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Michał Różycki
University of Warsaw
m.rozycki@uw.edu.pl

The Consciousness of the Posthuman in Peter Watts' *Blindsight*

When, in 1997, the Russian chess master Gary Kasparov was defeated by the IBM-created computer Deep Blue, many took it as yet another sign that machines, and most specifically so-called Artificial Intelligence (AI), will soon supersede humanity. Such neo-luddite sentiments could have easily been voiced again twenty years later, when AlphaGo, a program developed to play Go, a game supposedly far more complex than chess, secretly defeated over fifty of the best go players in the world. One of them, the Chinese player Ke Jie commented on his loss by claiming that "[h]umans have evolved in games in thousands of years – but computers now tell us humans are all wrong. I think no one is even close to know the basics of Go."[1]

Such, rather dreary, predictions, seem to imply that even if AIs are not superior, they are on equal footing with humans, particularly when it comes to systems with finite variables. That which, supposedly, makes us human, consciousness and creativity, seems superfluous in the contexts in which operations on data are crucial, contexts which start to become more frequent in the current economic landscape.

A text which explores such notions, within the genre of science fiction, is Peter Watts' *Blindsight* (2006), later republished combined with its sequel, *Echopraxia* (2014) as *Firefall* (2014). Such explorations are, of course,

[1] Zheping Huang, "Google's AlphaGo AI secretively won more than 50 straight games against the world's top Go players," *Quartz*, last modified January 4, 2017, accessed January 16, 2017, https://qz.com/877721/the-ai-master-bested-the-worlds-top-go-players-and-then-revealed-itself-as-googles-alphago-in-disguise/.

a longstanding component of the genre. Since the advent of neuroscience in the second half of the 20th century, manipulations of the brain became one of the staples of science fiction. From memory alteration of Philip K. Dick's "We Can Remember It for You Wholesale,"[2] to minds-as-storage banks of "Johnny Mnemonic" by William Gibson,[3] authors of the genre seem to ponder the possibilities and consequences brought about by manipulating the human nervous system.

Following this theme, the purpose of the paper will be to analyse what seems to be one of the main themes of *Blindsight* – the treatment of the human brain and consciousness as a resource to be used, not something to be celebrated. To explore this point, the paper will briefly characterize the themes of mind alteration present in science fiction, whose main point seems to be that the human brain is not unlike a machine, and thus, can be treated as one. What will follow, will be a critique of such posthuman, or transhuman, notions, exemplified through the article "Empty Brain" by Robert Epstein, originally published on the website *Aeon.co*.[4] In it, Epstein argues that the likening of the workings of the human brain to those of a computer is merely a metaphor that has little to do with the real inner workings of the brain. In the final part, the paper will focus on an analysis of *Blindsight*, particularly those aspects of the novel which deal with human brain and alterations of consciousness.

It will claim that, through the description of the bleeding edge[5] in posthuman technologies, Watts' novel provides a critique of a profit-driven, capitalistic approach, in which human cognition is just another resource to be enhanced to maximize its efficiency, with all the unnecessary parts to be remade or removed; thus, the brain becomes reduced to a mere computational engine. This final point seems to be emphasized by Watts' characterization of the extraterrestrials – star-faring, resilient and super intelligent, but lacking any sort of individuality or consciousness. Having, or being, a "self" is, it would seem, more of a flaw than a positive trait.

Ultimately, in Watts' novel, consciousness is presented as a hindrance, a useless evolutionary artefact that limits our processing abilities. The self is not the commodity, what is commodified are brainpower and processing

[2] Philip K. Dick, "We Can Remember It for you Wholesale," in: *We Can Remember It for you Wholesale and Other Classic Stories* (New York: Citadel, 2017).

[3] William Gibson, "Johnny Mnemonic," in: *Burning Chrome* (New York: Harper Voyager, 2003), MOBI File.

[4] Robert Epstein, "The empty brain," *Aeon*, last modified May 18, 2016, accessed January 16, 2017, https://aeon.co/essays/your-brain-does-not-process-information-and-it-is-not-a-computer.

[5] The concept of the "bleeding edge," as per the Merriam-Webster definition, implies "the newest and most advanced part or position especially in technology," but also the experimental and untested nature of the technology. *Merriam-Webster Online Dictionary*, s.v. "bleeding edge."

abilities. The mind is limited by the self; thus, the requirement of becoming a productive and effective posthuman being is to lose the self.

The Posthuman Subject

Alteration of the human body, including the nervous system, has long been a staple of science fiction, and especially of cyberpunk. The genre-defining works of the aforementioned William Gibson are populated by characters who, to remain competitive on the job market, alter their bodies. This includes the eponymous protagonist of "Johnny Mnemonic," who, at one point in the movie adaptation of the short story, claims: "I can carry nearly eighty gigs of data in my head. [...] I had to dump chunk of long term memory: my childhood."[6] The protagonists of Gibson's *Neuromancer* suffer the same fate, willingly or otherwise, with the starkest example being the famous computer hacker "Dixie Flatline" whose skills and consciousness were preserved digitally, only to be awoken when they are needed.[7]

One of the main implications of such themes is the fact that human bodies, and indeed brains, are compatible with machines, including computers. This premise is the bedrock of the notion of posthumanism, as presented by N. Kathrine Hayles:

> [T]he posthuman view configures human being so that it can be seamlessly articulated with intelligent machines. In the posthuman, there are no essential differences or absolute demarcations between bodily existence and computer simulation, cybernetic mechanism and biological organism, robot teleology and human goals.[8]

However, as strongly present as the concept of mind-machine interfaces is in popular culture, it has been criticized. One such critique, presented in Robert Epstein's article "The empty brain," considers the view that the human brain works like a machine as nothing more than a metaphor, one that has little grounding. As Epstein claims: "Our shoddy thinking about the brain has deep historical roots, but the invention of computers in the 1940s got us especially confused."[9] In this case, he follows *In Our Own Image* (2015), a work by George Zarkadakis, which, as Epstein recounts, "describes six different metaphors people have employed over the past 2,000

[6] Robert Longo, dir., *Johnny Mnemonic* (TriStar Pictures, 1995).

[7] William Gibson, *Neuromancer* (New York: Ace Books, 1984).

[8] N. Katherine Hayles, *How We Became Posthuman: Virtual Bodies in Cybernetics, Literature, and Informatics* (Chicago & London: University of Chicago Press, 1999), p. 3.

[9] Epstein, "The empty brain."

years to try to explain human intelligence," all of which, per Zarkadakis, were based on the dominant technology of the time. Thus, early cultures that metaphorised the mind through clay infused with spirit (with spirit accounting for intelligence); through the rise of automata in the early enlightenment (with Descartes famously claiming that humans are complex machines); to the contemporary computer metaphor propagated by scientists and futurists (including John von Neumann and Ray Kurtzweil, which present humans as information processors). For Epstein, the invention of the computer provided a seemingly attractive, yet ultimately false, way of talking about the brain:

> The faulty logic of the [information processing] metaphor is easy enough to state. It is based on a faulty syllogism – one with two reasonable premises and a faulty conclusion. Reasonable premise #1: all computers are capable of behaving intelligently. Reasonable premise #2: all computers are information processors. Faulty conclusion: all entities that are capable of behaving intelligently are information processors.[10]

Another crucial factor of the Information Processing (IP) metaphor considers memory as data retrieval. As Epstein claims, "computers, quite literally, process information – numbers, letters, words, formulas, images." To do so, they consist of drives with stored data that allow them to operate. Everything that a computer does is based upon these stored, malleable data that literally tell the computer what to do, which includes the retrieval of information stored physically on its hard drive. Humans however, as Epstein argues, are born with "senses, reflexes and learning mechanisms"; what we both lack and do not ever develop, he continues, is the capacity to store memories physically somewhere inside our brain cells.

The views presented in "Empty Brain" do not necessarily run counter to the notions of posthumanity as presented by Hayles, above. She, among other critics, posits that our reliance on technology for everyday activities is enough to consider contemporary humanity cyberorganisms. Epstein's article does directly shatter the cyberpunk dream of digital habitats: "[W]e will never have to worry about a human mind going amok in cyberspace; alas, we will also never achieve immortality through downloading." The reason for that lies in the fact that memory is not stored within brain cells, and that, as Epstein claims, human memory is a context-dependent process:

> even if we had the ability to take a snapshot of all of the brain's 86 billion neurons and then to simulate the state of those neurons in a computer, that

[10] Ibid.

vast pattern would mean nothing outside the body of the brain that produced it.[11]

The crew of the *Theseus*

It is only fitting, therefore, that the opening event of *Blindsight* is the sudden appearance of a staggering number of small, extraterrestrial ships in Earth's orbit, which proceed to take a snapshot of the planet. The novel, starting out in 2082, describes humanity's first contact with extraterrestrial technology, and the subsequent mission to the Oort Cloud to investigate an alien signal. The story follows members of the expedition and their encounter with visitors from another star system. The focus is, however, on the posthuman explorers themselves, and the fact that their minds have become modified to a specific purpose, and their selves seem an unnecessary baggage.

The notion of a precarious self, along with a strong doubt about the primacy of consciousness in our lives appears, as Peter Watts himself admits in "Notes and References" concluding the book, one of the novels' main themes. Watts cites claims that "the book is strongly inspired by Thomas Metzinger's *Being No One,*"[12] a neuroscientific work whose author, in his own words, sets to "try to convince [us] that there is no such thing as self,"[13] and that humanity is unable to study the philosophical concept of consciousness without acknowledging "that to the best of our knowledge there is no thing, no indivisible entity, that is *us*, neither in the brain nor in some metaphysical realm beyond this world."[14] This belief, which can be summarized by the claim that consciousness, the self, and memory, are a process rather than a collection of stored data, is what connects the claims of Metzinger and Epstein, and which creates the background for the interpretation of *Blindsight* as a work that critiques the information processing metaphor in the context of brain's processing power as a commodity.

In Watts' novel, the second half of the twenty-first century has fully embraced the practice of human body modification, which includes the use of neural technology as well as advanced virtual realities. In search for greater technological and scientific achievements, humanity rushed into modifying itself without answering the most basic questions: "After four

[11] Ibid.

[12] Peter Watts, *Firefall* (London: Head of Zeus, 2014), MOBI file, location 10600.

[13] Thomas Metzinger, *The Ego Tunnel: The Science of the Mind and the Myth of the Self*, (New York: Basic Books, 2010), MOBI file, location 69.

[14] Ibid., location 69. Emphasis original.

thousand years we can't even prove that reality exists beyond the mind of the first-person dreamer. We have such need of intellects greater than our own." The results of this need are highly advanced computers and artificial intelligences, that are almost incomprehensible to so-called "baseline," unmodified humans. As the novel's narrator, Siri Keeton, himself far from the baseline humanity, observes:

> [W]e're not very good at building them. The forced matings of minds and electrons succeed and fail with equal spectacle. Our hybrids become as brilliant as savants, and as autistic. […] Computers bootstrap their own offspring, grow so wise and incomprehensible that their communiqués assume the hallmarks of dementia: unfocused and irrelevant to the barely-intelligent creatures left behind.[15]

Those who are left behind, and are unwilling to change themselves, often flee reality into Heaven, a complex virtual reality environment whose inhabitants can create any fantasy they deem fit, without being bothered by the environmentally decaying, posthuman-populated outside world. Such an opening premise pictures a late capitalist paradox – a world that is highly advanced technologically, but with precious few who can benefit from this fact, let alone understand its own creations. The price for this dubious progress is, as mentioned above, the commodification of minds and bodies. At one point, Siri daydreams about the possibility that even the inhabitants of Heaven may be made more effective by having their unnecessary limbs and organs removed.

There are also those, however, who take part in the posthuman rat-race, including the crew of the *Theseus*, a ship sent to find potential extraterrestrial visitors. All of them form the bleeding edge of human modification, who were endowed with a set of skills both through modification and mutilation. Some, like the expedition's leader Jukka Sarasti, were created through gene therapy. Sarasti is what scientists call a "vampire" – a once-extinct offshoot of the *homo sapiens*, a cannibalistic predator that, along with its murderous instincts, possesses a savant-like level of intelligence. Most of the other members, however, have asked for their enhancements. These include major Amanda Bates, a cyborgized soldier equipped with a considerable number of slaved drones; Isaac Szpindel,[16] a biologist modi-

[15] Watts, *Firefall*, location 511.

[16] Szpindel dies during the novel, only to be replaced by Robert Cunningham, also a biologist, who seamlessly fits into his place. All members of the expedition have a "backup" stored on the *Theseus*, waiting to be awakened in case of an emergency. This detail further underlines the point that utility is far more important that individuality.

fied to "synesthetically perceive output from their lab equipment,"[17] and able to perceive more wavelengths than unmodified humans; and Susan James, a linguist consisting of four distinct, cooperating personalities sharing one body. James, most interestingly, exemplifies the mentality that has led to the creation of such posthumans. On the one hand, it is acknowledged that to house the four personalities in her body, her brain matter had to be physically partitioned into four distinct parts. On the other hand, Sascha, one of James' component personalities, criticized the twentieth-century approach to multiple personalities:

> People were fucking barbarians about multicores back then – called it a disorder, treated it like some kind of disease. And their idea of a cure was to keep one of the cores and murder all the others. Not that they called it murder, of course. They called it integration or some shit.[18]

Even the approach of the *Theseus*'s crew to themselves seems both superficially contradictory and grimly self-conscious. There is a feeling of superiority, underlined with knowledge that something has to be given up in return. "[I]t's not so much that the bleeding edge lacks social skills; it's just that once you get past a certain point, formal speech is too damn slow."[19] Likewise, Cunningham is called at one point "another prototype," whose face lacks any expression, for "the wetware that ran those muscles had been press-ganged into other pursuits."[20] Siri Keeton, whose role is, as will be expanded below, that of a translator between the baseline and posthuman, notices that:

> [B]eneath Szpindel's gruff camaraderie, beneath James's patient explanations – there was no real respect. How could there be? These people were the bleeding edge, the incandescent apex of hominid achievement. They were trusted with the fate of the world.[21]

However, this path is not a choice, but a necessity. This is especially true of Robert Cunningham, who seems to treat his modification "[a]s though he'd upgraded his wardrobe instead of ripping out his senses and grafting new ones into the wounds."[22] When asked by Keeton why he had installed his various enhancements, Cunningham remarks that:

[17] Ibid., location 10708.
[18] Ibid., location 1936.
[19] Ibid., location 2636.
[20] Ibid., location 2566
[21] Ibid., location 3166.
[22] Ibid., location 3328

> "It's vital to keep current," he said. "If you don't reconfigure you can't retrain. If you don't retrain you're obsolete inside a month, and then you're not much good for anything except Heaven or dictation."[23]

Siri Keeton's role, finally, is also quite indicative of the paradoxes of the novel's reality. As mentioned above, his role is to send reports back to Earth, to translate the actions of the posthuman crew of the *Theseus* to the far less intelligent decision makers. Keeton is necessary in the scenario "when your surpassing creations find the answers you asked for, [when] you can't understand their analysis and you can't verify their answers."[24] This, more than anything, seems to demonstrate the futility and the ultimate consequences of unchecked, rapid technological development of human cognition and processing power. At some point, any data acquired by the enhanced minority will be so complex that it will become useless to the baseline majority; either not comprehensible or simplified so much, that the way of its acquisition becomes unnecessary

> use information theory to flatten it for you, to squash the tesseract into two dimensions and the Klein bottle into three, to simplify reality and pray to whatever Gods survived the millennium that your honorable twisting of the truth hasn't ruptured any of its load-bearing pylons.[25]

The problem, it would seem, is the notion of the self and of conscious information processing. Watts, taking his inspiration from Metzinger, seems to imply that the self is an unnecessary evolutionary baggage that does not imply, nor is needed for, intelligence in any way. This becomes apparent when the crew of the *Theseus* encounter the extraterrestrial space ship and its inhabitants, who while seemingly able to instantly process vast amounts of data, possess no self or consciousness.

The Scramblers

The alien ship, which does seem to communicate, and calls itself *Rorschach*, influences the posthuman crew from the moment they encounter it. Those influences, a result of both the aliens' activities as well as the ship's dangerous environment, are inspired by the examples of various disorders Metzinger provides in his book to demonstrate the doubtful use and power of consciousness.

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[23] Ibid., location 3329.
[24] Ibid., location 512.
[25] Ibid., location 515.

The most interesting aspect of *Rorschach* is the creatures that inhabit it. Dubbed the "scramblers," the aliens can achieve feats of information processing unheard of by humans. Their very name comes from their ability to remain "invisible" to human sight by constantly moving between the saccade movements of the human eye, when, for a number of milliseconds, the conscious brain does not register auditory stimuli. This ability, as well as the fact that captured scramblers learn very quickly how to solve complex mathematical problems, leads some of the crew of the *Theseus* to question their seeming lack of a complex neural system. After Cunningham asserts that "scrambler is an absolute miracle of evolutionary engineering […] [but i]t's also dumb as a stick,"[26] Susan James argues with him about the nature of intelligence:

> "This is all just crunching," Cunningham said. "Millions of computer programs do it without ever waking up."
> "They're intelligent, Robert. They're smarter than us. Maybe they're smarter than Jukka. And we're – why can't you just admit it?"[27]

Their disagreement demonstrates their wider approach to intelligence of the world they inhabit. While they seem fundamentally in disagreement, they both seem to project their hopes on the scramblers. Both, perhaps unconsciously, notice that humanity could very well reshape itself into scrambler-like creatures. Yet, while Susan James seems to hope, perhaps naively, that processing power can equal intelligence, the sentiment is not shared by Cunningham. The final point seems to be, however, in the claim that the "smarter [the] animal, [the] less self-awareness,"[28] and in the theory Sacha James presents at the end of the novel, in which she theorizes that the non-sentient scramblers, upon receiving a radio signal coming from Earth, interpret it as malignant:

> The only explanation is that something has coded nonsense in a way that poses as a useful message; only after wasting time and effort does the deception become apparent. The signal functions to consume the resources of a recipient for zero payoff and reduced fitness. The signal is a virus. Viruses do not arise from kin, symbionts, or other allies. The signal is an attack.[29]

This theory, while not necessarily true, is to some degree validated by Watts himself in the final remarks accompanying the novel. In these, he

[26] Ibid., location 2949.
[27] Ibid., location 3481.
[28] Ibid., location 4113.
[29] Ibid., location 4316.

directly states that there is a logic to the scramblers' reaction to such radio signals, full of art and rhetoric: "Aesthetics. Sentience. Extinction. And that brings us to the final question, lurking way down in the anoxic zone: the question of what consciousness costs. Compared to nonconscious processing, self-awareness is slow and expensive."[30] Of course, the next question to ask is why humans are even conscious then, the question to which the author of *Blindsight* provides no answer, stating only that he hopes that consciousness is a positive trait, and that his novel is a "thought experiment, a game of *Just suppose* and *What if*. Nothing more."[31] Even as such, however, when read in the wider context of contemporary neuroscientific approaches, it provides a stark critique of the IP metaphor, and demonstrates its possible dangers.

Conclusion

At one point in *Blindsight*, the narrator remarks that "people have an unfortunate habit of assuming they understand reality just because they understood the analogy."[32] This sentence is a fitting commentary to the aspect of Watts' book which, while still operating from within the confines of the IP metaphor so prevalent in science fiction, tries to portray a world in which this metaphor is taken to an extreme. In less speculative contexts, it can be found in the quest to build computers that can beat humans at games such as go or chess, ones that have become synonymous with advanced intellect. However, as Robert Epstein argued in his "Empty Brain," likening the brain to a computer has little to do with reality, and is potentially damaging to our understanding of the human brain, both scientifically and economically.[33]

The crew of the Theseus were all, willingly or not, enhanced to remain competitive in an economy that treats the processing power of the brain as a mere commodity. However, a consequence is that such increasingly specialized posthumans became incomprehensible to most of their species, rendering the blind race for superior intelligence moot. At the same time, the extraterrestrial beings they encounter show a possible result of the path humanity is on within the novel. While both highly intelligent and able to travel to different star systems, they possess no consciousness. Thus, Watts' description of the Scramblers, an ultimate information processing

[30] Ibid., location 10653.
[31] Ibid., location 10671.
[32] Ibid., location 5552.
[33] Epstein, "The empty brain."

life form, can be read as a critique of the IP metaphor, a demonstration that such a view is both reductionist and potentially dangerous.

In the wider context of speculative fiction, one aspect of the brains-as-computers metaphor, as presented in Watts' *Blindsight*, is the already stated fact that "post-" or "transhumanity" seems synonymous with technology. Such a statement may, however, reveal a particular bias. The merging of different biological elements, the existence of gut bacteria or the hybridity of man and animal or plant or fungi is just hybridity, something that has been explored by Jeff VanderMeer in his *Southern Reach Trilogy*. The man-machine hybrids remain a separate category, possibly due to a bias towards machines being synonymous with progress, while the focus on biology could be read as synonymous with regress towards agriculture. However, novelists like VanderMeer or China Mieville slowly break this dichotomy, allowing the notion of post- or transhumanity to go beyond the realm of the digital and the mechanical. Even more importantly, narratives about such biological transhumans can more easily escape the focus on economy and commodification, so present in Watts and the novelists before him.

Michał Różycki

The Consciousness of the Posthuman in Peter Watts' *Blindsight*

The purpose of the paper is to analyze what seems to be one of the main themes of *Blindsight* – the treatment of the human brain and consciousness as yet another part of the body that can be enhanced to maximize its efficiency, with all the unnecessary parts to be remade or removed. This point seems to be emphasized by Watts's characterization of the extraterrestrials – star faring, resilient and super intelligent, but lacking any sort of individuality or consciousness. Having, or being, a "self" is, it would seem, more of a flaw than a positive trait.

Keywords: transhumanism, posthumanisim, science fiction, Peter Watts, *Blindsight*, artificial intelligence, futurism.