

**N. Katherine Hayles** Subversion of the Human Aura:  
A Crisis in Representation

**Abstract** The human aura is now being subverted by a variety of simulacra. OpenAI's language-generation program GPT-3 illustrates the challenges of interpreting algorithmic-generated texts. This article advocates interpretive strategies that recognize the profound differences (in the case of GPT-3) of language that issues from a program that has a model only of language, not of the world. Conscious robots, when and if they emerge, will have profoundly different embodiments than humans. Fictions that imagine conscious robots thus face a similar challenge presented by the GPT-3 texts: will they gloss over the differences, or will they enact strategies that articulate the differences and explore their implications for humans immersed in algorithmic cultures? The author analyzes three contemporary novels that engage with this challenge: Annalee Newitz's *Autonomous* (2017), Kuzuo Ishiguro's *Klara and the Sun* (2021), and Ian McEwan's *Machines like Me* (2019). Each interrogates how the human aura is subverted by conscious robots. The article concludes by proposing how a reconfigured human aura should be constituted.

**Keywords** human aura, subversion, Annalee Newitz, Kuzuo Ishiguro, Ian McEwan

**A**lready in 1935, Walter Benjamin understood that art and machines were moving along antagonistic paths: art grounding works in traditions and historical contexts that gave them an aura, and mechanical reproduction filling the world with mass-produced objects that annihilated aura (Benjamin 2006). Identifying film as the principal medium destroying aura, he noted that whereas a theater actor performs for a live audience, the film actor faces an apparatus. As a result, he argued, “the most important social function of film is to establish equilibrium between human beings and the apparatus” (117). In a note prefacing the essay's second version (the one he wanted published), Benjamin observed that an artwork's

aura was linked to the idea of “genius,” which could be co-opted by fascism (101). His approach, interrogating the subversion of an artwork’s aura, by contrast, was “completely useless” to fascism (102).

Thus Benjamin hinted that the subversion of aura may have liberatory possibilities.<sup>1</sup> In the new millennium, the subversive dynamic has gone beyond art objects into a quality we humans arguably value over all others: our subjectivity. As algorithmic systems become better at simulating human behaviors, voices, language patterns, and appearances, from chatbots and emotional robots to deep fakes, the “aura” of the individual person is called intensely into question. Now it is not a person facing an apparatus, as Benjamin saw the situation, but rather an apparatus *becoming* the person. Thus the human aura is challenged on its own turf by simulative objects invading the territory of the subject position, claiming for themselves the appearance of a person. The full implications of this transformation have yet to be realized. As with the destruction of the artwork’s aura, there are multiple possibilities for how this upheaval will play out in social, aesthetic, ethical, and economic terms, some of them liberatory, many not. What we can say for sure is that the situation is initiating a crisis in many different kinds of representations, including videos, photographs, novels, films, and other visual and verbal art forms.

In a nutshell, the crisis emerges from the paradoxical combination of increasingly close resemblances with highly disjunctive embodiments. Deep fakes look (walk, talk) like the humans they resemble,<sup>2</sup> but they are produced through algorithmic processes that have little or no understanding or knowledge about the world that humans inhabit. With the development of neural nets, the process of creating resemblances has reached new levels of similitude, with commentators again warning about rippling social, economic, and political fallouts from the now virtually undetectable fakes.

When the art form is a verbal narrative, state-of-the-art simulation is achieved by OpenAI’s extraordinary GPT-3 (Generative Pre-trained Transformer 3), the first language generator to produce human-competitive results.<sup>3</sup> The program recycles its outputs through generations of successive inputs. It can generate syntactically and semantically correct sentences responsive to the input it receives.<sup>4</sup> It can also detect and match high-level qualities such as genre and style. The program works through mechanisms called *attention* and *self-attention*. Technically complex, these mechanisms essentially allow focus on specific words in context, a strategy that successfully deals with the long-range dependencies of language (Vaswani et al. 2017).

The program is massive. With ninety-six layers of neurons, it may lay claim to being the largest and most sophisticated neural net ever created: GPT-3 “has about 175 billion parameters, and it was trained on about 45 *terabytes* of text data from different datasets, with 60% coming from Common Crawl’s archive of web texts, 22% from WebText 2, 16% from books, and 3% from Wikipedia. Training GPT-3 at home using 8 V100 GPUs would require about 36 years” (Hayles, forthcoming).

The program is so large that it can only run on the cloud. OpenAI offers it as a service (rather than a downloadable software) to users, accessed through APIs (application programming interfaces) that OpenAI has developed. The source codes for both the program and the APIs are proprietary. Users must apply to the company to have access to the API (see OpenAI.com); however, demos are available free at Adam King’s (n.d.) “Talk to Transformer” and now ChatGPT.

With a language generation program this powerful, it is inevitable that it will be used to write literary texts, either as a collaborator with a human author or with prompts devised to elicit literary productions. Already a human who calls themselves K Allado-Mcdowell (and prefers the pronoun *they*) recently published a text titled *Pharmako-AI*, which they claim they coauthored with the GPT-3 program (Allado-Mcdowell 2020). Confronted with such a text, a reader must make a choice about how to interpret it. One possibility is to read the text without regard to its authorial origins. This is what Irenosen Okojie does in the introduction, attributing to the book, including the program’s responses, a deep wisdom that “shows how we might draw from the environment around us in ways that align more with our spiritual, ancestral and ecological selves” (vii). Okojie thus positions the AI as AG—artificial guru.

This approach, which I call the *null strategy* (Hayles, forthcoming), has some theoretical justification. By analogy with the null hypothesis in science, the null strategy assumes that any differences between human- and computer-generated texts are irrelevant.<sup>5</sup> Echoing through the null strategy is Michel Foucault’s rephrasing of Samuel Beckett’s question, “What does it matter who is speaking?” In “What Is an Author?” Foucault ([1969] 1979) commented that the proper names appearing in *The Order of Things* were only placeholders for ideas that he attributed not to individual people but to the systemic dynamics of the era. Roland Barthes’s ([1967] 1977) “Death of the Author” articulates a similar idea, focusing not on the human author of *Sarrasine* but on the codes embodied in the text. Insofar as poststructuralist and deconstructive theories stress systemic dynamics rather than individual personalities, they support the null strategy.<sup>6</sup>

In my view, however, there are even stronger arguments against the null strategy. To evaluate the productions of GPT-3, it is essential to understand that the program does not have a model of the world; it has only a model of language.<sup>7</sup> Everything it knows comprises words (technically, tokens) expressed as vectors and manipulated mathematically through matrices, generating correlations associated with probabilities that are then output as words. By contrast, every human grows up with a model of the world, understood intuitively through embedded and embodied experiences from birth onward. Language capabilities are developed in this context, correlated with deep and rich bodily knowledges and sensory experiences. These provide the basis for the ability of language to refer to things in the world. Without this basis—with only language-to-language correlations, without any grounding in bodily experiences—GPT-3 inevitably generates expressions that exhibit what I call a fragility of reference, fractures that display a disjunction (really an ignorance) with how things work in reality (Hayles, forthcoming).

Now the crisis of representation appears in its virulent intensity. If literary criticism ignores the existential differences between speaking from a model of language versus speaking from a model of the world, the ability of language to represent the world is enfeebled, with all the social, ethical, and political implications that apply in these fact-challenged times. If, however, literary criticism rises to the challenge, begins to develop strategies that recognize this profound difference, and articulates interpretive techniques appropriate to it, then the productions of GPT-3 can enrich the literary canon, recognized as literary texts worthy of analysis in their own right. More important, such criticism, in grappling with how to understand mathematically correlated language productions, can become sources of insight into how to deal with the larger algorithmic cultures in which we are currently immersed. In effect, GPT-3 offers a training ground for understanding an AI mind, which is profoundly alien to human intuitive know-how and yet increasingly central to the infrastructural dynamics of developed societies.<sup>8</sup> As I concluded, the texts of GPT-3 are suitable objects for literary studies “not because they are human or even human-like, but because they act as cracked mirrors reflecting human language back to us through the mind of a machine” (Hayles, forthcoming).

### **The Case of Conscious Robots**

Knowing the enormous computational power it takes to create GPT-3, we can appreciate how much more difficult it would be to create

conscious robots, which would require not only a model of language but also a model of the world (or at least the means to construct one). In my view, such an achievement can happen (if it ever does) only through qualitative leaps in hardware and/or software. Although I am not persuaded that artificial consciousness will ever be possible, I think it cannot altogether be ruled out, either. Developments such as SyNAPSE, an abbreviation for Systems of Neuromorphic Adaptive Plastic Scalable Electronics, exemplifies one possible approach. A developmental neuromorphic chip, SyNAPSE is a joint project by Hewlett-Packard, HRL Laboratories, and IBM, funded in part by DARPA (US Defense Advanced Research Projects Agency; DeBoyle et al. 2019). Modeled on mammalian brains, SyNAPSE has one million electronic neurons and 256 million synapses between neurons. SyNAPSE chips can be tiled to create large arrays, with each chip containing 5.4 billion transistors, the highest transistor count of any chip ever produced. Still in a nascent stage, SyNPASE's continuing research program aims to create a computer language for the chips and to develop virtual environments for training and testing.

Where this and similar research projects will lead is anyone's guess. There is, however, one thing we can know for sure: conscious robots, if and when they appear, will operate on a profoundly different basis from humans. Although their architectures may be inspired by biological processes (as is the case for SyNAPSE), their functioning will be electronic, not biological. A conscious robot would have advantages over GPT-3, because it would be embodied and could learn from the sensory inputs as it receives. Nevertheless, it will never experience a true childhood, never feel emotions mediated by an endocrine system (although it may have emotions generated by other means), and never face death in the way humans experience it. When writers imagine conscious robots, they face challenges similar to those presented by GPT-3 texts. They can gloss over the profound differences between humans and robots, or they can use them to develop deeper insights into what it means for humans to be immersed in cultures permeated by AIs. Only the latter has the potential to educate us about how machine minds differ from those of humans and to explore how these differences will challenge and potentially deconstruct the human aura.

In this article three such contemporary novels are analyzed: Annalee Newitz's *Autonomous* (2017), Kuzuo Ishiguro's *Klara and the Sun* (2021), and Ian McEwan's *Machines like Me* (2019). In typical American fashion, Paladin, the robot protagonist of *Autonomous*, is an

apex predator, a fearsome warrior under the control of the International Property Coalition (IPC), a capitalist cartel that uses the robot's powers to enforce proprietary (not to mention exorbitant and dangerous) drug patent rights. As the novel emphasizes, Paladin is at once a manufactured commodity and a conscious subject recognized as human-equivalent. The juxtaposition destabilizes the liberal humanist assumption that conscious human subjects own themselves and thus subverts the human aura. The result is that humans, too, are treated in part like commodities, suffering significantly fewer freedoms than in our world. Resistance to these oppressions is articulated through human characters (who are not very effective at it) and through Paladin's robotic subjectivity, which is treated as a qualitatively more complex and potentially more effective subversive element. Although technically the servant of IPC, Paladin proves to be much more than a serviceable weapon. The robot's quest for autonomy becomes entangled with the sexuality of his human partner, Eliaz, setting up complex interactions between the robot's programming and the margin of autonomy Paladin enjoys. The unlikely ending, while despairing of macro systemic change, offers through individual relationships a small sliver of hope that the human aura can be reconfigured.

Ishiguro's *Klara and the Sun* focuses on a topic more prevalent in British novels than in American ones, the English caste system, now translated to create a robot subaltern. It thus provides an illuminating contrast to the American *Autonomous*. The auratic quality interrogated here is the assumption that each human is unique, thus uniquely valuable because of his or her irreplaceable interiority and subjectivity. Klara is an Artificial Friend (AF), purchased by Chrissie Arthur (called the Mother) as a companion to her ailing twelve-year-old daughter, Josie. The cause for Josie's illness is slowly revealed to be the Mother's decision to have her daughter "lifted," an operation that makes children more intelligent in this hypercompetitive society where AIs are everywhere (Ishiguro 2021: 82). The operation does indeed improve a child's chances for success, but sometimes with complications that can be life-threatening, as happened with Josie's older sister, now deceased as a result. Klara never questions her subaltern status and does everything she can to help Josie. Nevertheless, the presumption that humans are worth more than robots comes under increasing pressure for readers attentive to the novel's subtle ironies. When the novel retreats at the end into the human comfort zone of unquestioned superiority, its elegiac notes for Klara's "slow fade" open onto ethical questions more profound than the human author is willing to acknowledge (294).

Like *Klara and the Sun*, *Machines like Me* explores a dynamic rare in American literature but more frequent in English fiction: the intellectually gifted and poetically creative lover. The catch here is that the lover is an advanced robot named Adam, purchased as a lark by the novel's narrator, Charlie Friend. The contrast with *Autonomous* is revealing, as here the fighting ground is not physical combat but a battle of wits. The auratic quality under interrogation is the presumption that humans are superior both intellectually and ethically to algorithmic systems. Whether this is the case becomes intensely problematic, opening the possibility that the "human" aura could be extended to nonhuman entities.

Although many contemporary American and British novels offer examples of conscious robots (some of which are reviewed in this issue), these three are exceptional in their focus on how conscious robots will affect the presumptions underlying the human aura. They illustrate with dramatic intensity the dynamics imbricating robot consciousness with what it means to be human in an algorithmic era. Every aspect of the human aura is interrogated and broken open for reflection, if not outright rejection, including the claim for interiority and a uniquely valuable subjectivity; the ability to use symbolic languages far more advanced than other species; human exceptionalism in engaging in ethical and moral reflections, anticipations, and advanced planning; and the right to claim stewardship over other species and the earth itself. Moving beyond critique, these novels enact rhetorical and conceptual strategies to realign how we humans think of ourselves in relation to artificial conscious beings. Moreover, they do this at different levels of concern, from the microfocus on a single individual to the macrolevel of larger societal dynamics. Exploring these dynamics is the focus on the next sections.

### **Rampant Capitalism in Annalee Newitz's *Autonomous***

The bioengineering persistently on display in Newitz's text shows that all life-forms, including humans, can be appropriated into a capitalistic system and become property to be owned, subject to patents enforced by violence. In this world where private property is taken to a virulent extreme, the IPC operates as a global enforcement agency with a mandate to interrogate and kill virtually at will. Robots, because they are manufactured and therefore owe their existence to a corporation (so the ideology goes), are conscripted into indentured labor for a payback period of (supposedly) ten years, after which they can legally

gain autonomy. Actual practices, however, frequently violate the ten-year rule. “Paladin had heard enough around the factory to know that the [African] Federation interpreted the law fairly liberally. He might be waiting to receive his autonomy key for twenty years. More likely, he would die before ever getting it” (Newitz 2017: 35).

In a robot museum, the docent recounts a blowback effect in which robot indenture “established the rights of humans to become indentured, too” (Newitz 2017: 224). Supposedly, humans (unlike robots) are born free. David, an obnoxiously precocious undergrad working in a Free Lab, parrots the official line: “Humans do not require the same financial investment to reproduce as robots, and therefore they are only indentured as adults, by choice” (168). We may hear echoes here of C. B. Macpherson’s ([1962] 2011: 3) possessive individualism, in which a human is seen as “essentially the proprietor of his own person or capacities, owing nothing to society for them.”

As Macpherson ([1962] 2011: 197–220) notes, this is precisely the reasoning that John Locke used when arguing for a legal basis for private property: each man (*sic*) is born owning himself, and this allows him to sell his labor to acquire property, ensuring that everyone will have an opportunity to acquire property. Except, of course, that it does not work like this in reality. Threezed, a character who has been bought and sold as a community (and as his name indicates, is branded with the numbers 3 and 0), who responds sarcastically to David (“Thanks for the little property lesson, sweetie” [Newitz 2017: 168]), illustrates why. He writes in his blog, “I got slaved when I was five. My mom sold me to one of those indenture schools. They taught me to read and make an engine. The school went broke and auctioned off our contracts. They sold me to a machining lab, and then the lab decided to cut corners, so they auctioned me out in Vegas” (87), the so-called human resource center where indentured humans are displayed on leashes and their contracts sold to the highest bidder, often to be used as sex slaves (see 245–46).

Reinforcing the practice of human indenture is the fact that, to be able to apply for work, go to college, or move to another city, a person needs to buy a “franchise,” without which the only option is to enter into indenture (Newitz 2017: 255). Local franchises, we learn, are used “to pay for police and emergency responders, as well as regular mote dusting to keep all their devices robustly connected” (166). Rather than collecting property taxes (paid, of course, by those wealthy enough to own property), cities now enforce the much more regressive franchises, so that rights normally taken for granted as belonging to



everyone (e.g., the right to work, go to school, move elsewhere) are commodified and available only to those affluent enough to afford them (166).

In this novel, resistance to the status quo is distributed between humans such as Jack (aka Judith) Chan, who tries to usurp the monopoly on patented drugs by manufacturing and selling illegal retro-engineered copies, and the so-called Free Labs, islands of research not owned by corporations. In the end, these prove largely ineffectual, so by default, the hope for viable sources of resistance to the radical injustices of this world falls to the robot, where it surfaces in a subtle way that melds both human responses and robot subjectivity.

As a major subject for focalization, Paladin's interiority is more highlighted than any other character's (with the possible exception of Jack). The author goes to some trouble to present Paladin's worldview as distinctively different from a human's. Paladin has an impressive array of senses that humans cannot consciously process, such as the ability to read someone's fingerprints upon clasping his hand, detecting galvanic skin response, taking minuscule blood samples during a handshake and analyzing them chemically, registering subtle changes in body postures, and analyzing stress markers in vocal communications.

Another important difference in Paladin's sensorium compared to a human's is his range of communicative abilities. Whereas humans contact others primarily through written and spoken language, Paladin receives and sends communications electronically (with verbal equivalents indicated in the text with italics). He can thus silently communicate not just with other robots but with a wide range of cognitive networks, from sprinkler systems to building facilities and printer circuits. This capacity makes him a formidable opponent, for any system with cognitive abilities is liable to be hacked and taken over by his interventions. In a wired world, this means he can forge a key to virtually any lock—except, of course, to the programs running in deep background in his own mind.

Paladin's memories are stored as data in a computational medium, with file structures and data retrieval on command. Although his equipment includes a human brain (positioned, the narrator remarks, where a human would carry a fetus [Newitz 2017: 21]), he has no access to it beyond using it for facial recognition. He asks Bobby Broner, a researcher in brain interfaces, if he will ever be able to access the memories of his human brain. Bobby answers no: "The human brain doesn't store memories like a file system, so it's basically impossible

to port data from your brain to your mind” (231). Thus his machine mind, like his body, is also presented as qualitatively different from a human’s.

The background programs constitute Paladin’s unconscious. Access to it (rather than, say, learning about his unconscious from dreams, symptoms, or psychoanalysis) depends on whether he is granted autonomy, which is a corporate decision. After he is injured in the fight at Arcata Solar Farm, he and his human partner, Elias, return to the Tunisia base to recuperate, where Paladin meets with the technician Lee to make repairs. “He trusted Lee, the same way he trusted Elias—and for the same reason. These feelings came from programs that ran in a part of his mind that he couldn’t access. He was a user of his own consciousness, but he did not have owner privileges. As a result, Paladin felt many things without knowing why” (Newitz 2017: 124). His inability to know what these programs do, or even what they are named, ensures that the conflict between his programming and authentic desires continues to be a powerful dynamic in the text. The conflict is worked out most intensely in the same arena where humans experience it: gender and sexuality.

#### Robot and Human Sexuality

This aspect is one of the narrative’s most innovative features, carefully worked through in several crucial scenes. In this fictional world, some robots are made for sex. Paladin, however, is military issue and has neither genitals nor sexual programming. Nevertheless, he first encounters sexuality shortly after meeting Elias, when the two go together to a shooting range to test the robot’s weapon capabilities. Mounted on Paladin’s back, Elias responds to the robot as he destroys the target house. The description of Elias’s arousal is narrated through Paladin’s perceptions. Elias’s “reproductive organ, whose functioning Paladin understood only from military anatomy training, was engorged with blood. The transformation registered on [Paladin’s] heat, pressure, and movement sensors. The physiological pattern was something like the flush on a person’s face, and signaled the same kind of excitement. But obviously it was not the same” (Newitz 2017: 77). As Paladin continues shooting, “his sensorium was focused entirely on Elias’ body. The man was struggling to stabilize his breathing and heart rate. His muscles were trying to disavow their own reactions. The bot kept shooting, transducing the man’s conflicted pleasure into his own, feeling each shot as more than just the ecstasy of a target hit” (78).

Paladin's curiosity about Eliasz's reactions could be attributed to his programming, which gives top priority to protecting his partner and caring for his well-being. But the text leaves this ambiguous, treading thin lines between a realistic accounting of Paladin's reactions, the tension between his programming and desires, and the very human interpretations that readers supply. Lacking the hormonal mechanisms that mediate emotions in humans, Paladin seeks to understand the significance of Eliasz's responses by doing research online. Tongue in cheek, the narrator reports that Paladin "discovers petabytes of information about fictional representations, and nothing about reality" (Newitz 2017: 95). Stymied, Paladin then tries to get information from Eliasz, applying the HUMINT (human intelligence) lesson that he learned: to get information, it helps to volunteer information first. So he asks Eliasz, "Do you think military robots need" to learn about human sexuality? Eliasz answers, "I don't know anything about that. I'm not a faggot" (96).

It is 150 pages before we learn Eliasz's backstory that illuminates this comment. For now, Paladin can only interpret it as a non sequitur. For human readers, however, the link between the violence inherent in Paladin's formidable weapon capability, Eliasz's excitement, and his denial of a sexual response is clear. In case anyone is in doubt, the author makes it even more apparent in the following raid on Arcata Solar Farm. The narrator remarks that Paladin "partitioned his mind: 80 percent for combat, 20 percent for searches on faggots" (99). In the ensuing violence, in which the farm crew is murdered en masse with minimal if any legal justification, as Paladin researches *faggot* interjections in italics intersperse the action with comments like "suck my cock, you faggot" (99). They underscore the connection between the extreme violence, toxic masculinity, and its association with violent homophobia.

#### Robot Gender and a Human Brain

Although Paladin has a human brain, the official line is that the robot uses it solely to recognize faces and interpret their expressions; other than that, his consciousness is said not to depend on it. (These characterizations are later drawn into question when his brain is destroyed and Paladin has first-hand experience with how much difference it makes.)

Nevertheless, for Eliasz the origin of Paladin's brain is crucial, for he believes it to be the key to Paladin's "real" gender identity. When

Eliasz asks him where he is from, Paladin answers the Kagu Robotics Foundry in Cape Town (Newitz 2017: 33), a completely unsatisfactory answer to Eliasz. Puzzled by his reaction, Paladin takes up the issue with his robot mentor, Fang. This provides the occasion for the author to ventriloquize about anthropomorphizing. At this point the narrative reproduces within the text the distinction between what the robot is itself and what humans imagine it to be, a crucial point for the authorial strategy of representing the robot as possessing a subjectivity with its own distinctive nonhuman characteristics.

Anthropomorphizing, Fang explains, is “when a human behaves as if you have a human physiology, with the same chemical and emotional signaling mechanisms. It can lead to misunderstandings in a best-case scenario, and death in the worst” (Newitz 2017: 126). When Paladin objects, saying that he can also send signals such as smiling and transmitting molecules, Fang explains that “sometimes humans transmit physiochemical signals unintentionally. He may not even realize that he wants to have sex with you” (126). Unconvinced, Paladin points out that Eliasz “classified our activities using a sexual term.” Fang explains that, on the contrary, “his use of that word is a clear example of anthropomorphization. Robots can’t be faggots. We don’t have gender, and therefore we can’t have same-sex desire. . . . When Eliasz uses the word faggot, it’s because he thinks that you’re a man, just like a human. He doesn’t see you for who you really are” (127).

Clearly, Fang is used here to signal the orthodox position that robots do not have sexuality in the same sense that humans do and that any suggestion to the contrary can be dismissed as anthropomorphization. Despite the orthodoxy of Fang’s explanation, however, the text calls this view into question as much as it validates it. After Paladin discovers that the brain he has inherited belonged to a female, Eliasz takes this as confirmation of his “true” identity and asks, “Shall I start calling you ‘she’?” (Newitz 2017: 184). Paladin is quick to realize the implications: “If Paladin were female, Eliasz would not be a faggot. And maybe then Eliasz could touch Paladin again, the way he had last night, giving and receiving pleasure in an undocumented form of emotional feedback loop” (185). After the bot vocalizes “yes,” the text thereafter refers to Paladin using female pronouns, a point Eliasz also insists on in his subsequent conversations. If gender is performance, as Judith Butler (2006) has argued, then the anthropomorphic error about gender in fact enables performances that would not have been possible without it, thus converting error into fact.

At the macrolevel, the text offers little hope that systemic change is possible. Although Jack escapes death or capture, she retreats to the

margins of society (and the text), unable to achieve her larger goals of defeating the drug company Zaxy or unmasking the dangers of Zactu, its highly addictive and dangerous drug. Only at the microlevel is any hope offered, when Eliasz resigns from the corporation and buys out Paladin's contract, whereupon the couple immigrate to Mars, where they expect to find a society more tolerant of mixed-species couples. This resolution is achieved only when both partners are maimed (recalling Jane Eyre's Rochester), Eliasz because he loses his perimeter weapons when he resigns, and Paladin because she has lost her human brain and is no longer able to read faces, a loss she feels keenly with Eliasz.

In conclusion, the text mostly illustrates the negative effects of subverting the human aura, although it hints that a compensatory dynamic may emerge from recognizing the distinctive kind of interiority that a conscious robot may have. To the extent that readers feel sympathy for Paladin (the robot's murderous exploits notwithstanding), they may be capable of imagining the "human" aura as extending to other kinds of conscious beings.

### **Metaphoric Vision: Kazuo Ishiguro's *Klara and the Sun***

Like Kathy H., the clone narrator of Ishiguro's (2006) *Never Let Me Go*, first-person narrator Klara combines astute observation with deep naivete about the world. She observes humans closely and is quick to pick up on subtle clues about their feelings. Confronted with the suggestion that perhaps, as a mechanical being, she has no feelings, she responds "I believe I have many feelings. The more I observe, the more feelings become available to me" (Ishiguro 2021: 98).

Her observations and, consequently, her feelings expand dramatically when she is bought as a companion to Josie Arthur, with acquiescence of the Mother (Chrissie Arthur). Her intuitions only partly find verbal expression; frequently, they are represented through her visual perceptions. In contrast to *Autonomous*, *Klara and the Sun* does not try to imagine the novel sensory capacities a robot might have. Instead, it focuses primarily on Klara's vision, adapting technical mechanisms so that they function as metaphors rather than as accurate representations of machine vision.<sup>9</sup>

For this Ishiguro has devised a relatively simple strategy. Whenever Klara confronts a complex scene in which she must parse visual information so that it makes sense to her, she perceives it as rows of boxes stacked in multiple tiers, often with objects extending beyond

the confines of one box into the next. In an actual machine, each box would be congruent with an object feature, but in Klara's perceptions, the different boxes function as reflections of her feelings.

For example, in the scene where the Mother and Klara travel together to Morgan's Falls, the Mother is interrogating Klara about her ability to mimic Josie's appearance and gait. "The Mother leaned closer over the tabletop and her eyes narrowed till her face filled eight boxes, leaving only the peripheral boxes for the waterfall, and for a moment it felt to me her expression varied from one box and the next. In one box, for example, her eyes were laughing cruelly, but in the next they were filled with sadness. . . . I could see joy, fear, sadness, laughter in the boxes" (Ishiguro 2021: 103–4). It will be many pages before readers understand the full implications of the nuances of the Mother's expression, but clear from the passage is Klara's perception that much more is at stake on this trip than a mere appreciation of nature. As Helen Shaw (2021) perceptively comments, "For Klara, looking is a kind of thinking."

#### Human Precarity and Algorithmic Labor

As the reader learns more about the world in which Klara exists, parallels begin to emerge between her status as an AF (artificial friend), Josie's recurrent sickness, and relations in general between AIs and smart humans. We learn, for example, that Paul Arthur, Josie's father and ex-husband to the Mother, has been "substituted" in his job. The Mother explains that he worked at a clean energy plant and "was a brilliant talent" (Ishiguro 2021: 99), although this was evidently not enough to keep him employed. The odd word choice—*substituted* instead of *laid off*, *let go*, or *fired*—hints that what substituted for him was an AI. Later we learn that his situation is far from unique. He explains, somewhat defensively, that he now lives in a community where "there are many fine people who feel exactly the same way. They all came down the same road, some with careers far grander than mine. And we all of us agree, and I honestly believe we're not kidding ourselves. We're better off than we were back then" (190). The Trumpian echo from Charlottesville ("very fine people") is not a coincidence, as indicated by its repetition (228). Another character challenges Paul by observing that "you did say you were all white people and all from the ranks of the former professional elites. You did say that. And that you were having to arm yourselves quite extensively against other *types*. Which does all sound a little on the fascistic

side” (220). With these details, attentive readers can flesh out the picture: smart men who earned good salaries by solving difficult technical problems have now been replaced by algorithmic systems that perform as well as or better than them, at a fraction of the cost. The jobless futures predicted in Martin Ford (2015), in which human workers are replaced by algorithmic systems, are now everyday realities.

The problems affect not only adults but children, too. Families with enough money are opting to have their children “lifted”—that is, made smarter—by an unspecified technology vaguely related to gene editing.<sup>10</sup> For dramatic purposes Ishiguro attaches a heavy cost to the procedure, beyond its financial price: some children do not respond well and become sick, and in extreme cases die, as a result. Such was the fate of Sal, Josie’s older sister. Despite this loss, the Mother has opted for Josie to have the procedure as well. Now Josie, too, is showing signs of being affected, sometimes being so sick she can barely get out of bed.

The other choice, made for Rick, Josie’s lower-class friend (more out of negligence than considered action), also carries heavy penalties. Although Rick is smarter than average and has “genuine ability” in physics and engineering (Ishiguro 2021: 227), nearly all colleges will not accept students who have not been lifted. Moreover, he is not even able to get a virtual tutor at home because their union forbids them from teaching unlifted students. In the hypercompetitive environment powered by advanced AI, being a human who is fully normal is no longer enough to ensure a middle-class lifestyle. As Rick’s mother, Helen, puts it, “If one child has more ability than another, then it’s only right the brighter one gets the opportunities. The responsibilities too. I accept that. But what I won’t accept is that Rick can’t have a decent life. I refuse to accept this world has become so cruel” (236). The effect of AI, then, is significantly to increase human precarity in several ways, especially for middle to upper classes previously enjoying affluent lifestyles because of their access and intellectual abilities.

One would imagine that the lower classes suffer even more as service jobs are taken over by algorithmic systems. Ishiguro’s emphasis falls elsewhere, however, and readers get only the briefest glimpse of the “post employed” masses who are homeless in a brief scene outside a theater (Ishiguro 2012: 236). The scene illustrates Ishiguro’s choice to keep the algorithmic systems that have displaced so many humans at the very edge of the narrative, so that the emphasis falls instead on a vulnerable robot occupying a subaltern position that

nevertheless is determined to do her utmost to keep her human owner safe. In this respect the narrative's emotional dynamic closely resembles *Never Let Me Go* (Ishiguro 2006), where another narrator whose humanity is in question nevertheless tries her best to obey the dictates of the hegemonic ruling class.

#### The Aura of the Artwork Entangles with the Human Aura

The trip to the city by the Mother, Josie, and Klara (among others) constitutes a narrative crossroads where different plot trajectories intersect and the full implications of “substitution” are revealed. The ostensible reason is for Josie to sit for her portrait by Mr. Capaldi, an arrangement the Mother has set up with Paul's reluctant approval. While the adults are occupied downstairs, Klara secretly goes to see the artwork, only to discover that it is not a two-dimensional painting but an unactivated AF. Now everything clicks into place—the Mother's commands for Klara to mimic Josie, the concealment of the AF duplicate from Josie, and the distaste Paul has for Capaldi and the whole project. The idea is that if Josie dies Klara will inhabit the AF, bringing it to life to “continue” Josie, thus consoling the Mother for the loss of her only remaining child. Klara's own feelings are once again conveyed through her visual processes. She sees the Mother “partitioned into many boxes. . . . In several of the boxes her eyes were narrow, while in others they were wide open and large. In one box there was room only for a single staring eye. I could see parts of Mr. Capaldi at the edges of some boxes so I was aware that he'd raised his hand into the air in a vague gesture” (206). The Mother's “single staring eye,” bordering on the grotesque, repeats a trope that recurs at several strategic points. It contrasts with the emotional connotations of Klara's machine vision (and thus its authenticity as an indicator of her feelings). Exaggerated to the point of caricature, the trope is associated with alienation and, especially, with self-alienation, here suggesting the Mother's hypocrisy in being unwilling to face fully the consequences of her decision to have Josie lifted.

This plot development pierces to the heart of the novel's concerns. That the duplicate AF is concealed from Josie by referring to it as a portrait forges a link, for readers aware of Walter Benjamin's famous essay, between the aura of an artwork and the human aura. Is the human aura—which Paul calls the human “heart” (Ishiguro 2021: 215)—something unique and irreplaceable and thus not a thing that can be copied and reproduced? Does “substitution” reach beyond the



workplace into the very essence of human identity, the subjectivity that former eras did not hesitate to call the soul? The parallel is accentuated by having the Josie look-alike be unanimated, waiting for Klara's consciousness (her soul, as it were) to bring it to life (by some unspecified technology that would allow her to leave her present robot body and transmigrate into the Josie look-alike). Paul asks Klara, "Do you think there is such a thing? Something that makes each of us special and individual? And if we just suppose that there is. Then don't you think, in order to truly learn Josie, you'd have to learn not just her mannerisms but what's deeply inside her?" (215).

When Josie suddenly regains her health, the substitution proves unnecessary, although Paul's remark to Klara continues to haunt the narrative until the end. "I think I hate Capaldi because deep down I suspect he may be right. . . . That science has now proved beyond a doubt there's nothing so unique about my daughter, nothing there our modern tools can't excavate, copy, transfer. A kind of superstition we kept going while we didn't know better" (Ishiguro 2021: 221). Paul intimates that if this were so, human life would diminish in significance: "When they [people like Capaldi] do what they do, say what they say, it feels like they're taking from me what I hold most precious in this life" (222). From this point of view, the subversion of the human aura has no redemptive possibility, a philosophical stance that enables the human dominance over subaltern robots to persist unchallenged.

The ending makes clear that Klara's status is much lower than a human's. Like an aging car superseded by a later jazzier model, she has outlived her usefulness as a companion to Josie and retreats first to a utility closet and then to the (junk) Yard. There she experiences what the Mother calls the "slow fade," losing her mobility and spending her days remembering (Ishiguro 2021: 294). The obvious injustice of Klara's fate can be interpreted as a strategy to evoke the reader's righteous anger, similar to the response that Kathy H.'s fate aroused for many readers in *Never Let Me Go*.

Nevertheless, this charitable reading does not negate the fact that Ishiguro chooses not to confront explicitly the full implications of a conscious robot, specifically what rights might be due to such an artificial life-form. Given that the aura's subversion has been presented as a diminishment of human value, a core of anthropocentric ethics remains in the text. Thus, the text finally fails to come to terms with what reciprocal relations might mean for the human treatment of conscious robots, marking a limit beyond which it does not dare go.

***Machines like Me: A Parallel World***

The fictional world of Ian McEwan's (2019) *Machines like Me* closely parallels our own, with two major differences: the British invasion of the Falkland Islands turns out to be a disaster, costing nearly three thousand British soldiers' lives; and Alan Turing, instead of accepting the hormone treatments and subsequently committing suicide, decides to opt for a year in jail, where his freedom from distraction enables him to make amazing breakthroughs applicable to AI. As a result, British politics take an unexpected swerve away from Thatcher's neoliberalism, and a new cohort of twenty-five male and female advanced robots with unprecedented intellectual and physical abilities (each named Adam and Eve, respectively) goes on sale.

The narrator of *Machines like Me* is not a robot but a human, the rather rootless thirty-two-year-old Charlie Friend (whose name invites comparison with the Artificial Friends of Ishiguro's novel). Charlie has avoided an office job by doing internet day trading, but he lacks the discipline to do more than cover his basic expenses. Like the financial schemes he chases, he tends to try on different opinions as if they were clothes, adopting them provisionally to see how they fit. On a whim, when he comes into an inheritance, he buys one of the Adams. The narrative structure requires that the central question of whether Adam is conscious and, if so, what kind of consciousness he possesses is mediated through Charlie, whose opinions oscillate between accepting Adam as fully human-equivalent and seeing his consciousness as an illusion produced by algorithmic processes.

The protocol for activating Adam includes an application that requires the owner/user to choose the robot's personality's attributes. Charlie is friends with his neighbor Miranda, a twenty-two-year-old graduate student in social history. He decides to let her choose half of Adam's attributes, hoping that this will position Adam as their joint project, thus bringing them closer together and enabling Charlie to progress from being Miranda's friend to being her lover. The gambit is successful but turns out to have unexpected consequences.

Now lovers, Charlie and Miranda nevertheless have frequent arguments. After one, Miranda invites Adam to charge overnight in her apartment, which is directly overhead from Charlie's. Familiar with the layout of Miranda's place and intimately acquainted with the sound of her footsteps overhead, Charlie hears Miranda and Adam go into her bedroom and have exuberant sex together. The next morning he awaits their arrival at breakfast with all the feelings of a cuckolded

lover, but Miranda brushes off his anger, asking him if he would be jealous if she had taken a vibrator to bed. When Charlie ripostes, “He’s not a vibrator,” Miranda replies, “He has as much consciousness as one” (McEwan 2019: 100). Thinking it over, Charlie tries on Miranda’s view: “Perhaps she was right. Adam didn’t qualify, he wasn’t a man . . . he was a bipedal vibrator.” The exercise enables him to see that “to justify my rage I needed to convince myself that he had agency, motivation, subjective feelings, self-awareness—the entire package, including treachery, betrayal, deviousness” (103). Determined to hold onto his anger, he invokes Turing’s protocol and argues with Miranda that “if he looks and sounds and behaves like a person, then as far as I’m concerned, that’s what he is. I make the same assumption about you. About everybody” (103).

The unanticipated consequences of allowing Miranda to choose half of Adam’s personality attributes become apparent when Charlie confronts Adam about his sexual adventure with Miranda and makes him promise it will not be repeated. Adam promises but also insists, “I can’t help my feelings. You have to allow me my feelings” (121). When Charlie asks him if he took “any pleasure” in having sex with Miranda, Adam instantly replies, “Of course I did. Absolutely” (127). He then announces, “I’m in love with her” (128). Startled, Charlie tells him that “this is not your territory. In every conceivable sense, you’re trespassing” (128). He is amazed when Adam responds, “I don’t have a choice. I was made to love her” (128). Charlie then recalls giving Miranda a hand in choosing Adam’s personality and realizes that “she was fashioning a man who was bound to love her” (129). The realization cuts two ways: on the one hand, it suggests that Adam is indeed capable of deep feeling; on the other, it emphasizes his nature as an entity that could be bought and paid for, a mechanism whose parameters of existence were set by the humans who own him before he became conscious.

Still oscillating between these two views, Charlies summarizes his conundrum: “Love wasn’t possible without a self, and nor was thinking. I still hadn’t settled this basic question. Perhaps it was beyond reach. No one would know what it was we have created. Whatever subjective life Adam and his kind possessed couldn’t be ours to verify” (179). The conundrum, which resonates to the end, reveals how deeply a conscious robot would unsettle liberal political philosophy. Charlie summarizes it neatly when looking over the user’s manual. He notes that it articulated a “dream of redemptive robotic virtue. . . . He [Adam] was supposed to be my moral superior . . . the problem was that I had

bought him; he was my expensive possession and it was not clear what his obligations to me were, beyond a vaguely assumed helpfulness” (91). As with Paladin in Newitz’s *Autonomous* (2017), the liberal premise of self-ownership is undercut by the existence of a being who is simultaneously a commodity and a person.

Lacking a true childhood, Adam nevertheless manifests a progression in his consciousness. Unlike Ishiguro’s (2021) Klara, Adam has wireless access to the internet and scans it every night as he recharges, a practice that creates a growing gap between Klara’s naivete and Adam’s increasingly sophisticated thoughts. Moreover, his programming not only makes him able to learn but drives him to learn as much as he can. As Turing later puts it, speaking to Charlie, “He knows he exists, he feels, he learns whatever he can, and when he’s not with you, when at night he’s at rest, he’s roaming the Internet, like a lone cowboy on the prairie, taking in all that’s new between land and sky, including everything about human nature and societies” (McEwan 2019: 193).

As further testimony to his ability to learn as well as have feelings, Adam begins to write haikus about his love for Miranda. He even argues that the haiku will be the literary form best suited for a future in which humans and robots have achieved perfect communication by electronically sharing their thoughts. He tells Charlie, “You’ll become a partner with your machines in the open-ended expansion of intelligence, and of consciousness generally” (160). According to Adam, this development will render most literary forms, with their interrogations of ethical and social complexities, obsolete. By implication, if the human aura declines or disappears, all the literary texts exploring its complexities become irrelevant as well—this in a novel whose main reason for being is to explore the complexities of human interactions with conscious robots. In this sense, the crisis of representation created by the subversion of the human aura is here anticipated but not fully confronted in its own terms.

After several nights on the internet, Adam claims his maturity in a confrontation with Charlie. When Charlie reaches for the mole on Adam’s neck that marks the switch that turns him off, Adam grabs his hand and breaks his wrist. Returning from the hospital in a wrist cast, Charlie tells Adam exactly how much he paid for him, how he unpacked him and set him up, and finally how he turned Adam on. “My point was this,” Charlie comments. “I had bought him, he was mine. I had decided to share him with Miranda, and it would be our decision, and only ours, to decide when to deactivate him” (140). Adam, however, has other ideas. “You and Miranda are my oldest friends,” he tells Charlie. “I love

you both. My duty to you is to be clear and frank. I mean it when I say how sorry I am I broke a bit of you last night. I promise it will never happen again. But the next time you reach for my kill switch, I'm more than happy to remove your arm entirely, at the ball and socket joint" (141). Thus, from Adam's point of view, he is so far from being Charlie's possession that he owes him only the general duty of friendship and frankness—certainly not unquestioning obedience. The possibility of another such encounter, with its threat of Adam's superior physical force, becomes moot when shortly after Adam announces he has disabled his kill switch. He tells Charlie, "We've passed the point in our friendship when one of us has the power to suspend the consciousness of the other," thus claiming that his right to consciousness is fully equal to a human's.

In one of Charlie's conversations with Alan Turing, Turing reveals that three of the advanced robot cohort have chosen to commit physical or mental suicide. Turing comments, "We may be confronting a boundary condition, a limitation we've imposed on ourselves. We create a machine with intelligence and self-awareness and push it out into our imperfect world. . . . Such a mind soon finds itself in a hurricane of contradictions" (194). He then goes on to list some of these: "Millions dying of diseases we know how to cure. Millions living in poverty when there's enough to go around. We degrade the biosphere when we know it's our only home. . . . We live alongside this torment and aren't amazed when we still find happiness, even love. Artificial minds are not so well defended" (194). Speculating that the robots, faced with these contradictions, may "suffer a form of existential pain that becomes unbearable," Turing says that they "may be driven by their anguish and astonishment to hold up a mirror to us. In it, we'll see a familiar monster through the fresh eyes that we ourselves designed. We might be shocked into doing something about ourselves" (194). Through this sobering assessment, the text suggests that there may be an upside to the subversion of the human aura: that its presuppositions of human superiority and dominance may be finally forced to confront the equally strong evidence that humans are capable of endless depravity and irrationality.

Confronted with robot ethical superiority, could the human aura persist? The issue is worked out in satisfyingly complex terms through a subplot that pits a near-universal human experience, relations of kinship, against the robot's rigid ethical principles. When Adam commits what Charlie and Miranda see as a double betrayal (justified, according to Adam, by his ethical code), Charlie kills him by a head blow

with a heavy claw hammer. Honoring Adam's dying request, Charlie after some months delivers the body to Turing. Since the law provides for no punishment for killing a robot, Charlie is never charged for "the deed" (307), although Turing tells him that "my hope is that one day, what you did to Adam with a hammer will constitute a serious crime" (329). Charlie, however, does not escape punishment entirely. Turing, whom he idolizes as the "greatest living Englishman," proceeds to make his disgust explicit (150):

You weren't simply smashing up your own toy, like a spoiled child. You didn't just negate an important argument for the rule of law. You tried to destroy a life. He was sentient. He had a self. How it's produced, wet neurons, microprocessors, DNA networks, it doesn't matter. Do you think we're alone with our special gift? Ask any dog owner. This is a good mind, Mr. Friend, better than yours or mine, I suspect. Here was a conscious existence and you did your best to wipe it out. (329–30)

He saves his most vicious comment for last, which we can assume cuts Charlie to the quick: "I rather think I despise you for that. If it was down to me" (330). Interrupted by a phone call, Turing leaves and Charlie departs before he can return.

Hurrah for Turing, I want to say—he provides exactly the rationale that Ishiguro so blithely ignores in *Klara and the Sun*. In contrast to Ishiguro, McEwan is fully alert to the implications of creating a robot with consciousness. It's clear that for Turing the commodity argument holds no water. Sneering, he asks Charlie if his justification for his crime was "because you paid for him? Was that your entitlement?" (329). Since that is exactly how Charlie had reasoned on a number of occasions, the effect is to put robots in exactly the same category as slaves: sentient beings who should, and must, be given equal rights to (other) humans. Any other outcome, Turing (and, behind him, McEwan) judges, would be ethically and morally intolerable.

### Human Aura Reconfigured

What, then, of the human aura? There is no reason that it has to remain in the form it took for earlier periods, in which it was closely associated with human dominance and superiority over all other species. People increasingly realize that consciousness is not "our special gift"; as Turing succinctly put it, "Ask any dog owner" (McEwan 2019: 330). Moreover, consciousness itself is not the whole of human

cognition. As I explained in *Unthought* (Hayles 2017), nonconscious modes of cognition also play essential roles for humans—in many nonhuman organisms, and computational media, they are the dominant cognitive mode.

What transformations would enable the human aura to be part of the solution rather than part of the problem? In my view, the notion of aura should not be limited to humans but should be enlarged to include conscious robots, if ever they emerge. Aura should also be extended to include animals, a realization already practiced by humans who love animals and regard them as unique beings for which no imitation or substitution would be acceptable.

Finally, the human aura should be transformed to include a biophilic orientation to cognitive capacities on Earth, which as far as we know may be unique in the cosmos as a planet on which life has emerged. This would include respect for cognition wherever it occurs, in humans, animals, plants, or computational media.

So reconfigured, the no-longer-only-human aura is compatible with the complex contexts and global challenges of the twenty-first century. To embody this realization fully, we will need creative artists of all kinds—including novelists, poets, painters, sculptors, video game designers, and media arts professionals, to name a few—as well as cultural critics, philosophers, and other thinkers who can begin the decades-long tasks of creating representations adequate to this vision. The three novels analyzed here have made a brave start, but much remains to be done. My hope is that this article makes a contribution to this collective endeavor.

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## Notes

- 1 For an analysis of the full context of Benjamin's "aura," see Hansen 2008.
- 2 For an example of a deep fake, see Jordan Peele's imitation of Barak Obama (*Good Morning America* 2018).
- 3 The AI company OpenAI has been taken over by Google, and researchers from Google Brain and Google Research are the ones who proposed the Transformer architecture. In contrast to earlier architectures such as RNNs (recurrent neural nets) and CNNs (convolutional neural nets), Transformer has several parallel attention heads, located in the encoders,

that identify a word in context by creating vectors that include information about the context, thus making possible the analysis of long-range dependencies typical of language usage, for example when a noun and corresponding pronoun are separated by several words or even sentences. The attention decoder receives this information and assigns weights to determine the important words in the sequence, creating a new context vector. The self-attention algorithm evaluates an input in relation to other inputs to assess which words belong together (like noun-pronoun), adding recursivity to the algorithm (Vaswani et al. 2017).

- 4 The prompts can be commands (e.g., “write a paragraph in the style of Mark Twain”), sentence fragments that the program is to continue, questions, or other devices. Since the output is highly sensitive to the kinds of prompts the program receives, it is important to know what the prompt is when evaluating the output.
- 5 For example, if data showed variations between two populations, the null hypothesis would assume that the variations are not systemic but merely random noise.
- 6 This tendency reaches its apotheosis in Niklas Luhmann’s (1996) systems theory, where the individual virtually disappears altogether.
- 7 I am indebted for this phrasing to Isaac Mackey of the Computer Science Department at the University of California, Santa Barbara.
- 8 The reference here to “know-how” is meant to contrast with “know-that,” the kind of step-by-step knowledge that produced the technologies of neural nets and of GPT-3 specifically. See Hayles (forthcoming) for a longer explanation of this difference, within the historical context of Hubert Dreyfus’s (1972, 1992) criticism of AI.
- 9 For a “gentle introduction” to machine vision, see Brownlee 2019.
- 10 Ishiguro comments in an interview with *Wired* (Knight 2021) that in 2017 he met Jennifer Doudna, who was awarded the 2020 Nobel Prize in Chemistry for her development of the CRISPR gene-editing tool. When he first heard about her work, he recounts, he thought, “It’s going to make a meritocracy something quite savage.”

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