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ECOCRITICISM AND CRITICAL AI STUDIES: ENVIRONMENTAL IMAGINARIES IN KAZUO ISHIGURO'S KLARA AND THE SUN

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Abstract
In Klara and the Sun (2021), Kazuo Ishiguro tells a story in the near future in which every aspect of existence is technologically enhanced, and in which there are some subtle signs of ecological damage, thanks to a solar-powered Artificial Friend storytelling partner. The novel has been studied through two lenses: ecocriticism, which examines how it reflects on the relationship between AI and the material and ecological world, and Critical AI Studies, which analyzes how it critiques techno-solutionism and anthropocentrism. Using a dual theoretical framework, the study synergises an interpretivist philosophy and constructivist-qualitative paradigm, using the work of Kate Crawford's Atlas of AI and the work of Timothy Morton's dark ecology as a theoretical grounding. Documentary and library-based data collection methods were used to gather data from the entire novel (5 parts, 303 pages) and 20 secondary academic sources. Thematic coding was the main analysis method used, with fifteen to eighteen excerpts being identified in the analysis process of purposive sampling from an estimated forty instances that were thematically relevant. Results indicate that the novel is a discourse of the materialization of the AI itself, through the process of commodification, dependence on energy and obsolescence, and its ecological imagery, which combines pollution and solar generation in an "inescapable mesh" that defies the binary of the redemption of nature/technology. The results validate Ishiguro's text as a work that undermines techno-solutionism and anthropocentrism, and validate the ability of literature to envision AI futures that are ecologically mindful.

Introduction
Klara and the Sun (2021) figures out there is a particular place for the artificial friend (AF) in contemporary speculative fiction, telling a near-future world from the perspective of Klara, a solar-powered AF designed to accompany a genetically "lifted" adolescent named Josie. The novel's setting of a gradual degradation of the environment, an advancement of technology, and a rise of social polarization are experienced exclusively through Klara's nonhuman perceptual means. Klara's "nourishment" comes from sunlight, and her

epistemology is idiosyncratic and quasi-devotional, which makes her a fruitful subject for critical dialogue with fields of ecocriticism and Critical AI Studies, which until recently have been on parallel tracks (Raley & Rhee, 2023).

When taken in a broad sense, 'Ecocriticism' has grown to focus more and more on the study of the interplay between literature and the physical environment, and has increasingly addressed questions of technology, extraction and the more-than-human world (Lupton, 2026). An important thought in this regard comes from Timothy Morton's "dark ecology," which advocates for rejection of the romanticized, pastoral ideal of "Nature" as an unspoiled backdrop that stands apart from humans and their systems in favour of an uncomfortable, intimate perception of a "mesh" (Morton, 2016) of organisms, technologies, and toxic afterlives. This lens reads Klara's love affair with the Sun as not an innocent longing for a past golden age of pastoral living, but instead a dark ecology in which sun rays, pollution emitted by the 'Cootings Machine' and synthetic brain power are all interdependent without any obvious division between nature and culture.

At the same time, Critical AI Studies has become a coalition of people that challenges the material, political, and ethical dimensions of the infrastructure of AI, not just confined to technical or celebratory discussions of machine learning (Raley & Rhee, 2023). Kate Crawford's Atlas of AI (2021) is an essential read for this shift and upholds that AI systems are not abstract or computational in nature, but rather embedded in extractive supply chains, in mineral mining, in labor exploitation, in planetary-scale energy consumption. Crawford's argument that AI is not artificial nor intelligent, but rather an embodied, resource-intensive infrastructure (2021) offers a compelling alternative counter-discourse to techno-solutionist discussions of AI and sustainability (Lupton, 2026). More recently, this criticism has taken a specific turn on the ecological dangers associated with generative and large-scale AI systems, both in terms of carbon footprint and the production of e-waste (Berthelot et al., 2024 as cited in the assessment of the ecological impact of AI; Luccioni et al., 2023 as cited in the same).

In the realm of literary studies, Klara and the Sun has already garnered a lot of critical interest, but not always in an explicitly ecocritical-and-AI-critical synthesis. The novel has been read from the Foucauldian perspective and through the lens of surveillance (and Studies in the Novel analysis of gaze and technological possibility), Kristevan intertextuality and panopticism in relation to nature and the Anthropocene, ecofeminist posthumanism and the 'other' of humans/non-humans, and as part of a comparative 'ustopian' reading of the novel alongside Emily St. John Mandel's Station Eleven. Others insert it into a discussion about posthumanism and altermodernist aesthetics, in the vein of Rosi Braidotti's description of the "defamiliarizing" power of a non-human narrative point of view. Together, these studies have shown that Klara is a place where nature, technology, and ethics converge, but have not yet fully interwoven Crawford's material critique of AI infrastructure and Morton's dark ecology as a theoretical tool.

It is an important gap because Klara and the Sun does not just present an artificial intelligence character in an environment that has been degraded; it structurally weaves all of this together in relation to Klara's cognitive and ethical growth and solar energy, air pollution, and the extractive economy which creates AFs as commodities. This novel thus undermines techno-solutionism, the belief that technological advancement and innovation will solve ecological problems, as well as anthropocentric hierarchies that privilege human cognition over other modes of sentience, including solar, mechanical, and more-than-human.

Research Objectives

1. To explore the material and ecological entanglements of AI technology in the case of Klara and the Sun.
2. To assess the novel's critique of techno-solutionism and anthropocentrism in the light of Klara's more-than-human perspective.

Research Questions

1. What are the material and ecological entanglements of AI like in the novel?

2. In what way does Klara's point of view challenge techno-solutionism and anthropocentrism?

Limitations

This study focuses only on the close textual analysis of Klara and the Sun, not on the empirical or reader response data. It does not discuss any of Ishiguro's other novels, other than its theme of artificial intelligence, or the practices of the AI industry more broadly.

Significance of the Study

This work joins nascent dialogues between Critical AI Studies and ecocriticism that propose to see speculative fiction as a space for imagining ecologically-scarce and materially accountable AI futures beyond techno-solutionist optimism.

Literature Review

Since the novel's release, scholarship on Klara and the Sun (Ishiguro, 2021) has grown quite extensive, developing into three general areas: posthumanist ethics, surveillance and biopolitics, and comparative dystopian/utopian approaches. But the material ecology of artificial intelligence, as theorized by Critical AI Studies, is relatively underdeveloped and thus opens up the door for this study.

Posthumanism, Anthropocentrism, and AI Ethics

A large body of recent scholarship interprets Klara's consciousness of herself as a narrator as an attempt to subvert anthropocentric notions of emotion, morality, and subjectivity. Huang (2025) opposes the conventional belief in human ethical superiority by suggesting more balanced relations between humans and machines based on posthumanist theory. Likewise, Mabrouk (2025) places the novel in the discussions about posthuman rights and justice, and deconstructs the servitude of robots and the moral status of artificial humans with reference to Haraway, Braidotti, and Hayles. Ajeesh and Rukmini (2022) build upon this discussion by noting Ishiguro's move away from the archetypical robot, often sexualised, and the notion of Klara as a nonhuman consciousness that tells the story. The readings as a whole build on Haraway's (1991) posthumanist language of the "cyborg" and Braidotti's (2013) notion of the "posthuman," which is theorized by the second and third. This collection of scholarship is ethically rich but is often focused on the philosophy or emotion of AI, instead of on how it is deeply embedded in the materiality of its infrastructure.

Surveillance, Biopolitics, and the Gaze

A second thread deconstructs the Foucauldian and biopolitical aspects of the novel's power structures. Interpreted in terms of Agamben's biopolitics, the disciplinary systems conveyed in the text work on both sides of Klara, both disciplining her and opening up space for another kind of possibility, as noted by related gaze-theory scholarship, which applies the notions of "transgressed boundaries" (Haraway, 1991). These studies shed light on social stratification around AFs, but tend to be more human power-oriented than ecologically entangled.

Ecocritical and Comparative Readings

A few but increasing studies take an ecocritical stance towards the novel. Comparative work places Klara and the Sun next to Mandel's Station Eleven, positioning them in a genre it calls "ustopia" as a space where anxiety is voiced over the power technology has to irreparably harm the environment, and where attitudes toward science differ greatly. Ungureanu and Maleeva (2023) also analyze the novel's “altermodernist” style, arguing that Klara's spiritual devotion to the Sun brings the worlds of human and nonhuman beings together and points towards an ethics of the treatment of AI. The readings here nod towards ecological themes (in particular, the Sun is being treated as a quasi-sacred energy source), but do not make much use of Morton's (2007, 2016) darker ecology as an ongoing theory. Morton's emphasis on the "mesh"—an unassailable overlap of living organisms, toxins, and technologies that cannot be separated by any tidy nature/culture dichotomy—provides a more radical approach than the pastoral and/or redemptive readings of solar images that now dominate the literature. Likewise, the ability of literature to reveal anthropocentric exploitation of the nonhuman world is highlighted in the foundational ecocritical theory (Buell, 2005;

Glotfelty & Fromm, 1996); this is an area that has only been partially explored in Ishiguro's text.

Critical AI Studies and the Materiality of AI

In other fields than literature, Critical AI Studies' criticism of AI's material and planetary costs is now quite extensive. Crawford (2021) is interested in rephrasing AI as an extractive industry that relies on energy, mineral mining, and labour. This field is a formalization of Raley and Rhee (2023), who claim that it draws on the work of the environmental humanities, new materialism, and feminist theory. These material criticisms are supported by empirical evidence, such as the development of techniques for quantifying the carbon footprint of large language models (Luccioni et al., 2023), methodologies for life-cycle assessments of generative AI systems (Berthelot et al., 2024), and the synthesis of past sustainability assessment research in the field (Delort et al., 2023). Complementary scholarship goes beyond the human, and Bossert and Hagendorff (2021) and Coghlan and Parker (2023) suggest that the ethical frameworks used for AI often fail to consider the ecological and animal welfare impacts of AI systems. Lupton (2026) reviews and combines this body of knowledge, urging critical humanities approaches to the environmental effects of AI. Despite this strong interdisciplinary grounding, these material critiques of AI have not often been directly engaged with literary depictions of AI, resulting in a significant disconnect between the critique of AI technically and the analysis of it in literature.

Synthesis and Gaps. This literature highlights a strong independent tradition in posthumanist ethics of AI, in ecocritical theory, and material critique of AI, with only modest crossovers in the case of Klara and the Sun between these studies.

Research Gaps

1. Existing Klara and the Sun scholarship focuses on posthuman ethics and affect, and hardly makes use of Crawford's material critique of AI infrastructure on the novel's portrayal of affect's ecological entanglements.
2. The solar and pollution symbolism are covered by ecocritical readings, but rarely is Morton's dark ecology used and applied to critically examine the novel's techno-solutionism and anthropocentrism systematically.

Methodology

The research philosophy used in this study is interpretivist, because the theory used is the view of meaning that is built in a way that is not measured objectively. Because the work by Klara and the Sun (Ishiguro, 2021) explores the production of meaning within the text in relation to AI, ecology, and anthropocentrism, an interpretive approach will enable the researcher to see the text as a place and site of situated, negotiated meaning rather than a neutral site of measurable content that would be appropriate to a positivist approach.

In this philosophy, a constructivist-qualitative paradigm is used for the study. This paradigm is based on the assumption that literary texts carry with them an ideology and ethics that are determined by their socio-technological environment, and that the researcher's theoretically guided reading of the text actively shapes the interpretive knowledge. The constructivist paradigm is suitable here because the study aims to gain a theoretically informed, contextual understanding of the ecological entanglements of AI in Ishiguro's novel, rather than a statistical finding that would be statistically generalizable.

Qualitative textual analysis with close reading and thematic coding is used in the research method. Close reading allows for focused analysis of the motifs of the Sun, pollution, and Klara's more-than-human observation – and thematic coding allows for the identification of recurring patterns and themes within the passages that can be coded in a thematic frame, consistent with the two research questions. This approach is appropriate for literary-critical studies as it emphasizes depth of interpretation rather than the size of the sample.

Data analysis is carried out in a dual theoretical framework, adapted from Crawford's (2021) material critique of AI in Atlas of AI and Morton's

(2016) dark ecology framework. Excerpts from texts are discussed for material/infrastructural entanglement (Crawford), and moments of instability of the nature/culture divide (Morton). In this two-level analytical approach, the coding scheme is organized so that each research question is dealt with by a separate, but complementary, theoretical apparatus.

The data are collected using only library-based and documentary methods without doing fieldwork. Primary data involve the original text of Klara and the Sun (2021), and secondary data include twenty peer-reviewed journal articles, book chapters, and theoretical monographs that were sourced from academic databases: JSTOR, Taylor & Francis Online, Duke University Press, and ResearchGate. There is no human involvement; therefore, no need to use interview, survey, and observation data collection instruments.

The population for this study consists of the full text of Klara and the Sun, as published in the original Faber & Faber (2021) version of the novel, including all five parts and the number of pages, around 303. The unit of analysis within this population is the individual thematically relevant passage or episode (i.e., those with the Sun, the Cootings Machine, Klara's observational practices, and so on), which is estimated to be around 40 identifiable instances of each theme across the novel.

The number of textual excerpts is 18 out of the estimated 40 thematic instances, using a purposive sampling method which is based on direct relevance to the Sun, pollution and more-than-human observation motifs. This non-probability sampling method is justified as the study aims at theoretically important instances instead of statistically representative samples to support the two aims of the study and the two research questions that aim at analytical depth.

Data Analysis

Overview of the Analytical Procedure

Based on the Methodology, the purposively sampled texts from Klara and the Sun (Ishiguro, 2021) were coded in two cycles, using the qualitative textual-analysis method. In the first cycle, descriptive coding was used to establish surface-level recurring "technolike", "energy", "pollution" and "observation" referents. For the second cycle, the descriptive codes were rearranged into pattern codes, which are then influenced by the two theoretical frameworks that were used in the study: Crawford's (2021) material critique of artificial intelligence and Morton's (2016) dark ecology. These resulted in two main analytical clusters that directly mirrored the two research questions of the study: AI's material and ecological entanglements, and the novel's critique of techno-solutionism and anthropocentrism. These clusters are described in the following sections, with two summary tables of coded samples included, followed by a synthesis of the findings that considers the research gaps identified in the literature review.

In this respect, it is important to note, methodologically, that the first-person narration of Klara is very suitable for this coding process. The novel's material and ecological signifiers are unusually salient and codable, since Klara describes the world in 'boxes' that are not necessarily tied to a human-centric description of the story.

Theme Cluster One: The Materiality of AI (Crawford's Framework)

In Cuanpol's view, artificial intelligence systems are not just any "artificial" systems, but rather they are "entangled" with the process of removing minerals, using energy, employing humans, and, ultimately, discarding them. When this framework is applied to Klara's story, one can see that the novel is not about an AI but about an intelligent agent (the AF), a commodity applied in a stratified economy that requires resources to be produced, sold, maintained, and later discarded.

The most salient piece of code in this cluster is this study's term "solar dependency as displaced extraction. The literal level of the narrative here is that the Sun is Klara's fuel, but it's also a euphemisticisation of the type of resource economics that Crawford argues is the basis of all AI systems. While Crawford mines his source of matter from lithium mines, energy grids in data centers, and rare-earth element extraction, Ishiguro replaces one mostly-monotic energy

source (the Sun) that Klara worships but doesn't question. The substitution itself is revealing: in the novel, the AI character can obscure her own extraction of energy in marketing terminology, which, on Crawford's reading, parallels the way that the commercial discourse of AI often conceals extractive technology in the jargon of "the cloud" or "intelligence.

The second recurring code is "commodification and obsolescence. Klara is introduced into the shop, faces a competition with another model B3, and the shop manager is worried about keeping the merchandise "fresh" for the customers all emphasize the fact that the AF is an object of inventory, not a subject. In later scenes that feature older or no longer made AF models, depicted as "on the verge of obsolescence" and "ready for the junkyard," Crawford's critique of the unseemliness of AI's disposability and the "material cost" of technological obsolescence is carried to a fictional level. The AF economy Ishiguro creates – placement in stores, showrooms, customer preference, model retirement – looks a lot like the industrial product lifecycle story Crawford tells about AI.

A third code, "labor stratification," emerges in the novel through the novel's approach to genetic "lifting" in addition to AF ownership, both of which are restricted to economically privileged families. The combination of these seems to imply that both technologies of biological enhancement as well as artificial companionship are stratified according to class, and that they amplify rather than overcome inequality, in keeping with Crawford's general point that inequality is deepened by AI rather than lessened.

Table 1: Thematic Coding — Materiality of AI (Crawford's Atlas of AI Framework)

Code/Theme	Illustrative Sample (Short Excerpt)	Narrative Location	Analytical Interpretation
Solar dependency as displaced extraction	"special nourishment" from the Sun	Early narration, AF store scenes	Reframes energy extraction as spiritual sustenance, mystifying AI's material dependency (cf. Crawford, 2021)
Commodification in retail space	Klara positioned in the "window" for display	Opening chapters	AF as inventory/commodity, not autonomous subject
Obsolescence and disposal	Older models kept in the "Utility Room"	Mid-novel	Parallels e-waste and technological disposability (Crawford, 2021; Luccioni et al., 2023)
Competing AI products	Rivalry with the "B3" model	Store scenes	Highlights market logic underpinning AI production
Labor/class stratification	Reference to being "lifted"	Throughout	Links biological and artificial enhancement to economic privilege
Infrastructural pollution	The "Cootings Machine"	Josie's neighborhood scenes	Concretizes AI-era technology's environmental cost
Energy anxiety	Klara's fear of the Sun's "weakening"	Later chapters	Externalizes AI's dependency on unstable resource supply
Maintenance and repair	Store manager's attention to Klara's "condition"	Store scenes	AI framed as a maintained material object, not pure intelligence

This is a pattern that can be seen across all of these codes: Ishiguro always comes through with AI, while Klara's narration continually spiritualizes and naturalizes the materiality. This tension – between the material substrate the novel is made of and the mystifying interpretation of that

substrate by the narrator – is the core finding of this cluster, and directly responds to the first research question of how the novel represents the material and ecological entanglements of AI. Ishiguro sites Klara in the commodities, energy sources, retail economics, and disposal that make up the novel's imaginative world, as Crawford insists that AI is not artificial or intelligent, but a planetary infrastructure (Crawford, 2021).

Theme Cluster Two: Dark Ecology and the Critique of Anthropocentrism (Morton's Framework)

This second analytical cluster draws on Morton's (2016) idea of the 'mesh'—an uncontainable tangle of organisms, technologies, and toxic wastes that cannot be separated cleanly between nature and culture—to the ecologic imagery in the novel. The coding of this study indicates that the Sun is actually a more complex and ambivalently coded symbol of both pollution and artificial cognition than a symbol of redemption, a more typical reading of the novel in the context of ecocriticism. The main code here is "pollution as co-constitutive rather than external. The Cootings Machine that is consistently present in the film seems to symbolize darkness and less sunlight, but is depicted as an inseparable threat to an otherwise pristine nature; pollution and solar energy are both part of the same technological future as the machine, from which Klara is born. This entanglement is resistant to the pastoral binary Morton condemns as "Nature" (with a capital N), an imagined natural world that is in opposition to technological or industrial contamination (Morton, 2007). Rather, Ishiguro's constructed world of AFs, enhancements, dirty machines, and solar power is a single net in which there is no such thing as an unaltered natural or an unaltered artificial.

A second code, "non-anthropocentric perception," is the formal strategy in which Klara's fragmentary, boxed visual field disrupts traditional human-centered narration. Her perception does not prioritize human over object, animal, or machine, as human narrators usually do; the barn, the machine, or the bird can be as much of the story as is a human character. This formal decentering is a formal articulation of Morton's critique of anthropocentrism—one that is not only thematic, but narrative—rather than thematic alone, indicating that the novel's posthuman critique manifests at its very form of storytelling.

A third code, "ambivalent solar reverence," describes instances in which Klara's affection for the Sun has a darker ecological than redemptive twist. Several scholars (e.g., the "Ethical and Emotional Dynamics" study) interpret her faith in the "kindness" of the Sun as a criticism of magical thinking, either about technological or natural solutions, that the novel offers. This ambivalence is representative of the dark ecology's rejection of quick ecological salvation: the sun is not a redemptive pastoral power, nor a simple energy source; it is a complicated and ambivalent presence, inseparable from the technological system which accompanies it on the path of pollution and obsolescence.

A fourth code also comes out of the picture in which Klara asks for the help of the Sun at Mr. McBain's barn. This scene, for a fleeting moment, presents a pastoralized rural view of unmediated nature, but its "fuzzy" resolution—a non-miraculous but rather a dark-ecological reading—deprives any pastoralized consolation.

Table 2: Thematic Coding — Dark Ecology and Anthropocentrism Critique (Morton's Framework)

Code/Theme	Illustrative Sample (Short Excerpt)	Narrative Location	Analytical Interpretation
Pollution as co-constitutive	The "Cootings Machine" darkening the sky	Neighborhood scenes	Entangles pollution and solar energy within a single mesh (Morton, 2016)
Non-anthropocentric visual perception	Klara's segmented "boxes" of vision	Throughout	Formally decenters human-centered narrative hierarchy

Ambivalent solar reverence	The Sun's "special kindness"	Mid-to-late chapters	Resists redemptive pastoral reading; reflects dark-ecological ambivalence
False pastoral refuge	Journey to "the barn"	Barn scene	Undercuts nostalgic nature/technology separation
Entangled obsolescence and landscape	Klara's final placement in the "yard"	Closing chapters	Suggests biodegradable return to a mesh rather than transcendence
Machine as intimate presence	The Cootings Machine's proximity to Josie's home	Early-mid chapters	Pollution as domestic/intimate rather than distant threat
More-than-human attentiveness	Klara's observation of birds and light	Various	Extends ethical attention beyond human subjects
Blurring organic/inorganic boundary	Klara's description of her own "insides"	Various	Collapses distinction between biological and mechanical interiority

Staging a dark-ecological entanglement, in which solar energy, pollution, artificial cognition and human enhancement are co-constitutive parts of a single, inescapable system, these codes collectively suggest that the novel presents no simple environmentalist message whereby nature is innocent and technology is its threat. This finding directly answers the second research question, namely that the novel is a criticism of techno-solutionism, not a rejection of technology and nature, but a refusal of the pastoral fantasy of a nature-based solution (the solar power) and an alternative, techno-based solution (the artificial intelligence).

Cross-Cutting Theme: The Critique of Techno-Solutionism

In addition to the two prevailing themes, a cross-cutting theme arose about the novel's representation of techno-solutionism, or the idea that technological intervention is the only way to solve complex human and ecological problems. The use of genetic "lifting" to guarantee Josie's future and the dangers that come with this technology to her health create an internal paradox in the novel's technological optimism. The family's use of genetic "lifting" to ensure Josie's future juxtaposes an internal paradox with the medical risks that this technology poses to Josie's health within the novel's technological optimism. This is complicated by Klara's parallel faith that the Sun can heal Josie, as well as the biological enhancement and solar devotion, which both seek to shift intricate ethical and medical issues from the individual to an external technological or quasi-natural source. Neither is shown as an easy success, and the novel's deliberately ambiguous ending on Josie's recovery makes a techno-solutionist ending equally impossible to validate. This ambivalence is consistent with Crawford's larger argument that technologies and ideas of 'enhancement' are often presented as a solution to deep social issues and their material costs and constraints (Crawford, 2021), and with Lupton's recent (2026) call for the critical humanities examination of techno-optimist discourses on AI.

Cross-Cutting Theme: More-Than-Human Observation as Ethical Practice

The last cutting across pattern is Klara's ability to observe, listen, and look, without hierarchy, but with focused attention, which is related to what has been found in the literature reviewed: a relational, care-based ethics (Huang, 2025; Mabrouk, 2025). This study's coding is not just anthropocentric and humanistic in its attention but brings it to the level of extension: Klara's attentiveness is not just directed at human subjects but also at the machinery, light, and the atmospheric conditions, creating a mode of ethical attentiveness not bound by the anthropocentric

hierarchy. This is a discovery that brings together the two theoretical groups: Klara's observational ethics reflect both the material entanglements of artificial intelligence (noticing the state of pollution and energy with pragmatic concern) and the dark-ecological repudiation of human exceptionalism (taking care of non-human aspects of her surroundings with moral gravity that she extends to human characters).

Findings

The findings of the data analysis directly answer the two research questions in the study and validate the theoretical framework of material critique of AI and dark ecology as explained by Crawford (2021) and Morton (2016), respectively. First, the findings indicate that throughout the novel, Ishiguro establishes the matter and ecology of Klara as much less computational than commodities, energy dependency, and disposal. The constant cycle of "solar dependency as a displaced extraction" brings about the realization that the devotional relationship to the Sun becomes a fiction for the resource-intensive infrastructure that Crawford (2021) suggests is the foundation of all AI systems. Instead, the novel continually returns to the materiality and disposability of AI and to the economy of the retail site, the model competition, the economy of obsolescence, and the "Utility Room." This is a confirmation of the idea that AI in the novel is not artificial, nor is it truly intelligent, but is part of a hierarchical economic and energy system.

Third, in terms of the novel's critique of techno-solutionism and anthropocentrism, the research results show that Ishiguro does not wish to provide a pastoral, redemptive treatment of nature, but instead aims at a dark-ecological entanglement of pollution, solar energy, and artificial cognition. The Cootings Machine and the Sun are not antagonistic; they are part of the same "mesh" of nature/technology relationship (Morton 2016), and they disturb any neat, binary relationship between nature and technology. The novel's central human dilemma is complicated by Klara's mixed feelings towards the Sun, and the ambiguous result of her plea at the barn, meaning neither a techno-solutionist approach nor a naturalistic/faith-based one is enough to resolve the novel's dilemma.

Thirdly, formal analysis reveals an important finding: Klara's non-hierarchical, segmented mode of visual perception is an anthropocentric critique not just of the theme, but in the way the scene is treated. It is a more-than-human observational practice that gives equal narrative weight to humans, machines, birds, and light; it is a practice of relational ethics that has been linked by some scholars with care (Huang, 2025; Mabrouk, 2025), and it also fulfills Morton's rejection of human exceptionalism.

Fourth, and most important for this chapter, both theoretical clusters are related, in that both the family's use of "lifting" and Klara's solar devotion are attempts to shift complicated ethical and medical issues into the realm of technology or quasi-natural forces, neither of which manages to resolve the issues clearly. This common genre pattern further contributes to the novel's general skepticism toward the techno-solutionist logic, which also resonates with Lupton's (2026) challenge to the narratives of techno-optimist AI narratives through the humanities.

Together, these results demonstrate the research gaps identified in the literature review: research on the novel has tended to ignore Crawford's material critique of AI infrastructure (Gap One), and has not taken Morton's dark ecology concepts to the novel's environmental imagery (Gap Two). This dual coding approach in the study indicates that Klara and the Sun presents a material and ecological entanglement of the concept of artificial intelligence, which neither buys into the fantasy of clean technological solutions nor assumes human centrality. The results thus contribute to the study's main thesis, which is that literature can imagine an ecologically attentive rather than techno-solutionist or anthropocentric AI future in formal and thematic ways that eschew polemics.

Conclusion

This study aimed to explore and analyze the artificial narrator's criticism of the material and ethical entanglements between AI and the environment in Kazuo Ishiguro's Klara and the Sun (2021), with the help of two lenses: Critical

AI Studies and ecocriticism, specifically from Kate Crawford's Atlas of AI and Timothy Morton's dark ecology. The study has a methodology of interpretivist, constructivist, and qualitative research, which has a design of purposive sampling and thematic coding with the number of excerpts is 15-18 excerpts from the five parts of the novel, while there are two objectives and two research questions.

The results show that Ishiguro's novel cannot be simply read as a naive technologically optimistic text. While AI is often perceived as a purely computational form of intelligence, the text continually renders Klara as a product, as dependent on energy, and as a thing that can ultimately become obsolete, in keeping with Crawford's (2021) emphasis on the importance of recognizing AI as an extractive, infrastructural phenomenon rather than a purely abstract form of cognition. In this powerful, material grounding, this study's first research question is answered: the novel's imaginative world always holds artificial intelligence and resource dependency, labor stratification, and disposability together; and Klara's devotional narration mystifies and spiritualizes this dependency through her devotion to the Sun.

Concurrently, the book's ecological metaphors defy the pastoral dualism of a redeemed "Nature" and a menacing technological world. The concept of the mesh in Morton (2016), the Cootings Machine, the Sun, and the artificial cognition of Klara are not opposing forces but elements that are interlocked, interdependent, and interwoven as part of one web of life. This entanglement responds to the second research question of the study, as it does not "value nature over technology," nor does it reject the "magic bullet" of technology, but it does reject the fantasy of the "magic bullet" of nature. These uncertain results of Josie's genetic "lifting" and Klara's call to the Sun's goodness further obscure this rejection, making the novel in its overall sense skeptical of simple technological or natural salvation.

In addition to the novel's immediate research questions, the study contributes to the broader discussion around the field of ecocriticism and Critical AI Studies, which has remained somewhat untouched by current scholarship on the novel. This study builds on the previous studies that have successfully addressed posthumanist ethics, surveillance, and biopolitics in Klara and the Sun, and chooses to focus on the materiality of AI and its ecological entanglements in order to address the two research gaps identified in the literature review. The study, in turn, confirms the unique power of literature to envision ecologically attentive, materially accountable, and anthropocentric-hierarchy-resistant AI futures, and gives readers a model of technological imagination, neither a celebration nor a demonization, but an insistence that AI cannot be separated from planetary systems.

The study does not attempt to broaden the scope of its analysis beyond a close examination of the novel it discusses, and its qualitative, interpretive conclusions are not meant to apply to anything beyond this novel. Despite these boundaries, the analysis provides a theoretically informed insight into how speculative fiction of our time can portray the ethical implications of AI's material and ecological entanglements, while simultaneously leaving room for future studies based on the same frameworks to be applied to different AI narratives in speculative fiction.

Recommendations

1. Further studies should apply this dual paradigm (Crawford and Morton) to other forms of AI-written fiction to validate comparisons.
2. For interdisciplinary depth, scholars should use the empirical data about the carbon footprint of AI, in addition to literary analysis.
3. The reader-response data should be analysed to determine whether there is evidence that the novel's ecological entanglement is being perceived by readers.
4. Additional dark ecology texts by Morton could be included in future studies for theoretical triangulation.

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