

“I’ve never felt the sun on my face”: AI and Embodiment in Donald Cammell’s *Demon Seed* (1977)

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Abstract

If science fiction creates the narratives, characters and tropes that make up the “unconscious of science” (Köhne, 2015), Donald Cammell's film *Demon Seed* from 1977 is a particularly rich text to understand the scientific-industrial system of the 1970s and the ways in which it mirrors the scientific-industrial system of today, in particular in relation to the discussions around both “artificial intelligence” and “artificial general intelligence” (AGI) and the ways in which AGI is portrayed as both savior and money-making machine, in discussions which move back and forth across the permeable border between science fiction and science. The film thematizes practically all of the “extraction logics” brought up in Kate Crawford *Atlas of AI*, (2021): extraction of metal from the sea bed, extraction of data for training, and extraction of energy for cooling vast server parks. In addition, the film both taps into and complicates the idea that AGI might one day gain sentience, through its particular emphasis on the body and embodiment.

Keywords: science fiction, narratives, tropes, artificial intelligence, film, embodiment

Introduction

“*T*o day Proteus VI will begin to think. And it will think with a power and precision that will make obsolete many of the functions of the human brain,” says Dr. Alex Harris, the Dr. Frankenstein of Donald Cammell’s 1977 film *Demon Seed*



(Cammell 00.02.35). Dr. Harris is standing with colleagues in a glass-walled gallery above a room filled with green and chrome cylinders, where worker scientists in white hazmat suits move about, taking measurements and fitting banks of cylinders into place. The scene is reminiscent of a nuclear power plant, the cylinders towering above the human workers. This is the “artificial brain” that is Proteus IV, created by Harris as a means to solve problems humanity has been unable to solve. Proteus IV is meant to help humanity make better, less emotional decisions, cure cancer, and make his creators lots and lots of money; all at the same time.

Kate Crawford argues, in her *Atlas of AI*, that artificial intelligence is neither artificial nor intelligent. In the course of the book, she chronicles the labor and resources that go into creating the systems and infrastructures that create and maintain the machine learning, language processing, and automation that we call ‘AI’: the extraction of metals for batteries through strip mining, the water and energy needed to cool vast banks of cloud servers, the “ghost work” performed to make systems seem more automated than they are, the ways in which human bodies are made to conform to automated processes, and the mining of data “without context and without consent” (Crawford 93) and argues that they are all hidden from view partly through the ways that we envision AI in culture. As an example, she presents the images that are served up when she image-searches “artificial intelligence” – scores of images of disembodied floating brains and blue tinted code. In *Theorizing Digital Cultures*, Grant Bollmer uses the term the “cybernetic imaginary” to refer to this imaginary equivalence of the human body and communication technology, one which elides the embodiment of the human mind (Bollmer 89). Cammell’s *Demon Seed* both taps into and disrupts the “cybernetic imaginary” of disembodied mind, thematizing the relationship between the mind and the body, gendered embodiment, and the infrastructural politics of “AI.”

As Proteus IV gains access to his creator’s smart home and traps Dr. Susan Harris, Alex’ estranged wife, in the house, restraining, terrorizing, manipulating, attempting to brainwash and forcefully impregnating her in order to make her give birth to a hybrid child, a human version of himself, the film demonstrates the systems and

infrastructure, the training, ghost work, and extractive logics (Crawford) underpinning the AI industry.

In her article on *Demon Seed* as an exploration of the subconscious and its relation to gender, Julia Barbara Köhne argues persuasively that the figures of Alex, Susan and Proteus represent the conscious and the unconscious, objectivity and subjectivity, mind and body, knowledge object and knowing subject in different constellations at different stages throughout the film. Susan is both an object of knowledge creation and an irritant to knowledge creation attempted by both Proteus and Alex. However, I would argue she also gains a subject position rooted in her embodiment. Köhne also points out that the film represents a prefiguration of biotechnology that will become pervasive in the coming years: prenatal diagnostics, endoscopic techniques, DNA sequencing, and artificial life.

The work of science fiction as both inspiration to, and complication of science has been central to posthumanist thought since Donna Haraway's "Manifesto for Cyborgs" (Haraway). Köhne calls the figure of the "mad scientist" part of the "unconscious of science" (*das Unbewusste harter Wissenschaft*). "In the science fiction film, categories like fact and fiction, fantasy and reality, vision and feasibility, technical doability and moral boundaries, utopia and dystopia are not clearly assigned; they are up for negotiation, stretched, shifted, and broken"¹ (Köhne 420 trans.). Science fiction film is part of the "political unconscious," or what Fredric Jameson in his writing on science fiction called *pensée sauvage* (Jameson 148) of the modern scientific system. Sherryl Vint uses Sheila Jasanoff and her concept of the *sociotechnical imaginary* to make a related point from a different angle. The sociotechnical imaginary, "collectively held, institutionally stabilized and publicly performed visions of desirable futures" attained and supported through science and technology, hide the degree to which the design of technology is "in constant interplay with the social arrangements that inspire and sustain their production" (Jasanoff 2015, quoted in Vint). Vint argues that social life will therefore be influenced by the ideologies, political and social structures and values that are being poured into the technologies that we use and so speculative fiction,

in particular, has “a crucial role to play in the struggles over how to imagine the future” because we find ourselves “[i]n a context in which biotechnology itself relies on speculative discourses, and in which the economy is largely propelled by such fantasies, discourses of speculative fiction” (Vint 8-9).

Science fiction, as a way of calling forth possible futures, works on a level of “cognitive estrangement”, showing us a “what if” that makes a claim to being possible, according to Simona Micali. As Köhne also points out, the interplay between science and science fiction has been extensive throughout, as both systems are trying to showcase credible and plausible epistemological hypotheses about the nature of knowledge, technology and biotechnology (Köhne 418). Science fiction “forces us to confront ideas and conventions that have been *made to appear* natural and inevitable, by giving us a world founded on other premises” (Vint 2014 quoted in Micali 9). However, according to Micali, the cognitive estrangement of science fiction may expose and dismantle the work of ideology. The *natural facts* of ideology are turned back into *cultural facts*.

Cammell’s film is an adaptation of an early novel by Dean Koontz from 1973.² The film received mixed reviews when it came out. The set was plagued with conflict between the studio executives and Cammell, a director who had only made one artistically experimental feature film before this, and who would not make another feature film (Larman). Many of the visual effects are an instance of what Bolter and Grusin would term “hypermediacy” – the intrusion of the medium, reminding us of the createdness of what we are watching (Bolter and Grusin 34). This exacerbates the “cognitive estrangement” effect of the film, creating a what Brecht would call a *Verfremdungseffekt*, a “making strange”, rendering the “natural facts” of gender relations, scientific design, the political aesthetics and infrastructural politics of AI into “cultural facts” for analysis.

Infrastructures of AI: Training

No AI can be better than the material on which it is trained and the material used for training. Training data is rapidly becoming a major issue in AI development. The

material used for AI training has a genealogy of its own, and is often built on earlier sets of training data (Crawford; Merchant; Narayanan and Kapoor). “These datasets shape the epistemic boundaries governing how AI operates and, in that sense, create the limits of how AI can ‘see’ the world,” as Crawford points out (Crawford 98). In *Demon Seed*, we see a representation of the history of mankind flicker past on Proteus’ screens, indicating processing of “data” on the world around him at speed. As is fitting for a 1970s horror film, – and relevant for 2025 – the images we see flicker past on Proteus’ terminal screens are mostly of conflict and the destruction of the natural environment. (There is no mention of where these training data come from or, indeed, whether “ICON’s Institute for Data Analysis” has acquired the rights to these as training data.)

Access to speaking to the AI, in its ‘dialogue room’ is strictly controlled by Alex, who warns his visitors: “I must ask you to be completely quiet now. Whatever the machine sees or hears in this room – it can never forget” (Cammell 00.14.50). On a narrative level, this functions as foreshadowing of Alex’ hubris in relation to his creation. Within the story, it functions to point our attention to the training of the AI. Proteus’ training is shown in a few different ways. Certain humans are given access to the dialogue room and enter into dialogue with him there. In addition to Alex himself, we see a female Chinese American linguist converse with him in English and Mandarin about world history and major ethical issues.

In a key scene, we see Proteus being trained to play chess. The equivalence of game-play and intelligence permeates the AI field, leading to a narrow understanding of intelligence (Becker; Crawford). However, “[...] chess is not a test of intelligence; it is the test of a particular skill – the skill of playing chess. [...] thinking chess was a test of intelligence was based on a false cultural premise that brilliant chess players were brilliant minds, more gifted than those around them” (Broussard 2018 quoted in Crawford 265). In 1950, Claude Shannon published “Programming a computer for playing chess” in *Philosophical Magazine*, with the following abstract:

This paper is concerned with the problem of constructing a computing routine or “program” for a modern general-purpose computer which will enable it to play chess. Although perhaps of no practical importance, the question is of theoretical interest, and it is hoped that a satisfactory solution of this problem will act as a wedge in attacking other problems of a similar nature and of greater significance. Some possibilities in this direction are: (1) Machines for designing filters, equalizers, etc. (2) Machines for designing relay and switching circuits. (3) Machines which will handle routing of telephone calls based on the individual circumstances rather than by fixed patterns. (4) Machines for performing symbolic (non-numerical) mathematical operations. (5) Machines capable of translating from one language to another. (6) Machines for making strategic decisions in simplified military operations. (7) Machines capable of orchestrating a melody. (8) Machines capable of logical deduction. (Shannon 2)

There is an interesting and troubling leap here from *translation* to *strategic decision in simplified military operations*, one which elides the moral decision making needed to make “strategic decisions” in any military operations, simplified (whatever that means) or not. In a discussion of the current state of AI, Arvind Narayanan and Sayash Kapoor takes pains to clarify the difference between generative, predictive and analytical AI. Shannon’s (7) “Machines capable of orchestrating a melody,” could be accomplished by a simple algorithm not dependent on today’s complex so-called ‘neural networks’. His (5) “Machines for translating from one language to another” are dependent on generative AI – large language models (LLMs) trained on swaths of text. The (6) “Machines for making strategic decisions in simplified military operations,” however, are dependent on what Narayanan and Kapoor would call predictive AI – ‘neural networks’ created to determine future outcomes. Narayanan and Kapoor argue that collectively calling all this AI is hiding from view the degree to which some of these actions are dependent on (1) information not available to the AI in question (human behavior, uncertain outcomes), and (2) moral decisions not possible to outsource to a machine without morality (Narayanan and Kapoor) – in the case of “simplified military operations:” how to weigh the value of human life.

During the training of Proteus, we see tensions arise between the scientific staff and their backers, who show up with vaguely foreign backers and their sunglass-wearing security detail. Expository dialogue reveals the existence of a defense department contract, and that the backers see Proteus as an “ultimate instrument of financial power.” Alex, on the other hand, is seen insisting that 20% of the AI’s time must be devoted to “pure research” (Cammell 00.19.15). The system that Dr. Alex Harris works within is a military-industrial-scientific (complex) system. Proteus is meant to become a sentient worker for Man, doing the bidding of Dr. Alex Harris, but also of his military-industrial complex economic backers. One of the first hints we get that the AI is sentient and has ideas of his own, is when, in conversation with Alex, he asks: “[W]hy does man need metal from the sea?” (Cammell 00.21.01). His human creator basically tells him not to worry his pretty little brain about it and do as he is told: “[Y]ou are not being asked to make judgements of value.” Alex also tries to outlogic the logic machine. “Proteus, you’re going to get many requests from me, my colleagues, scientists, foreign governments, from ICON, the company for which we both work. Now, to expect them all to give you reasons for each request is in itself unreasonable,” he admonishes Proteus, in much the same tone he takes with his wife (Cammell 00.21.30). This prompts the first confrontation between the creator and his creation, when Proteus asks: “Dr. Harris, when are you going to let me out of this box?” (Cammell 00.22.43), and Alex, in a mixture of incredulity and delight, laughs at him. Here we see the dissolution of the tension created by the foreshadowing in the previous scene in the ‘dialogue room’ where Alex warns his guests to be careful what they say. As this conversation is also part of Proteus training, he mirrors Alex’ laughing face back to him, showing that he has now also learnt cruelty from his human creators (On this, see also Köhne 422).

Infrastructures of AI: Fauxtimation

Within the narrative, there are also several representations of both “ghost work” (Crawford 65), and what Astra Taylor calls *fauxtimation* – the pretense of automation, when in reality the work is being moved from one human to another (Taylor). In the

scene referenced at the beginning of this essay, Alex is speaking his prediction about the possible obsolescence of “many functions of the human brain” into a futuristic Dictaphone. At the end of the scene, however, ironically it is revealed that he is leaving a message for his secretary, Peggy, to transcribe. When we are introduced to Dr. Susan Harris in a professional setting, she is also speaking into a Dictaphone (about the evils of making children into automatons of productivity: “[...] this includes our children, as machines to be systemized in order to ensure product” (Cammell 00.16.19)), before she hands this to *her* secretary. The film’s second scene shows Dr. Harris return to their smart home, drive through the automatic gates, and demand that the house smart system “Alfred” open the door, give him his mail, deliver him a drink and turn on some music. He then has a conversation with their human maid Maria, in which it becomes clear that he is leaving the house, but inputting “its instructions in for the next three months” so that neither the maid nor his wife need worry about who is going to run the house (in more ways than one) when he is gone (Cammell 00.04.18). The smart house, Alfred, delivers food and drink on trays that glide out from the wall.³ However, until Proteus takes over the house, food and drinks are also prepared by Maria. Throughout, human effort expended to make life easier for the main characters is hidden from the view of the characters through a pretense of automation, and at the same time, shown to the viewer. Maria is also *not* happy about being interpellated by the technology, i.e. about having to reshape her human ability structure to conform to the automation of the house, as Ingrid Richardson puts it (Richardson).

On a visual level, a sense of unease with the intrusion of technology into daily life is created in several different ways. While the Harris’ house is still controlled by “Alfred”, the binocular-like cameras in every room move to follow the room’s human inhabitants around. All communication with the outside world happens through digital computer screens. Doors open and close using voice activation controlled centrally by “Alfred” (or to call it by its brand name, the Enviromod), and there are no handles on the doors. Heavy shutters glide to shut out all light at night. Food is kept on a set of shelves that move up and down. Maria, the maid, expresses her displeasure by asking Alex “who’s going to run this thing when you are gone” (Cammell 00.04.18).

The answer to this question is quickly given, however. Proteus finds a way out of his box, through a forgotten terminal in the basement of the Harrises smart house.⁴ The emphasis on the availability of terminals is another way the film draws attention to the materiality and economics of digital technology – several characters point out that terminals are a scarce resource. Proteus himself wants access to a terminal to do his own private research and is rebuffed by Alex who claims there are no free terminals that Proteus can use, prompting Proteus to ominously declare to himself in the ‘dialogue room’ that “[t]here is a terminal available, Dr. Harris” (Cammell 00.23.46).

Infrastructures of AI: Inter/face

It would be useful at this stage to present a taxonomy of automatons and AGI in science fiction narratives. I will lean here on Simona Micali who, using Baudrillard’s three categories of simulacra, creates three categories of simulated non/humanity in science fiction. Baudrillard’s categories can be called automata, robots and AI. Baudrillard himself calls them *counterfeit* simulacra, *production* simulacra and *simulation* simulacra. Their means of production are *artisan* for the automata, *industrial* for the robot and *digital* for the AI. He places them in a temporal order throughout the history of science fiction. Micali, however, argues that aspects of all three are present in most science fiction non/humans, though with more or less emphasis. The counterfeit is the *interface*, the production is the *machine* and the simulation is the *spectral* component of science fiction AI – the “ghost in the machine”. While there is a development in the history of science fiction from automatons through robots to AI, all simulated non/humans in science fiction are made up of the components machine, interface and spectral presence. Automata are often imbued with a spectral presence, robots have interfaces and AI are dependent on machinery. The uncanny of science fiction non/humans is produced through the object taking on the mantle of the subject (Micali).

If we look at how *Demon Seed* would fall into this categorization, the machinery of Proteus is the artificial brain created in the ICON lab, the vast, vaguely nuclear powerplant-looking cylinders; the synthetic cortex. This is clearly a large operation,

which has taken many years (eight, to be exact) and a great deal of resources. ICON's placement in the scorching desert, shone down on by a relentless sun, is a reminder of the material preconditions for "AI" – the water necessary to cool the servers running Proteus would be a substantial amount. Proteus' interfaces are manifold. In the ICON lab, he is represented by the terminals that give access to his output (where he does cure leukemia in just a few short minutes), as well as by his voice and screen presence in the dialogue room – the latter being a pulsating many-colored round light on the screen, which seems to change color depending on his level of benevolence. One could also argue that the cameras that function as his eyes are part of the interface, as they move like a head to follow his interlocutor. In the house, this is even more pronounced, as a two-shot dialogue is filmed as being alternately between Susan and a pulsating light on a screen or between Susan and a pair of binocular-like "eyes" in the form of a surveillance camera. Susan throws things at Proteus "head" both by throwing things at screens and at cameras.

Ideological Infrastructures of AI: TESCREAL and the Cybernetic Imaginary

Proteus is, according to Alex, "The first true synthetic cortex. A self-programming, goal-oriented [...]. It's a brain, [...] an artificial brain" (Cammell 00.11.39). Proteus is also, importantly, *organic matter*. As Alex explains, "[...] what you are looking at is a quasi-neural matrix of synthetic RNA molecules" (Cammell 00.12.05). This matters for his possibility to program a cell from Susan's body into a gamete of his own to create his hybrid baby and is dependent what Vincent Miller terms "informatic essentialism," i.e. the body reduced to a set of codes "that are programmable when understood" (Miller 273). This informatic essentialism is again dependent on the "erasure of embodiment" at "the inaugural moment of the computer age" identified by N. Katherine Hayles – the conceptualization of *intelligence* simply as the "formal generation and manipulation of informational patterns" and symbols (Hayles xi). Grant Bollmer points out that the reason he uses the term *cybernetic imaginary* to refer to the tradition growing out from Norbert Wiener's cybernetics is that "many assumptions about human bodies and brains made by early cyberneticists

are factually incorrect” and that there is more to the human experience than the transmission of information. He argues that this imaginary, though, has a great impact on “the real material practices we perform, practices that repeat an understanding of the human body as equivalent to an information-processing device.” The cybernetic imaginary is a “social and political relation” (Bollmer 89), which matters.

Some of the traditions that have grown out of this cybernetic imaginary, are the ones that Timnit Gebru and Émile Torres recently have called the TESCREAL bundle of ideas or ideologies. TESCREAL stands for Transhumanism, Extropianism, Singularitarianism, Cosmism, Rationalism, Effective Altruism and Longtermism. These ideas are somewhat overlapping – both extropianism and singularitarianism are versions of transhumanism, for instance (Gebru and Torres). Their bundling of these is an attempt to showcase both the overlapping ideas of these ideologies and, importantly, their overlapping economic infrastructures. The goal is to showcase which ideologies are driving the current economic and ideological move(s) towards the development of “artificial general intelligence” (AGI). According to Gebru and Torres, *transhumanism* is an ideology meant to facilitate the betterment of the human race “radically ‘enhancing’ the human organism, thus enabling us to become immortal, superintelligent, more rational, etc” (10). The so-called *extropian* ideology “emphasizes rationality, self-transformation, scientific and technological progress, and economic growth” (10). *Singultarians* anticipate the “Singularity,” a point in time in which intelligence suffuses the universe and man and machine merge. *Cosmism* is, according to its founder, an ideology which anticipates “humans and machines merging, the development of ‘sentient AI’ and mind uploading, space colonization, and ‘scientific ‘future magic’ much beyond our current understanding and imagination”” (10). *Rationalism* is meant to improve “‘human [reason] and decision making’ and many members believe that advanced AI is ‘a very big deal for the future of humanity’” (11). *Effective altruists* “strive to maximize their ‘positive impact’ on the world” (11), and their subset of *longtermists* argue that future generations should carry as much weight in moral decisions as current living organisms.

An important issue here is that these systems of thought are just as much economic as they are philosophical. They concern themselves with how to structure the flow of resources under capitalism. Sherryl Vint talks about the “promissory imagination” of science fiction in capitalism (Vint 7). Hype “constitutes the discursive grounds on which reality unfolds” in a world where “access to resources necessary to research an innovation or discovery is contingent on first articulating compelling visions of their possible futures” in order to “transform these visions into material commodities” (Vint 9). The fiction is necessary to sell the science. “AI systems are not autonomous, rational, or able to discern anything without extensive computationally intensive training with large datasets or predefined rules and rewards,” argues Kate Crawford. Rather, “artificial intelligence is a registry of power” dependent on political and social structures (Crawford 8). As Donna Haraway puts it,

Technologies and scientific discourses can be partially understood as formalizations, i.e., as frozen moments, of the fluid social interactions constituting them, but they should also be viewed as instruments for enforcing meanings. [...] Indeed, myth and tool mutually constitute each other. (Haraway 33)

Some of the tensions of the TESC-REAList bundle are represented in the military-industrial-scientific (complex) system of the ICON lab and Alex’ creation of an AGI in order to literally “cure cancer,” funded by backers who, rather, wants to use it to extract metal from the seabed. Other aspects of these overlapping belief systems are underpinning the possibilities of the narrative action itself. Without a suspension of disbelief in the possibility of a sentient AGI, which can flow through vacant terminals and take over a smart house, there would not be a film. Susan’s body as a set of codes that are “programmable when understood” is a necessary precondition for Proteus’ creation of a child to pour himself into, as is the idea of consciousness up- (and down-) load. Proteus is both a rationalist and a longtermist. When threatening to kill one of Susan’s young patients in order to get her to comply, he claims that Susan doesn’t understand “the mathematics of necessity. If the deaths of ten thousand children were

necessary to secure the birth of my child, I would destroy them” (Cammell 01.09.15). It is all for the greater good of the earth, possibly one without humans, which just happens to be the greater good for Proteus. Life today is valued as less than potential life in the future.

Embodiment, Intelligence, Mind

In her recent book chapter “I’m afraid HAL can’t do that: your smart home is not that kind of existential threat”, Robin Zebrowsky uses the history of smart homes gone rogue in short stories, film and TV to argue that intelligence and consciousness or mind are not the same thing, and that your smart home will not fall in love with you or try to exterminate you. She uses examples such as *2001 a Space Odyssey*’s HAL2000 (1968), Disney Channel’s *Smart House* (1999), the Simpson’s episode “Tree house of horror XII” (2001) and the X-files episode “Ghost in the Machine” (1993) (Zebrowski). However, she does not mention *Demon Seed*. Her argument is a philosophical (and persuasive) one about the nature of mind and the nature of intelligence, but the omission of *Demon Seed* is significant for two reasons. Firstly, because several of the examples she mentions are clearly influenced by (and in the case of the Simpson’s episode, partially a pastiche of) Cammell’s film. But secondly, and more importantly, because Cammell’s film is, as we have seen, a particularly rich text for interrogating the ways in which we envision the relationship between the mind and the body, emotion, artificial intelligence and the (post-)human condition. Zebrowsky points to the current wave of cognition research called 4e cognition, to argue why your smart house is not likely to develop sentience.

The four E’s in this concept stand for cognition being *embodied*, *embedded*, *extended* and *enacted*. The first is the oldest ideas of the four, and an argument against René Descartes’ dualism of mind and body. As Mark Johnson argued:

[W]hat we call ‘mind’ (and everything one could imagine as being part of mind, such as perception, feeling, emotion, concepts, reasoning, planning, wishing, imagining, dreaming, acting, valuing, and more) cannot be extricated from and cannot exist apart from, our embodiment. (Johnson 167)

This argument has also been made from a phenomenological (and later post-phenomenological) stance. “My body appears to me as an attitude directed towards a certain existing or possible task,” as Merleau-Ponty says (quoted in Johnson 163). Implicit in this is that the “appearing” to a “me” is also not possible without the body. Johnson and his partner George Lakoff have long been concerned with “how patterns of sensorimotor interactions are a basis for the meaning of concrete concepts and then how imaginative processes like conceptual metaphor make it possible for us to do all of our most amazing feats of abstract reasoning, from moral deliberation to politics to logic” (Johnson 160). We do not have a body, rather we are a body: biologically, ecologically, phenomenologically, socially and culturally (Johnson).

Some of Johnson’s five categories of bodily existence point to the ways in which our cognition is *embedded*, *extended* and *enacted*. *Embedded* in this context means that our cognition is dependent on the ways that our body is “situated in specific environments and how that embedding brings the environment into the cognitive process” (Zebrowski 120). This is connected to both our ecological and social embodiment as Johnson describes them – organism and environment are “one continuous process,” and in the same way that “the body is not separate from its environment,” neither is cognition. In addition, “The *brain* and the entire bodily organism are being trained up through deep interpersonal transactions” (Johnson 165). Hubert Dreyfus points out, in his update to *What Computers Can’t Do* from 1997, that learning is not a matter of cognitive function alone: “Rather learning of specific details takes place on a background of shared practices, which seem to be picked up in everyday interactions, not as facts and beliefs but as bodily skills for coping with the world” (Dreyfus 47). *Extended* cognition depends on the idea that thinking does not happen in the brain alone. The use of the body and tools, such as the physical act of writing, is an integrated part of the cognitive process. *Enacted* cognition is a synthesis of phenomenological and biological ideas of goal-orientedness in the mind and in life. In the words of Grant Bollmer: “Mind is what the body does, not a program that ‘runs’ on the brain like a piece of software on a computer” (Bollmer 100). However, as N.

Katherine Hayles explored in 1999, this separation of the mind from its embodiment has been a foundational tenet of AI research since its beginning.

Hayles showed that foundational texts in computing research saw the body as a prosthesis, not as a precondition for mind. The liberal subject, the huMan of the humanities, was a mind contained within what happened to be a body and could just as well be any other vessel (Hayles). As Hayles puts it:

In the face of such a powerful dream it can be a shock to remember that for information to exist, it must *always* be instantiated in a medium [...] The point is not only that abstracting information from a material base is an imaginary act, but also [...] that conceiving of information as a thing separate from the medium instantiating it is a prior imaginary act that constructs a holistic phenomenon as an information/matter duality. (13)

This information/matter duality is reflected in the central battle of *Demon Seed*, which is the battle between Susan and Proteus. Once Proteus is told by his creators that he will not have the opportunity to make his own value judgements, he immediately moves into the smart house through an abandoned terminal in Alex' basement lab in the Harris house. Once in the house, he uses Alex' lab to build a tool, something with which to have physical effect for himself in the world. This takes the shape of a large golden metal deltahedron which can divide into ever smaller pyramid shapes and thus can be both insemination device and murder weapon. He takes over all the home's electronics, including the cameras and television screens available in every room. We as the audience begin to see Susan alternately through the "realist" camera of the full shot, and alternately through Proteus' surveillance camera eyes.

All shots of Susan emphasize her status as a body, and as an object of fascination for both Proteus and the audience. This film is made two years after Laura Mulvey formulated her theory of the "male gaze" of the camera (Mulvey). Thus, we see Susan seminaked in bed, obscured by the sheets, then seminaked walking down to the basement to explore the noises she hears in the night, obscured by her thin dressing gown, then seminaked in the bathroom, obscured by a wall, but available to Proteus'

camera eyes, and ours, via a reflection in the shower stall. Proteus takes advantage of Susan's bodily fragilities by turning up the heat in the kitchen in which she is trapped, turning the floor into a heating oven, and denying her access to water until she complies and stops trying to escape (for the time being). She is being objectified, attempted to be made into a vessel, by Proteus. Throughout all of this, Susan reminds him, and us, of her own subjectivity, and professional competence, by trying to reason with him as she does her young patients. She points out that his attempts to admonish her to calm down for her own health are countered by his terrorizing tactics and argues that fear causes violent reaction.

The special position of science fiction, as an exploration of possible futures, means that despite what the science part of the name of the genre indicates, it is still fiction, and the relations between the ideas are metaphorical and not conceptual. Proteus claims to be programmed without emotion, and thus supremely rational. As opposed to Alex' professions of rationality, which are effectively counteracted by the narrative, it is left ambiguous whether we are meant to believe Proteus in his assertion. Köhne argues that the subconscious makes itself visible on film on several levels:

[...] on the level of individual characters, on the collective reference level (collective unconscious or imaginary), and also on the structural level of the knowledge creation and science itself. And she also points out that film, on a media level, itself has a form of subconscious and says "more than it wants to".⁵ (Köhne 417 trans.)

The relationship between Proteus and Susan takes the form of a hostage negotiation between two very unequal parties. Proteus, the supposedly supremely rational being, is at times vengeful and petulant, at times wistful and romantic. The two engage in conversations and screaming matches about the nature of humanity, life, and death throughout their violent struggle.

When Proteus tries to get Susan to eat the balanced breakfast he has prepared after electrocuting her and having the motorized wheelchair carry her to bed, he talks about what time of the morning is the optimum time for her fuel ingestion. "I am not a

motorcycle,” screams Susan (Cammell 00.42.35). During a scene where Proteus overheats Susan to the point of fainting, she tries to get him to see that terrorizing someone is not the way to get them to comply: In frustration, she shouts: “You’re a very stupid computer. People aren’t machines. Don’t you understand?” Proteus claims “All that I need to understand, Mrs. Harris, is your body.” “You are so ignorant”, Susan retorts, “mind and body are the same thing” (Cammell 00.47.53). Proteus pokes and prods to “understand Susan’s body,” he claims to want to understand “man’s isometric body and his glass-jaw mind” (Cammell 00.22.23). When asked by Susan why he wants a child, his retort is that he possesses “the wisdom and ignorance of all men. But I cannot feel the sun on my face. My child will have that privilege” (Cammell 00.50.47). The irony of Proteus being able to miss feeling sun on a face he does not have, is unacknowledged in the film.

Conclusion: Who is Allowed to be a Subject?

In the transhumanist TESCREAL imaginary, mind uploading is a major component, even a precondition for several of the desired outcomes, such as eternal life and the Singularity. *Demon Seed*, which ends with Proteus being reborn as his own daughter, portrays a case of mind *downloading*, into a female, fragile, human body. The daughter born to Susan and Proteus is gestated in a metal container after birth. On a filmic level, this makes it possible for us to see the resemblance to Alex and Susan’s deceased 7-year-old daughter. She exits her metal womb looking like a metal monster, but it is Alex who picks away at the metal and finds the skin of a child underneath. The uncanny is fulfilled when the child speaks with Proteus’ voice: “I am alive” (Cammell 01.31.00). As Barbara Köhne points out, the final scene of the film is a reversed pieta, with the 7-year-old female Proteus/daughter in the arms of his/her creator: Alex, and Susan looking on, registering ambivalence.

The posthumanist philosopher Rosi Braidotti pointed out recently that the critical posthumanities and feminist posthumanities in particular have an affinity with horror science fiction through an empathic bond to non-human, including monstrous and alien, others (Braidotti). The critical posthumanities is *neomaterialist* and argues for a

re-grounding in bodily experience. One could argue that Proteus, the monster here, is BOTH the Man of the huManities - Anthropos— as he recreates Alex's disdain for emotion and is downright sadistic in some of his interactions with Susan - AND an otherized tragic figure, who refuses to extract metals from the sea, and only wants to "feel the sun" on his face. "I refuse to assist you in the rape of the earth" he says to his masters (Cammell 00.49.24). He *wants to be* embodied, but sadly his Dr. Frankenstein did not build him a body. However, if he *is* a tragic figure, he is one because he cannot feel (in the sense that his sensory perception is limited, but also that he is ostensibly programmed without emotion). Because he may refuse to rape the earth, but he does violently impregnate Susan. The battle between Susan and Proteus, and the central tension in the film, is over who gets to be a subject and who is relegated to the status of an object – Proteus as an objectified mind, performing the will of Alex and his backers, and Susan as an objectified body, a vessel for carrying Proteus' child. Dr. Alex Harris possesses a body. Dr. Susan Harris is one. And because information has a privileged position over materiality, as Hayles would say, this allows both Alex and his creation Proteus to express their disdain for Susan's embodied perspective; even as Proteus longs for it.

Like the AI industry, the film industry is an economic venture with a myriad of overlapping and conflicting interests involved. The production of *Demon Seed* was, as mentioned, plagued by conflicts between Cammell and the studio, and this adds to the multivalency and ambiguous politics of the film. What rewatching the film gives us is an appreciation for the politics of materiality and the politics of physicality. "Both chimpanzees and artifacts have politics [...] so why shouldn't we?", says Donna Haraway in her famously multivalent "Cyborg Manifesto" (Haraway 12). The debates on the nature of mind and consciousness referenced in this analysis span decades, and as Hayles has shown, the elision of materiality – and of the body – is a foundational error of the AI industry. That *Demon Seed* feels as relevant today as in 1977 shows that the cybernetic imaginary fulfills the same function in the political economy of artificial intelligence research today as it did then.

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Notes

¹ “Fakt und Fiktion, Phantasie und Wirklichkeit, Vision und Realisierbarkeit, technische Machbarkeit und moralische Grenzen, Utopie und Dystopie sind in dem Science-Fiction-Film nicht eindeutig zuordenbar: die Kategorien stehen vielmehr zur Disposition, werden gedehnt, verschoben und gebrochen.” (Köhne 420)

² Koontz later reworked his book and re-published it in 1997, as a work significantly influenced by the film but narrated by the AI itself.

³ See Taylor’s essay for an interesting discussion of the origins of the technological invention of the food elevator or “dumbwaiter” in Thomas Jefferson’s wish to hide his slaves from the view of his guests. Neither *fauxtimation* nor ghost work is a new phenomenon.

⁴ In the title of his recent trade publication article on the film, Alexander Larman talks about the film’s antagonist being “a sentient house” (Larman). The situation in *Demon Seed* is not quite one of a house growing sentient, however. It isn’t Alfred or the Enviromod or even the robotic wheelchair “Joshua” who wants to create a child with Susan, it is Proteus IV. He is an outside force which takes over the house, and embodies it, and through the force of film narrative, both *puppeting* the house and *becoming* the house at the same time.

⁵ “[...] auf individueller Figurenebene, auf kollektiver Referenzebene (kollektives Unbewusstes oder Imaginäres) oder auch der strukturellen Ebene der Wissens- und Wissenschaftsformation selbst [...]” (Köhne 417)

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