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## **A Shift in the Time–flow: Reading Metaphysical Underpinnings in Posthuman Agency and Kinship in Vandana Singh’s “Indra’s Web”**

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### **Abstract:**

Science fiction (SF) engages in narratives that extrapolate the present society and speculate a futuristic one. Vandana Singh’s short story “Indra’s Web” presents one such narrative where the community answers to the contemporary crisis and speculates a solarpunk future. The text presents a community that ditches the ‘smart city’ to strive for a ‘wise one.’ The paper analyses the short story to explore the climate concerns and the solarpunk future as depicted in the text using posthuman lens and Donna Haraway’s concept of “oddkin.” It aims to explore the shared agency and kinship between humans and nature. The paper argues that the ruminations on the probable crises and their remedy help to engage dynamically in a consciousness-raising exercise.

**Keywords:** Science Fiction, Posthuman, Solarpunk, Agency, Kinship, Oddkin

“Cities are no more artificial than Bee-hives. The internet is as natural as a spider's web. We ourselves are technological devices, invented by ancient bacterial communities as means of genetic survival - we are part of an intricate network that comes from the original takeover of the Earth. Our power and intelligence do not belong specifically to us, but to all life.”

**-John Gray, Straw Dogs**

### **1.Introduction**

Vandana Singh in her short story “Indra’s Web” delves into the narrative that could avert the anticipated apocalypse. It is the story of Mahua, a scientist, who dreams of creating a self-sustained India by insinuating

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ecological awareness into current socio-political negotiation. Mahua is working on Suryanet, a significant project that is motivated by a myconet, a fungal network that connects the forest. The project's intended outcome is a ground-breaking energy grid, but something is malfunctioning and jeopardising the project as a whole. In addition to this, Mahua is also thinking about her grandmother, who is recovering from a stroke and is currently in the hospital. The current story is set in a not-so-far timeline, in the fictional town of Ashapur which lies on the outskirts of Delhi. The setting of the story is instrumental in discussing the climatic issues and its actors, leveraging a dialogue to raise the national consciousness in thinking about the future of the country.

## **2.Aim**

The paper discusses “Indra’s Web” in reference to the themes like communal harmony, technology and sustainability, learning and mimicking nature to preserve culture and history, the possibility of solarpunk futures, and the interaction between individual agency and collective responsibility. It explores the themes vis-à-vis the posthumanist agency and the concept of “oddkin.” The paper argues that the formation of the benign and receptive bonds between nature, humans, non-humans and sentient machines open up avenues to ruminate on the probable ecological crises and their remedy help to engage dynamically in a consciousness-raising exercise.

Using posthuman lens to examine the near-future climate-fiction from a post-anthropocentric approach, the paper seeks to answer the following three questions: By disparaging the anthropocentric crisis, is the author trying to raise an ecotopian consciousness instead of slipping into the despondent despair of mainstream science fiction? How solarpunk is the peak manifestation of “ecological poetics” that upholds individuality rather than individualism? By referring to Earth’s biosphere as a complex system, in what manner does Singh argue for a posthuman agency? The paper, therefore, aims to explore the shared agency and relationship between humans and nature in “Indra’s Web,” using posthuman lens and Donna Haraway’s concept of “oddkin.”

## **3.How is “Indra’s Web” a near-future climate-fiction?**

“Indra’s Web” falls into the climate-fiction category of Singh’s works, like “With Fate Conspire,” “Entanglement” and “Requiem,” where she tells the tale of a near-future scenario centring the debate on climate change. In his

discussion regarding the climate fiction written by Vandana Singh, Amit R. Baishya notes:

She explores the impact of climate change on ordinary dimensions of life through a focus on the experiences of communities who are already facing the brunt of global warming .... Singh's stories are not about catastrophe and the environmental sublime, but of the cruddy days after catastrophe where we find obligations in the everyday and the mundane. (3)

Vandana Singh in her realist or near-future climate fiction explores time and space that are not completely detached from the author's epoch and act as warning tales of degrading climate. She weaves her tales around indigenous/marginal folks experiencing hardships that are not far from the present-day reality, rooting the narrative in a hopeful, resilient, adaptive, and sustainable future.

The present paper takes note of the short story "Indra's Web" as it is a tale of hope that situates alternate ways of living. The story takes place in Delhi, the capital of India. Delhi has always been in the headlines for its alarming Air Quality Index (AQI), incoming mass migration and problem of slums. "Indra's Web" offers special attention to these issues in choosing the setting. The work is primarily set in Ashapur (a fictional town), which can be translated as 'the city of hope.' Ashapur was once a slum, that lies "on the edge of Delhi like a sore" (144). Mahua and her team have devoted ten years to transforming the slum into a green and self-sufficient community. Earlier the slum had cardboard and tin hutments, but under the Ashapur project, they have switched to more sustainable and natural options. Stef Craps and Rick Crownshaw, while discussing recent climate fiction, write:

Whether the future emplotted is a (post-)apocalyptic one characterized by socio-economic and ecological collapse and species extinction, or one of resilience, adaptability, and sustainability, or somewhere in between, these fictions stage cultural remembrance .... (5)

Vandana Singh by using the "future anterior," paints an adaptable and resilient community in "Indra's Web" that is "somewhere in between" (Craps and Crownshaw 5). The people use sustainable materials in the story that indigenous communities have long been associated with and carry cultural

markers as well. While transforming the city of hope, the cardboard and tin hutments are supplanted by dwellings made primarily by the “residents themselves from traditional materials: a hard mixture of mud, straw, and rice husk plastered with lime” (144). Singh mentions in the story that the materials used in the community are part of the ancient civilisations and had been in use for tens of thousands of years before being abandoned. The transformed slum, now Ashapur, is home to the “original slum inhabitants” and the “climate refugees from the drowned villages of Bangladesh” who migrated there after the floods (144).

From an aerial view, Ashapur looks like “an uneven carpet of green and silver” consisting of rooftop gardens and solar panels (144). The place is lush with “the corridors of native trees neem, khejri, and gulmohar” (144). The community is “nearly self-sufficient in food and energy” (144). It has solar plants and biogas plants to fulfil its energy requirements. This is further aided by the layout and architecture of the place. The houses exist in clusters and are built in a way that they do not require air-conditioning. They naturally keep cool in the summers and warm in the winters corresponding to traditional architecture<sup>1</sup> “revived ... by visionary architect Laurie Baker” who is known for his ecologically conscious designs as he relies on ancient techniques and local materials to design sustainable spaces (144).

The heart of the story lies in the innovation of suryanet, an energy grid that has the potential to supply electricity to a whole city. The concept of suryanet has been adapted from the corporal fungal network present in nature. Through this de facto design, known as the ‘wood wide web,’<sup>2</sup> a forest communicates, and shares energy and information pertaining to nutrients across species, just like the internet, a world-wide network, has formed a web across the world and allows one to communicate across channels and share information. Much like a mother feeding and protecting the child, the older trees, too, are “mothering their children” (Simard 3). Aligning with the ecocritical sentiment, Simard assesses the relationship between nature and humans and believes that the “understanding of the intelligence of the forest” is a crucial step into “an exploration of how we can regain our respect for this wisdom and heal our relationship with nature” (2). Similarly, Singh also delves into the ecocritical facet in her climate fiction and explores, “the relationship between literature and the physical environment” (Glotfelty xviii). By entangling climate, community, technology, and sustainability in

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“Indra’s Web,” she explores “city of hope,” a world that is not far-fetched, is hopeful and perhaps an answer to mitigate the present climate crisis (151). She challenges the current state of affairs and suggests alternative technological and social scenarios by focusing on real-world occurrences. This is why, she situates “Indra’s Web” not in a faraway planet or the remote future, rather, it is set in a time period close to the present time. It is because of these reasons that Singh’s science fiction is often quoted as ‘realist science fiction.’

#### **4. Posthuman Kinship of the Complex System**

In “Indra’s Web,” Singh decentralizes the agency of humans in accordance with the posthuman philosophy and discusses nature as symbolized through beings with an intrinsic value. She moves beyond the superiority of human consciousness advocated by humanism/ anthropocene towards posthumanism that discusses nature and non-humans as an integral part of the biosphere.

At the beginning of the story, Mahua is seen running through the forest to relieve her stress regarding her grandmother’s stroke and malfunctions in the suryanet. She seeks inspiration from the forest as “forest was where she got her best ideas” and that is why “her work was getting recognition across the world” (142). In turn, the forest also treats her as one of its own; “here she [is] just another animal: breath and flow, a kite on the wing, a deer running” (142). These posthuman sentiments and interconnectedness of the ecosystem in the story constitute that humans are “physically, chemically, and biologically enmeshed and dependent on the environment” (Keeling and Lehman 1). This posthuman interconnection is also made conspicuous when at thirteen Mahua had fallen sick and self-diagnosed herself with acute apophenia. It is through this tendency to see patterns and connections around her that Mahua could form a kinship and decipher connections between nature and humans. Ashapur is the by-product of the same instinct. She employs technology following the principles of biomimicry to create a complex web-like energy grid: Suryanet. The integral part of the city, suryanet, is based on the ‘wood wide web.’ Just as ‘wood wide web’ dons a fungal network that spreads across the surface via roots for nutrients and energy transmission, suryanet, too, is spread across five suntowers that are “capped by suntracking petals of biomimetic material” to generate and store energy (144).

Mahua affirms that “there is a fungal network, a myconet, a secret connection between the plants of the forest [and] they talk to each other ... in

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a chemical tongue” (143). In the forest, the web of roots is connected to each other for an even distribution of chemical signals throughout the trees. To understand the communication about “pests, food sources, and the weather” Mahua and her team plant “sensors in the soil” (143). The sensors detect the “musical chatter that is at once soothing and intriguing” and the team creates a stress-relieving app out of that music (143). The kinship is further pronounced when, while listening to the musical chatter, Mahua feels as if an “electric shock coursed through her, ... as though her deepest mind already knew this pattern” (143). Hence, the human and nonhuman actors of the Ashapur produce change and affect behaviours of each other in different ways and to varying degrees. Further, the story reflects on the untrammelled agency that is shared within the complex system, as Mahua and her team take the initiative to invent suryanet “through interactions” with the ecosystem “that generate affects, habits, and reason” to look for energy efficient and sustainable ways to exist (Keeling and Lehman 1). Towards the end, we observe that Suryanet, conjured from the intelligence of the forest, has developed its agency and sentience on its own. This corresponds with the posthumanist agency, which possesses “no attribute that is uniquely human but is instead made up of a larger evolving ecosystem” (Keeling and Lehman 1). The story, thus, argues against the humanist “remote kinship” that finds it disturbing to be kin with a different race/species and fights to monopolize agency (Conrad 76). Instead, it accounts for a complex system with a posthumanist kinship of ‘oddkin,’ where a decentralized or shared agency breaks the humanist hierarchy. Singh’s complex system places more emphasis on developing a kinship with the system and allowing for its members’ agency than it does on symbiosis and synergy. Through this, Singh also emphasises upon intricate interaction between the animate and the inanimate and how they both impact each other. The sentience and agency do not solely belong to humans but are shared with every entity in a rhizomatic plane.

Mahua has set up a Biomimetic Energy Materials Lab on the outskirts of the city that operates suryanet. The motto of her lab is “*To Learn from Nature, not to Exploit Her*” (146, emphasis original). Staying true to the motto and mimicking the mycorrhizal network that spreads like a web via roots to transport nutrients and energy, suryanet, too, is spread across five suntowers. All the five suntowers are connected to supply energy to the new grid – the suryanet, which in turn is supposed to store energy and supply it to various parts outside Delhi but due to the failure of Suntower 1, that hope is shattering

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just like the hope for Mahua's grandmother who is counting her last breaths supported on artificial life support/ventilator. Suntower 1 is juxtaposed with Mahua's grandmother throughout the story. The narrative from the beginning to the end focuses on the unresponsive grandmother on the life support and the malfunctions in Suntower 1 threatening the life support system of Ashapur and a hope they both stand and strive for.

Mahua was only eleven when she lost her second parent, her mother. Since then, "it's been Mahua and her grandmother, who now lies in a hospital bed after a stroke, kept alive by the machines that surround her" (148). Her grandmother influences her a great deal. Mahua has heard many stories and learned numerous life lessons from her. She has taught Mahua, "when trouble [was] struck, unless it needed immediate attention, it was good to slow down and meander a little" (144). This is why, after the alert about Suntower 1 failure, Mahua takes the long route to reach her lab and wanders around the ridge to introspect for a while. The height of the ridge allows her to look over Ashapur. She observes "four solar plants making hydrogen from the breakdown of water — sewage-fed biogas plants," rows of solar panels, and "[t]he largest, oldest facility ... Suntower 1, now mysteriously moribund" (144 – 45).

Mahua, reminiscing to herself, thinks about her grandmother and her zest for life. Watching her lay in the mass of tubes and monitors, Mahua is struggling to understand what her grandmother is trying to tell her. She thinks painfully to herself, "What good is it to be able to sense patterns and relationships when she cannot tell what her own grandmother wants to say?" (150). After losing hope for her grandmother's survival, Mahua visits the lab to check on the malfunctioning system. She observes that the Suntower 5, which is only developed as a skeletal form and is under construction, has not only started functioning "but has [been] allocated resources" by suryanet making Suntower 1, "the oldest, and least efficient . . . [and had] shut itself down" (151). The suryanet has started acting independently, making decisions, and developing an agency of its own. This prompts Mahua to wonder if "a sufficiently complex network give[s] rise to its own wisdom" (151). Ruminating on the connection between her grandmother as "a major node [,] on which her very life depends [,] going 'off-line forever'" and the rekindling of suryanet, she ponders on how a forest survives via accepting death; "with every ant that meets its annihilation, a thousand life forms come into being" (151). This connection again points to the metaphysical connection

that every being shares with one another; here, a death clears the way for a new emergence and Suntower 1 gives life/resources to Suntower 5.

Mahua's apophenia, suryanet's sentience, and the posthuman agency of the forest collocate the eponymous Indra's Web (God Indra's Net in Hindu Cosmology) which is "the ultimate cosmic network in which every node mirrors the whole" (151). Although having an affirmative view on the use of technology, the technophilia is subdued throughout the story. Vandana Singh does not let technology overtake the narrative, rather she introduces technology modeled on a self-regulated system of myconet and makes suryanet a part of the whole complex system. The Indra's web in the story is, therefore, symbolic of what Haraway calls an "oddkin." The posthuman sentiment that runs throughout the story conjoins the self-regulating multi-level system of myconet, its techno-mimicry suryanet, and the biodiversity of Ashapur along with its humans and non-humans calling to their kinship.

### **5.Solarpunk Future Anteriors**

The mainstream science fiction, catering to the consumerist demands of the genre, often strives to extrapolate late capitalism's Neo-liberal societies towards an apocalyptic and post-apocalyptic future only. These narratives, therefore, reflect an individualistic approach towards society dependent on machines or in their struggle for survival, leading to compliant and violent lifestyles. Expressing a pessimistic view of an already degrading future, such stories drift towards gloom, hopelessness, and despair.

As Vandana Singh writes realist climate fiction, she neither dwells in an ecological utopia of a 'return to nature' lifestyle in a didactic and reformatory way nor an ecological dystopia overridden by technological dominance or catastrophes of despondent doom, but "somewhere in between" (Craps and Crownshow 5). This is not to say that she is opposed to simpler ways of life or the use of technology but she understands that in a globalised world, it is not possible to break free from technology and live in a society devoid of useful inventions. She, however, considers the use of technology in an anti-capitalist manner to move towards the prosperity of the whole community and not disrupt human and non-human coexistence; to assist them without overwhelming their autonomy. Singh's protagonist Mahua reflects similar sentiments in "Indra's Web." Mahua dares to withstand the mainstream flow of industrial violence in designing Ashapur and does not try to appease the "potential foreign funder" for the grant required for the city (145). Instead, she goes against the consumerist grain of the time and resists



the conventional metropolis structure and technology. She opts for a radical and resilient city structure “for optimal city function” to move from individualistic progress to collective community progress (145). Mahua, while starting her Ashapur project, delivers a talk to invite interested candidates to join her in the project. She clarifies to them that this project would not help them get rich, but it might give them a meaningful life with a purpose:

What I can give you is a chance to be part of a revolution. A revolution that might just save our earth from the climate crisis. One that comes up with not just new technologies but new ways to live that are more whole and deep and satisfying... blow old paradigms out of existence on a near daily basis. (147)

The idea of Ashapur is neither a utopia nor a dystopia, it is intermedial. It amalgamates technology and environmental ethics to strive for the “survival of Ashapur and maybe of the biosphere itself ...” (144). In this manner, the work falls in Solarpunk genre<sup>3</sup> since such amalgamations are popular in Solarpunk works. As required by the Solarpunk world, Mahua’s surynet would permeate the type of energy Rueckert refers to as “pathways which [will] sustain life” while participating in “ecological poetics” (Johnson). Her Ashapur is a “literary vision” for the future of “human–environment interaction” (Rueckert 108). It includes both empathy for the need for a better society and ideas for the remedies that will make it possible. Singh’s Solarpunk or Ashapur, thus, synthesises environmental sustainability along with social justice, where “solar” refers to new eco-friendly technologies, and “the idea of brightness and hope” (Ulibarri, Preface 1). Whereas “punk” predominates “resistance, enthusiasm, and the desire for radical societal change” which would strive to create “societies that are anti-capitalist and de-urbanized, post-scarcity and post-hierarchy, based on compassion and acceptance” (Więckowska 350). Solarpunks contend that the issue with envisioning a bleak future is just that while failing could be cathartic, it prevents one from considering alternatives (Hamilton 2017). In accordance, Singh’s “Indra’s Web” can be observed as a reaction against the apocalyptic futures. It opens up a dialogue “to re-imagine the relationship between technology – society – nature,” beyond the colonial nature of nature-culture dichotomy (Reina-Rozo 2020). Solarpunk’s “metamodernist sensibilities,” as explored in the story “Indra’s Web” include the new energy grid of the Ashapur project and self-sufficiency of the city which endeavours to move towards a solution and action-oriented imagery and its stance of radical hope

(Kadagishvili 2013). This enunciates the viewpoint that while the future may appear to be a daunting prospect, it does not have to be terrifying or painful.

Solarpunk fiction examines human “ingenuity, generativity, independence, and community” in troubled times, and Mahua along with her team reflects the same ethics (Flynn 2014). They take an active role in mitigating the crises with the invention of a large web-like energy grid called Suryanet. It is a significant project that mimics the congenital network of myconet, “a fungal network” (142). Myconet spreads across the forest bed in a web-like pattern and is responsible for the circulation of energy materials among the forest trees. The fungal network communicates “about pests, food sources, the weather, all through the flow of biomolecules through the fungal hyphae” (142 – 43). Through the network, large trees “share nutrients with saplings of the same species” as well (143). Within the solarpunk premise, Mahua mimics the forest’s chemical network into the technological network of energy, invents a “new grid,” creates an “artificial marshland by the river,” and engineers it in Ashapur (142). Instead of being an abridged form of civilization, or an artificial world of today’s metropolitan, the original street pattern of the slum has been retained and all the narrow lanes move around the ancient pipal tree, houses, and teashops. The city of hope propels cooperation, conscious living, and patience as it mingles the former villagers who are “traditionally energy-efficient, living in clusters, throwing away nothing, re-using almost everything” with “an internet café and an agricultural research centre,” to persevere in the times of crises and discover grounded ways of being (144– 145).

The city, in “Indra’s Web,” maintains a healthy biodiversity with its corridors of native trees throughout the community and lanes that are too small for the traffic flow. Keeping the few larger and coarser pathways for vehicles and dense and smaller pathways for humans and animals, the city also boasts “the green corridors that branch into the city” (145). This is done not only to provide the city with “cooler summers, seasonal supplies of fruit and nuts, and raw material for a new cottage industry in crafts” but also because “[s]pending time in nature. . .has emotional and existential benefits that go beyond just being able to solve arithmetic problems more quickly,” according to Cynthia Frantz (145, qtd. in Weir 20). Ashapur, in this way, forms the prototype of a near-ideal that can assuage the “climate crisis” and its socio-cultural impact on its residents (147). A decade of understanding nature and learning from it has guided Mahua and her team to engineer Ashapur as a futuristic model city

that solves the issue of excessive reliance on fossil fuels by turning towards clean renewable energy and recycling waste (147). Ashapur, blurring the dichotomy of culture and nature since its inception, has landed itself funding to install suntowers to supply energy into the grid network. Overlooking the whole landscape, the city has five suntowers with metal leaves that drink photons not only making it self-sufficient in terms of “food and energy” but also making it “able to *donate* power to the Delhi grid, thereby silencing the naysayers and establishing the need for a thousand Ashapurs” (144 – 45). Ashapur’s aspirations to uphold solarpunk future can be juxtaposed with Ghosh’s capacity to imagine ‘a great derangement’ and a dystopian future. Imagining an anthropocentric future, Ghosh argues that “those at the margins are now the first to experience the future that awaits all of us” (62). Here, he refers to the future of climate crisis and “also a crisis of culture, and thus of the imagination” (9). Ashapur, a former slum, houses the marginal folks that include “the original slum inhabitants and climate refugees from the drowned villages of Bangladesh” (144). By moving away from the deranged imaginations of the future, Ashapur is able to unravel the catastrophe and replace the anthropocene with the solarpunk so as those on the periphery can become the first to witness the hopeful future that can potentially lie ahead of us.

Solarpunk, in this sense, moves away from anthropocene and demands a paradigm shift to look at the world beyond “Cartesian predictability and determinism” to acknowledge the “complex system” comprising of “land, biosphere, air, water, ice caps, and human civilization” that interact strongly with each other (Singh). To think in binaries and fixed scientific paradigms is to think of a world that sides with capitalism, industrial development, and extractives to encourage “individualism, human isolation, social atomism, and mainstream economics” (Singh). Vandana Singh calls this fixed scientific paradigm a “Newtonian paradigm” and argues against it. To venture away from this capitalistic and individualistic worldview, Solarpunk challenges the binaries (eventually anthropocene) and advocates for the complex system that the earth is! It recognises the importance of sustainable and green energy resources that do not harm (or leave alone) the inanimate and non-human actors of the biosphere.

Although, Ashapur is not the utopia (yet) that it aspires to be. The suryanet installed in the city is malfunctioning, with suntower 1 “mysteriously moribund,” the team is failing to rectify the situation and Mahua is worried if

her team would “forgive her if this turned out to be the disaster she had always feared?” (144, 147). The complex system of Ashapur is still not stable but is successful in conceptualising an alternate way of thinking and being. Despite all the setbacks, the story is about recurrent hope and discovering other ways of living as is in solarpunk fiction.

## **6. Conclusion:**

Vandana Singh presents “Indra’s Web” as a response to climate change that indulges into speculations of what “a possible future city might *look* like – not a ‘smart city’ but a ‘wise city’” but at the same time “it is also a human story” (Anderson). The story tacitly projects “how the nodes of home, economy, and ecology” when brought together have the potential to “exhibit multiple modalities of engagement” (Khan 15). Singh echoes these concerns by shifting the time flow of her narrative and presenting a Delhi, and inductively a new world, that has the potential to avert the ecological dystopia in the early stages through forming metaphysical posthuman bonds with the complex system. By setting her story in a near world she not only produces a tangible solution for the ecological distress but raises consciousness for ecotopias as well; the story insinuates a solarpunk future. Suryanet, a hope for Ashapur and of the future, reinforces these solarpunk futures. Contrived by Mahua and her team, suryanet is unstable and complex that has developed its own sentience, much like any biotic component of the ecosystem. The story ends with the rise of this sentience that saves the partial failure of the concocted solarpunk, upholding the hope for an alternate way of living. With this, Singh advocates for a posthuman agency and argues for a kinship between nonhuman, human, and biosphere that is essential in visualizing a near-ecotopia or potential solarpunk future. The possibility of a solarpunk and ecotopia is, thus, rooted in optimism and a planet existing in a rhizomatic plane instead of a top-down consumerist world.

With the triangulation of economy, social differences, and political upheavals in sf works, it becomes imperative for the writers and readers to engage in a feedback loop and inform each other in articulating the language of resistance and the possibility of ecotopia. In “Indra’s Web,” Delhi stands at the precipice where potential socio-political and ecological dystopia meets and where we could go next is left to the reader’s speculation. The paper leaves us facing a question: Will we choose to generate the impulses of resistance in our present time to overcome the dangers of slipping through the precipice or we

would continue to ignore the cultural productions of science fiction as cautionary tales?

*End notes*

1. In 2022, the Architectural Association School of Architecture in London hosted an exhibition: “The Future is a Journey to the Past: Stories about Sustainability,” curated by Mario Cucinella Architects. To foster ecological awareness, which is necessary to close the ecological and anthropogenic divide, the exhibition investigated both historical and contemporary conceptions of sustainability. It exhibited examples where humans, in the past, mimicked the patterns in nature to survive; including “the sustainable environments of the termite nest and beehive, of forests and the very structure of trees and plants” that has influenced “human ingenuity to shape the step-wells of India, the ice houses of the Iranian desert and the city of Hyderabad in Pakistan that catches the wind to naturally ventilate its buildings” (*ArchDaily*).
2. ‘Wood wide web’ is said to have been discovered only in 1997 by Suzanne Simard, a Canadian ecologist, but it is an ancient way of communication throughout the ecosystem. Exploring the ancient forests of British Columbia, Simard elaborates upon “how trees might save us” from climate change and work ruthlessly to balance the environment (5). While studying the forest, she discovers the symbiotic relationship between the microorganisms (mycorrhizal fungi) and the roots of the trees along with their interspecies transmission of the nutrients (64). Simard further observes that the web of roots spread under the surface is connected to each other for an even distribution of the chemical signals throughout the forest (3).
3. The genre was formerly introduced in 2008 in an anonymous blog post on the website *Republic of the Bees*. It urged the creation of a new literary genre that would present renewable energy sources as the planet’s dominant form of propulsion (“From Steampunk” 2008). The subgenre of Solarpunk acquires the aesthetics and apprehensions of two extensively explored and widely popular “science fiction subgenres: Cyberpunk and Climate—Fiction (Cli—Fi)” (Rivero-Vadillo 42). In accordance, the Solarpunk literature “imagines new futures in the shadow of and in opposition to environmental change

and collapse” and contrasts with Cyberpunks “post—industrial setting defined by cold technology, virtual reality, and crime” (Wagner and Wieland 9, Lavigne 11). The subgenre is generally established “as an optimistic narrative space” where the subjects such as “high technology, environmentalism, and grassroots activism merge, depicting positive visions of human habitability in the Anthropocene” (Rivero-Vadillo 42). Corresponding to the idea of creating a hopeful ontological space, Solarpunk explicates a corporeal space where the “green technologies” create an “almost idyllic sense of urbanism” (Rivero-Vadillo 42).

### References:

- Anderson, Jason. “Positive Climate Futures: A Conversation with Vandana Singh.” *Climate Works Foundation*, 7 Nov. 2021, [www.climateworks.org/blog/positive-climate-futures-vandana-singh/](http://www.climateworks.org/blog/positive-climate-futures-vandana-singh/). Accessed 30 Dec. 2022.
- Baishya, Amit R.. “Listening to the Multiple and Multispecies Voices of the Crisis”: Climate Change in Two Cetacean Fictions by Vandana Singh. *South Asian Review*, vol. 44, no.1, 2023, pp. 37–49.
- Banerjee, Suparno, *Indian Science Fiction: Patterns, History and Hybridity*. U of Wales Press, 2020.
- Bellamy, Brent Ryan. “Science Fiction and the Climate Crisis.” *Science Fiction Studies*, vol.45, no. 3, 2018, pp. 417–19. Doi: <https://doi.org/10.5621/sciefictstud.45.3.0417>.
- Bogdal, Christian, and M. Scheringer. “Release of POPs to the environment.” *UNEP/AMAP (HRSG.), Climate Change and POPs: Predicting the Impacts*, 2011, pp.12–14.
- Boxall, Alistair BA, et al. “Impacts of climate change on indirect human exposure to pathogens and chemicals from agriculture.” *Environmental health perspectives*, vol. 117, no. 4, 2009, pp. 508–14.
- Chattopadhyay, Bodhisattva. “On the Mythologerm: Kalpavigyan and the Question of Imperial Science.” *Science Fiction Studies*, vol.43 no. 3, 2016, pp. 435–58.

- Composite Water Management Index, NITI Aayog, August 2019.  
[http://social.niti.gov.in/uploads/sample/water\\_index\\_report2.pdf](http://social.niti.gov.in/uploads/sample/water_index_report2.pdf).  
Accessed 24 December 2022.
- Conrad, Joseph. *Heart of darkness*. Egypt, Dover Publications, 1990.
- Csicsery-Ronay Jr., Istvan. 2005. "Science Fiction/Criticism." *In A Companion to Science Fiction*, edited by David Seed, New York: Blackwell, 2005, pp. 43–59.
- Dwivedi, Om Prakash and Aleks Wansbrough. "Living in dystopia: Fractured identities and COVID-19." *Journal of Postcolonial Writing*, vol. 58, no. 2, 2022, pp. 147–55, <https://doi.org/10.1080/17449855.2022.2040721>.
- Ghosh, Amitav. *The Great Derangement Climate: Change and the Unthinkable*. The U of Chicago Press, 2016.
- Glotfelty, Cheryll. "Introduction: Literary Studies in an Age of Environmental Crisis." *The Ecocriticism Reader: Landmarks in Literary Ecology*, edited by Cheryll Glotfelty & Harold Fromm, U of Georgia, 1996, pp. viii–xix.
- Gough, Noel. "Playing with wor(l)ds: science fiction as environmental literature." *Literature of Nature: An International Sourcebook*, edited by Patrick D. Murphy, Chicago and London: Fitzroy Dearborn, 1998, pp. 409–14.
- Gouin, Todd, et al. "Influence of global climate change on chemical fate and bioaccumulation: The role of multimedia models." *Environmental Toxicology and Chemistry*, vol.32, no. 1, 2013, pp. 20–31.
- Griffin, Dori. "Visualizing Eco-dystopia." *Design and Culture*, vol. 10 no. 3, 2018, pp. 271–98.
- Gunn, James. "Towards a Definition of Science Fiction." *Speculations on Speculation: Theories of Science Fiction*, edited by James Gunn, 2005, pp. 5–12.
- IPCC. *Climate Change 2021 the Physical Science Basis Working Group I Contribution to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change*. Switzerland, IPCC, 2021.
- Jaipur Literary Festival. "South Asian Science Fiction: Tarun K. Saint, Vandana Singh, Manjula Padmanabhan with Arunava Sinha." *Youtube*, 23 Mar. 2022. <https://www.youtube.com/watch?v=ANQ2psd1A7M&t=1421s>. Accessed 16 Mar. 2023.
-

- Johnson, Isaijah. "Solarpunk" & the Pedagogical Value of Utopia." *Journal of Sustainability Education*, vol. 23, 2020.
- Kadagishvili, D. "Metamodernism as we Perceive it (Quick Review)." *European Scientific Journal*, Vol. 9, no. 10, 2014, pp. 559–65, doi: 10.19044/esj.2013.v9n10p%25p.
- Kapur, Devesh, et al. "Climate Change: India's Options." *Economic and Political Weekly*, vol. 44, no. 31, 2009, pp. 34–42, <http://www.jstor.org/stable/25663389>.
- Khan, Sami A. "The Day After Tomorrow in Bengaluru: Environment, Global Climate Change and Dystopia(s)." *Science Fiction in India: Parallel Worlds and Postcolonial Paradigms* Bloomsbury, 2022, pp.108–22. doi:[10.5040/9789354356742.ch-007](https://doi.org/10.5040/9789354356742.ch-007)
- Lavigne, Carlen. *Cyberpunk Women, Feminism and Science Fiction*. McFarland, 2013.
- Mackey, Allison. "Guilty Speculations: The Affective Climate of Global Anthropocene Fictions." *Science Fiction Studies*, vol. 45, no. 3, 2018, pp. 530–44, <https://doi.org/10.5621/sciefictstud.45.3.0530>.
- Rivero-Vadillo, Alejandro. "Challenging Solarpunk's Technophilia through Degrowth Imaginaries in Julia K. Patt's "Caught Root" and Linda Jordan's "Reclaiming"." *Ecocene: Cappadocia Journal of Environmental Humanities*, vol. 3, no. 1, 2022, pp. 41–55, <https://doi.org/10.46863/ecocene.64>.
- Reina-Rozo, J. "Art, energy, and technology: the Solarpunk movement." *International Journal of Engineering, Social Justice and Peace*, vol. 8, no.1, 2021, pp. 47–60, <https://doi.org/10.24908/ijesjp.v8i1.14292>.
- Roychowdhury, Anumita, et al. *At the Crossroads*. Centre for Science and Environment, New Delhi, 2019.
- Rueckert, William. "Literature and Ecology: An Experiment in Ecocriticism." *The Ecocriticism Reader: Landmarks in Literary Ecology*, edited by Cheryll Glotfelty & Harold Fromm, U of Georgia, 1996, pp. 105–23.
- Saint, Tarun K., editor. *The Gollancz Book of South Asian Science Fiction*. Hachette UK, 2019.
- Schueman, Lindsey Jean. "Welcome to the Wood Wide Web." *One Earth*, 21 Oct. 2021, [www.oneearth.org/welcome-to-the-wood-wide-web/](http://www.oneearth.org/welcome-to-the-wood-wide-web/).
- Singh, Vandana. "Indra's Web." *Ambiguities Machines and Other Stories*, Zubaan, 2018, pp. 142-51.
- Singh, Vandana. *Ambiguities Machines and Other Stories*. Zubaan, 2018.



- Singh, Vandana, “A Speculative Manifesto.” *The Woman Who Thought She Was a Planet and Other Stories*, Delhi: Zubaan, 2008, pp. 200–3.
- Singh, Vandana. “The Untinkability of Climate Change: Thoughts on Amitav Ghosh’s *The Great Derangement*.” *Strange Horizons*, 2017, <http://strangehorizons.com/non-fiction/reviews/the-unthinkability-of-climate-change-thoughts-on-amitav-ghoshs-the-great-derangement/>
- Suvin, Darko. *Metamorphoses of Science Fiction: On the Poetics and History of a Literary Genre*. Yale University Press, 1979.
- “The Future is a Journey to the Past: Stories About Sustainability.” *ArchDaily*, 12 Sept. 2022, [www.archdaily.com/988797/the-future-is-a-journey-to-the-past-stories-about-sustainability](http://www.archdaily.com/988797/the-future-is-a-journey-to-the-past-stories-about-sustainability). Accessed 11 Dec. 2022.
- O’Callaghan, Jonathan. “NASA’s Retiring Top Scientist Says We Can Terraform Mars and Maybe Venus, too.” *The New York Times*, 2 Jan. 2022, [www.nytimes.com/2022/01/02/science/jim-green-nasa-mars.html](http://www.nytimes.com/2022/01/02/science/jim-green-nasa-mars.html).
- Wagner, Phoebe, and Brontë C. Wieland, eds. *Sunvault: Stories of Solarpunk and Eco—Speculation*. Nashville, TN: Upper Rubber Book, 2017.
- Weir, Kirsten. “Nurtured by Nature.” *American Psychological Association*, vol. 51 no.3, 2020, pp. 50–56.
- Więckowska, Katarzyna. “Appositions: The Future in Solarpunk and Post-Apocalyptic Fiction.” *Text Matters*, no. 12, 2022, pp. 345-359, <https://doi.org/10.18778/2083-2931.12.21>.
- World Bank. *Climate Investment Opportunities in India’s Cooling Sector*. Washington, 2022. <http://hdl.handle.net/10986/38340>.
- Woodrow, L. *Climate science communication, storytelling, narrative, Cli-fi*, MA thesis, Southern Cross University, Lismore, NSW, 2019.