source, Justin and Lucas' values as reflected in their first-person shooter have been completely subverted. Maxine visits DeepArcher only to find that

What was once a train depot is now a Jetsons-era spaceport with all wacky angles, jagged towers in the distance, lenticular enclosures up on stilts, saucer traffic coming and going up in the neon sky. Yuppified duty-free shops, some for offshore brands she doesn't recognize even the font they're written in. Advertising everywhere. On walls, on the clothing and skins of crowd extras, as pop-ups out of the Invisible and into your face. (354)

DeepArcher has been commercialized, gentrified, yuppified, and opened up to global consumer capitalism. Instead of a refuge from late capitalism, it has become just another instrument of it, and because its security system is no longer secure, all traffic on it is potentially being monitored by security firms like hashslingrz that are arms of the U. S. government.

The conversation between Maxine and her father Ernie near the end of the novel shows that, like DeepArcher, the Internet as a whole is an instrument, not of

liberation, but of control. The episode begins as Maxine and Ernie recall the cop shows that Ernie would not allow Maxine and her sister Brooke to watch when they were kids. When Maxine ingenuously asserts that “Maybe TV back then was brain-washing, but it could never happen today. Nobody’s in control of the Internet,” Ernie replies that the Internet, originally called DARPAnet, was designed by Defense Department think tanks during the Cold War “to assure survival of U. S. command and control after a nuclear exchange with the Soviets” (419). Ernie concludes:

“Yep, and your Internet was their invention, this magical convenience that creeps now like a smell through the smallest details of our lives, the shopping, the housework, the homework, the taxes, absorbing our energy, eating up our precious time. And there’s no innocence. Anywhere. Never was. It was conceived in sin, the worst possible. As it kept growing, it never stopped carrying in its heart a bitter-cold death wish for the planet, and don’t think anything has changed, kid . . . Call it freedom, it’s based on control. Everybody connected together, impossible anyone should get lost, ever again. Take the next step, connect it to these cell phones, you’ve got a total Web of surveillance, inescapable. You remember the comics in the *Daily News*? Dick Tracy’s wrist radio? it’ll be everywhere, the rubes’ll all be begging to wear one, handcuffs of the future. Terrific. What they dream about at the Pentagon, worldwide martial law.” (420)

Although Ernie is prone to postulating paranoid conspiracy theories, it seems that Pynchon wants us to take his words at face value because Ernie’s predictions had proven to be prophetic by the time the novel was published. At the time of this writing, cellular phones are connected to the Internet, smartwatches are on the market, and the NSA is making sure that no one will ever “get lost.” Ernie’s comparison of the Internet to a smell is particularly poignant because an odor originates outside the body, penetrates it, and becomes a part of it just as in Peperrell’s extensionist view the Internet penetrates the human mind and embeds itself in it, becoming a prosthetic extension that converts human beings into posthuman cyborgs. Finally, Ernie’s revelation that the Internet was developed by the U. S. government to keep

the power structure intact in the case of a nuclear war is reminiscent of the plot devised by the eponymous posthuman cyborg Dr. Strangelove in Stanley Kubrick's Cold War satire. In the face of an imminent worldwide nuclear holocaust, Dr. Strangelove argues that American political leaders should secure enough mineshaft space to take refuge in, along with enough citizens to eventually repopulate the world. The absurdity of DARPA's and Dr. Strangelove's plans, which are only necessary in a world where nuclear war has already wiped out millions, if not billions, of people, reveals the unconscious death-wish that fuels technological development, best exemplified by the famous ending of *Dr. Strangelove* in which Major "King" Kong, played by Western star Slim Pickens, waves his oversized cowboy hat and yahoos as he rides the nuclear bomb that will bring about the end of the world. Thus, Ernie's history lesson demonstrates that in the current technological phase of late capitalism, the Internet is not a refuge, but a further instrument of control that makes escape from the system virtually impossible.⁹

Moreover, Ernie suggests that there is a problem with the optimistic thinking of posthuman theorists like David Roden, who proclaims that

humans will determine whether a disconnection event occurs or not. After all, if a final outcome of a process depends on humans doing a, b and c in that order, it will not occur if someone fails to do c. So even if disconnections are hard to predict, they are not hard to control. If humans do not want to make posthumans, posthumans will not be made. Until disconnection, humans will be in charge and responsible for the effects (good or bad) that ensue from their technical activity." (150)

As Ernie points out, while it is true that human beings are the ones who technically get to decide whether or not to produce posthumans, not all human beings are allowed to take part in the decision. In fact, that decision has already been made by

⁹ As Jonathan Lethem puts it, "In Pynchon's view, modernity's systems of liberation and enlightenment—railway and post, the Internet, etc.—perpetually collapse into capitalism's Black Iron Prison of enclosure, monopoly and surveillance. The rolling frontier (or bleeding edge) of this collapse is where we persistently and helplessly live" (BR1).

the politicians and military officers who developed DARPAnet and the contractors like hashslingrz that the U. S. government hired to “secure” the Internet. In Roden’s terms, a disconnection irrevocably transforming the classical humanist subject has already taken place, whether we like it or not, all for the sake of maintaining and extending the power that the few hold over the many.

So where does this leave Maxine, for whom “The only question it’s come down to is, where will Ziggy and Otis be protected from harm?” (412)? Ernie responds that Maxine should simply “trust them, trust yourself, and the same for Horst, who seems to be back in the picture now” (422). Here Ernie proposes the family unit itself as the best refuge from the posthuman condition under late capitalism. The idea of family as a saving grace from the rationalization, regimentation, surveillance, control, and dehumanization that result from the development of technological global capitalism has been a recurring theme in each of Pynchon’s novels since and including *Vineland*.¹⁰ At the end of *Bleeding Edge*, several broken families reunite: Maxine and Horst patch up their marriage, March gets back together with her estranged daughter Tallis, and Reg Despard moves to Seattle to be near his ex-wife and daughters. But as the end of the novel demonstrates, the family structure offers only a provisional and dubious refuge from the posthuman condition because the family is always potentially under attack.¹¹

The novel begins with Maxine walking her sons to school, and it ends with her taking Ernie’s advice and allowing them to walk to school without her. Before she lets Ziggy and Otis walk out into New York City she comes home to find that

¹⁰ The relationships among Zoyd Wheeler, his daughter Prairie, and her estranged mother Frenesi Gates form the emotional core of *Vineland*. The frame narrative of *Mason & Dixon* involves the Reverend Wicks Cherrycoke telling the novel’s main story to his nephews and nieces. *Against the Day* focuses on the revenge plots of the Traverse family as well as the quasi-paternal relationship between Merle and Dally Rideout. At the end of the novel, the Traverse sons, the Chums of Chance, and even the Chums’ dog Pugnax have started families. Finally, Doc Sportello’s main accomplishment at the end of *Inherent Vice* is to reunite Coy Harlingen with his wife Hope and daughter Amethyst.

¹¹ In his review of *Bleeding Edge* for *Harper’s*, Joshua Cohen argues that, in the novel, “the last redoubt has become the family, and the last war to be waged is between our virtual identities and the bonds of blood; a war to keep the Virtual from corrupting the Blood, if not forever, then for time enough to let the lil’ Ziggy and Otis Tarnow-Loefflers of this world live with the merest pretense of freedom (childhood)” (105).

The boys have been waiting for her, and of course that's when she flashes back to not so long ago down in DeepArcher, down in their virtual hometown of Zigotisopolis, both of them standing just like this, folded in just this precarious light, ready to step out into their peaceable city, still safe from the spiders and bots that one day too soon will be coming for it, to claim-jump it in the name of the indexed world. (476)

The overlay of cyberspace and meatspace in this passage shows that Maxine's children are already posthuman, and that the increased surveillance and control concomitant with the posthuman condition have been added to the usual threats to children's safety that New York City offers. The name Zigotisopolis itself displays the breakdown of the classical humanist conception of identity as Ziggy and Otis merge with each other and the digitized urban environment they inhabit. Meanwhile, the spiders and bots that Maxine refers to are computer programs that read websites and index information, so Maxine acknowledges that her two boys—text-messaging, videogame-playing surfers of the Deep Web whose life in cyberspace is already spilling out into the “real” world—will be reduced to catalogued data. Of course, the image of Ziggy and Otis standing next to each other in their Deep-Archer cityscape resembles, fraternal (if not twin) towers, which returns us to the riddle with which this discussion began: What do 9/11 and the Internet have in common?

For the anti-establishment denizens of *Bleeding Edge*, the tragedy of September 11, like the Internet, offered an opportunity to improve American life, which was instead used as an excuse to eliminate freedom. As Eric Outfield puts it, “You’d think when the towers came down it would’ve been a reset button for the city, the real-estate business, Wall Street, a chance for it all to start over clean. Instead lookit them, worse than before” (387). Rather than a more egalitarian economy, we got the Patriot Act, the wars in Iraq and Afghanistan, Google, Facebook, and PRISM. Pynchon firmly establishes the connection between the attack on the World Trade Center and the Internet when Maxine accompanies Windust’s first wife Xiomara to visit “Ground Zero”—a term that the narrator points out, like the Internet, has its provenance in

Cold War “scenarios of nuclear war” (328). Gazing at the ruins of the World Trade Center, Maxine laments that “it was pure geometry. Points for that. And then they blew it to pixels.” (446). Maxine describes the destruction of the Twin Towers as a conversion from the physical materials of meatspace to the pixels on television and computer screens in cyberspace. This conversion, in turn, contributes to the transformation of Americans into posthuman cyborgs, as evinced by the narrator’s description of New Yorkers in the days following September 11 as a “viewing population brought back to its default state, dumbstruck, undefended, scared shitless” (321). In this chremamorphic description, New Yorkers are returned, like computers, to their “default state” on account of the pixels they have absorbed by watching media coverage of the attack on the World Trade Center. This is a state of fear that renders them easily programmable objects within a system of control.

Although the control society of late capitalism seems more inescapable at the end of the novel than it did at the outset, Pynchon does offer one final possibility for resistance by increasing Maxine’s—and by extension—the reader’s awareness of the status and position of the posthuman subject within the material and ideological frameworks of late capitalism. At the end of *Control*, Franklin argues that it “is necessary is to make materialist attentiveness . . . into a weapon that can be used against the idealized, fuzzy metaphors and the specific, concrete forms of exploitation and dispossession that together constitute capitalism in the age of control” (168), and this is precisely what Pynchon has done in the course of *Bleeding Edge*.

Among the many references to video games throughout the novel, Pynchon makes two allusions to Hideo Kojima’s *Metal Gear Solid*.¹² Considered by many

¹² Pynchon’s allusions to real video games throughout the novel merit some investigation, especially his allusions to *Metal Gear Solid*, which serves as a fascinating intertext to the novel. The game is first mentioned by Lucas, who cites it as one of the inspirations for *DeepArcher*, and refers to the game’s creator Hideo Kojima as “God” (69). *Metal Gear Solid* first appeared on the Playstation console in 1998, and it is often cited as one of the most influential videogames ever made for its cinematic storytelling. The player takes on the role of Solid Snake, a covert ops specialist who is sent on a mission to liberate a nuclear weapons facility in Alaska that has been taken over by a terrorist group. In the process, Snake is supposed to rescue two hostages, including the DARPA chief, which Ernie notes (420). The leader of the terrorists turns out to be Solid Snake’s twin brother Liquid Snake. At the end of the game, Solid Snake discovers that he and Liquid Snake have been cloned from Big Boss, the renegade

gamers to be the best video game ever made, *Metal Gear Solid* includes a famous boss fight against a character named Psycho Mantis who is able to read the player's mind. No matter what button the player pushes on the controller, Psycho Mantis is able to predict and counter the attack. In addition, Psycho Mantis asks the player to put down the controller and makes it rumble, and he also reads back information gathered from the system's memory card about other games the player has played. The only way to defeat Psycho Mantis is to disconnect the controller and re-connect it in the "Player 2" slot, at which point Psycho Mantis can no longer read the player's mind. By breaking the fourth wall, *Metal Gear Solid* makes players aware of the extent to which they are programmable and readable objects, and thus makes visible the hitherto invisible way in which the game has been controlling them.

Pynchon's novel works in the same way. By constantly signaling the technological changes that were to occur between its 2001 setting and its 2013 publication date—through references to text messaging, smartphones, smartwatches and YouTube—*Bleeding Edge* blurs the boundary between fiction and reality in order to make readers more conscious of their position within a technological global capitalist system. Readers follow Maxine as she traces the interconnections among the government, capital, law enforcement, and the posthuman citizens who populate the novel's amalgam of meatspace and cyberspace, and in the process, they are enlightened along with Maxine.

If, by the end of the novel, Maxine has failed to disrupt the machinations of Gabriel Ice and the U. S. government, then she has at least gained an awareness of

super-soldier turned villain whom Solid Snake defeated in a previous game. In essence, Solid Snake learns that he is already posthuman. *Metal Gear Solid* has spawned numerous sequels and spin-offs, which continue to evolve a dizzyingly intricate plot that is surprisingly Pynchonian in its themes and narrative convolutions. Its story, which takes place between 1964 and 2014, features conspiracy theories about a group called the Patriots that secretly controls the world, cyborg ninjas, nano-machines, prosthetic limbs, supernatural creatures, genetic experiments, Cold War espionage, mind control, B-movie references, bathroom humor, and ruminations on the military industrial complex. In other words, it is not unlike a Pynchon novel. Overall, Pynchon's attitude toward video games in *Bleeding Edge* seems ambivalent. On the one hand, games like *Metal Gear Solid* and the creations of Justin and Lucas have a subversive quality with which Pynchon clearly sympathizes. On the other hand, video games are just another "mindless pleasure" that contains subversion by distracting the populace and rendering it docile.

the status of the posthuman subject and its location within a society of control. In the novel's opening, Maxine, imagining herself and her children as classical humanist subjects, accompanies her sons to school through the already automated New York City streets, frightened of all the physical dangers the world poses to Ziggy and Otis. At the end of the novel, Maxine lets her boys walk to school alone, but more importantly, the nature of her protective fears has changed. As Ziggy and Otis stand like conjoined towers both in "their virtual hometown of Zigotisopolis" and in their living room on the novel's final pages, Maxine recognizes that they are not susceptible only to the attacks of muggers, child molesters, violent criminals, stray bullets, and errant traffic. Now she must also worry that her sons—like the Twin Towers they resemble—may be blown "to pixels."

Competing Interests

The author declares that they have no competing interests.

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