

The Humanities' Role in Addressing Climate Change Through Fictional Narratives

Nasreddine EL Guezar

Mohammed I University, Oujda, Morocco

Abstract

Tackling environmental challenges has required the expertise of fields outside of science, namely the humanities. Literature, in particular, has largely contributed to global environmental protection. More specifically, this paper suggests that fiction stories have actively participated in helping scientists and nonscientists alike to shape better environmental sense for their readers. To illustrate, the texts of many influential environmental writers, such as John Muir and Rachel Carson, incorporate stories in scientific writing to successfully impact readers and develop planetary awareness and responsibility. In highlighting the role of literature and stories in making the environmental discourse effective for environmental scientists, this paper also turns attention toward the literary genre of speculative fiction. The environmentally-abundant writings of speculative fiction can actively challenge and expand our assumptions on many human and nonhuman issues. Additionally, since these narratives call for critical approaches that interpret their environmental meanings, ecocriticism can be a reliable interdisciplinary lens in this regard. The ecological literary approach facilitates both reading environmentally-focused fiction as well as connecting scholars and practitioners from different fields to collaborate under the encompassing field of the environmental humanities.

Keywords: science and the humanities, climate change, speculative fiction, ecocriticism, the environmental humanities

The academic disciplines in the humanities are becoming increasingly pertinent to the subject of the environment. Most of those who research the topic of the environment tend to approach it from a scientific perspective, but more recently, research on the environment is relying less exclusively on scientific information and data. The environmental dilemmas have grown in complexity, and it has become inadequate to tackle them relying on the natural and physical sciences alone. In other words, responding properly to climate change and the environmental cause, in general, has required the collaboration of experts from all disciplines of knowledge. Academic fields of the humanities such as philosophy, history, and literature have been largely contributing to the environmental discussion. It is, therefore, critical that scholars from various scientific disciplines become acquainted with what the humanities have to offer to the most perplexing environmental issues.

Although they both seek to understand the world, science and the humanities follow different methods of inquiry. Science is generally inclined to be objective, precise, rigorous, and factual while the humanities, in contrast, tend to be more subjective, complex, theoretical, and interpretation-based. In regards to the environment and natural elements, science and the humanities take different approaches in that science focuses largely on explaining the function of things rather than their meaning or value per se. Hubbel and Ryan (2021) succinctly put it in their *Introduction to the*

Environmental Humanities, when they say that “Science tells nothing about the value of nature, only how it functions. We turn to literature and the humanities generally to understand why nature is meaningful” (p. 176). That is, science and scientists can hardly explain why the environment and nonhuman species matter if their function in the ecosystem is not clear. Explaining the value, then, is just as important as explaining the function if we want to address climate change and other environmental issues.

When the world started acknowledging the existence of a global environmental crisis in the mid-fifties of the last century, the humanities gradually responded to environmental issues from within their fields. Researchers from different backgrounds slowly turned their attention to the new environmental insights within the humanities. Literature, a substantial subfield within the humanities, relates meaningfully to the environment in the sense that many literary works have an embedded environmental orientation. Most literary writers tend to move readers towards appreciating their place, natural environments, and nonhuman species. “Environmental literature shows us how to ‘see’ the places where we live, revaluing what we’ve overlooked or ignored, and entering into more reciprocal relationships of care” (Hubbell & Ryan, 2021, p. 183). This, in turn, influences the readers’ attitudes toward the environment. In other words, fiction stories in literature have the potential to shape a better understanding of planetary issues and contribute to environmental protection.

Scientific data and rigorous statistics assist us in comprehending the gravity of many environmental issues; however, they lack the power to influence readers emotionally. In his *Anthropocene Fictions: The Novel in a Time of Climate Change*, Adam Trexler (2015) suggests that the Anthropocene, or the age when human activities started causing global environmental changes, requires more than scientific modes of understanding. Trexler asserts that works of nonfiction “are more direct in their warnings, [...] they also lack the novel’s capacity to interrogate the emotional, aesthetic, and living experience of the Anthropocene” (p. 6). Compared to scientific texts, literature has a greater ability to influence readers. Literary stories, in particular, can widely contribute to changing human behavior and encourage environmentally conscious practices in their readers, who could be scientists, policymakers, activists, engineers, and specialists in other academic and professional domains.

Given their capacity to speak more powerfully, attributes of fiction and storytelling have been used by many non-humanities practitioners, such as John Muir. Also known as the “Father of the National Parks”, Muir was an ecological thinker, political spokesman, and conservationist. His writings have had a “lasting effect on American culture in helping to create the desire and will to protect and preserve wild and natural environments” (Miller, 2005, p. 174). Muir’s writing legacy has inspired people to care about the environment and work for its causes; it has sparked more activism for natural conservation to be followed. As a commentary on some of Muir’s letters, the author Terry Gifford (1996) elucidates that Muir has been more environmentally influential through his literary writings.

They were deepest in his affections, and under his playful prose-poetry it is not difficult to discover the Muir who in a few years was to arouse the whole nation to the importance of preserving for future generations these greatest and most ancient of all living things. His love for them had in it something personal, and

there are those who have overheard him talking to them as to human beings.
(p. 139)

Muir's writings have been emotionally effective in touching readers from different backgrounds, one of whom is President Theodore Roosevelt. After he had read Muir's writings, Roosevelt met Muir and discussed environmental protection and parks policy (The Attic, 2018). As a result, the meeting accelerated efforts to conserve larger parts of Yosemite park and facilitated the work of the Sierra Club.

The use of literary style to speak for the environment has not been limited to a certain category of environmental activists or conservationists. Many scientists have also relied on stories to cause an impact on their readers. Commonly referred to as "the mother of environmentalism", Rachel Carson was an American marine biologist who revolutionized the global environmental movement in the mid-twentieth century. Unlike other environmental scientists in her era, Carson relied on a literary language to communicate her message effectively. Through the use of fables and stories, Carson was successful in influencing her readers. Her books, *Under the Sea Wind* (1941), *The Edge of the Sea* (1955), *The Sea Around Us* (1961), and *The Sense of Wonder* (1965) all combine scientific data with a literary style to have a great effect on the readers.

In her most influential book, *Silent Spring* (1962), Carson relies on a literary style to create a strong effect on her audience about the adverse environmental effects of DDT pesticides. Right from the beginning of her "Fable for Tomorrow", Carson (2002) writes: "There was once a town in the heart of America where all life seemed to live in harmony with its surroundings" (p. 1). The sentence hooks most readers from the very beginning of the book. Many scholars praise the fable and its power to persuade. David Rejeski (2007), for example, states in a paper entitled, "Why Nano Fear Will Not Disappear", that the "fable moved beyond the science to a dystopian vision of the future and may have been the book's most powerful section" (p. 1). The vivid presence of the narrative style is undoubtedly a major strength of Carson's text and is a deciding factor in the effectiveness of her words, which translated into action when the US government issued the decision to stop the use of DDT in 1972. *Silent Spring* is not an exception for Carson. Her other "letters and journals bring the reader into her personal environmental struggles, including her final effort to save land in the Maine wilderness that she loved" (Jolly, 2001, p. 643). Nobody can deny the role Carson played in starting a global environmental movement, a role that could have been delayed if she had not used narratives and prose within her scientific writing.

The use of stories might put writers at risk of being openly subjective about the environmental cause; however, an over-reliance on objectivity could be harmful to the environment as well. To explain, Niel Evernden, an ecologist and professor of environmental studies, shares an incident that exemplifies the risks of relying only on rational scientific knowledge in environmental contexts. Evernden narrates the time when he was sitting at a cafeteria table with some other biologists. As they were discussing the possibility of building a railroad through Wood Buffalo National Park in northern Canada, a line that would have passed through the only eighteen remaining nesting grounds of whooping cranes, one biologist at the table asked, "So what—what good are whooping cranes?" The fact that Evernden (1978) could not think of an answer irritated him the most:

What annoyed me most was that, for the life of me, I couldn't think of a single use for Whooping Cranes. They don't sing or eat harmful insects—you can't even claim them as a tourist attraction. Instantly, because our entire justification for existence of non-human nature was based on utility, our ability to defend the Whooping Crane disintegrated. To justify the birds, we had to fall back on—dare I say it?—subjective arguments. (p. 16)

Reductionist facts, dry numbers, and practical utility may be detrimental to the continued existence of many species. That is why we must consider subjective justifications in order to defend non-human species. For a more effective discourse on environmental protection, we need to turn to stories once again.

Environmental experts from non-humanities backgrounds are slowly shifting towards a literary style to better move their readers. That is, the role of fiction stories is becoming highly important in inspiring hope and change in the context of environmental protection. Denise Baden, an Associate Professor in Business Ethics at the University of Southampton explores the impact of stories on readers' behavior. Baden (2018) contends that "[t]he transition to a sustainable society requires profound changes, but to imagine how all of these aspects can come together is currently the domain of creative fiction. If we want a better world then the first step is to imagine one". The distinguished professor of literature and environment, Scott Slovic, supports this direction. Slovic (2008) argues that literature "has the potential to help readers reimagine their relationship with the planet and overcome crippling fears and feelings of alienation" (p. 153). Considering the prevalence and growth of environmental-themed stories. This necessitated the development of a way of reading and analyzing environmental themes in fiction.

To help readers and academics better understand literary texts with environmental implications, the field of ecocriticism, also known as ecological literary criticism, was established. Cheryll Glotfelty (1996) defines ecocriticism in the following manner: "Simply put, ecocriticism is the study of the relationship between literature and the physical environment ... [It] takes an earth-centered approach to literary studies" (p. xviii). Ecocriticism emerged in the 1990s and was noted for being developed through two waves, the first of which was concerned with nature writing, particularly writings by the Romantic poets in Britain such as William Wordsworth, Percy Shelley, John Keats, and William Blake, as well as the transcendentalist writers in the US, namely Henry David Thoreau and Ralph Waldo Emerson. The second wave is considered a mature development of ecocriticism and has been directed toward the environmental problems of the day. It encourages questioning deeper ethical and cultural dimensions of the present-day planetary challenges (Buell, 2005, p. 21-22). Given that ecocriticism has reached a mature stage and become a reliable lens through which we can study literary texts, it is important to clarify how it works and some of the questions it explores.

Like any critical literary approach, ecocriticism can be used as a lens to examine, investigate, and analyze literary texts. When dealing with the text, ecocritics may ask questions such as the following ones, that were laid out finely by Charles Bressler (2011):

- What do we mean by "nature," both in a given text and in our world?

- How is nature portrayed in a text?
- How are the characters in a text portrayed in relationship with nature?
- How do the characters interact with nature?
- How does nature interact with the characters?
- How does the text demonstrate how the microcosm (humanity) affects the macrocosm (nature) and how the macrocosm affects the microcosm?
- How does the actual physical setting of the text affect the text's plot?
- How are race, class, and gender illustrated in the text, and how are they related to nature or the land?
- What particular historical period is depicted in the text? How is this historical period related to issues of nature or the land?
- Is the text challenging its readers to environmental action and promoting changes in how we treat nature? Other classes? Races? Genders? (p. 237)

Looking into these questions may unleash profound environmental meanings within literary texts. There is a wide range of environmentally-oriented fiction, yet if one looks closely, they find it in speculative fiction with notable richness.

The literary genre that often depicts environmental issues in a timely and abundant manner is probably speculative fiction. Imarisha & Brown (2015) define speculative fiction as an umbrella term that refers to “science fiction, fantasy, and horror” (p. 185). Human-nature relationships, the implications of science and technology on the environment, or future scenarios of climate change are some of the issues that speculative fiction writers tackle in their stories. The professor of literature and ethnic studies at the University of California in San Diego Shelly Streeby (2018) writes that “radically transformed climates are at the heart of a lot of science fiction, so much so that a whole new subgenre called cli-fi has emerged. Cli-fi or climate change fiction is best situated within the larger category of speculative fiction” (p. 4). Speculative fiction texts are becoming an inevitable source of information for environmental specialists who wish to grasp the deeper complexities of the human factors that influence environmental issues such as climate change and its possible development in the future.

To illustrate, going through Michael Crichton's works of science fiction aids in gaining a better understanding of many world environmental problems and possible scenarios in the future. Crichton's novels have become well-known and made into blockbuster movies, including *Jurassic Park* and *The Lost World*. While they are entertaining stories about the recreation of dinosaurs, they also inspire us to ask deeper what-if questions. Creating a park of DNA-recreated dinosaurs makes us ponder the implications of the idea and how humanity would react when awry scenarios occur. In so doing, Crichton encourages us to think more critically about science optimism, technological utopia, cloning animals, biogenetic incidents, the unpredictability of nature, the use of animals for profit, and humans' treatment of environmental disasters. Examining these events and themes in Crichton's works through an ecocritical lens opens up new channels to discuss environmental decisions, actions, and consequences.

The same could be applied to other novels by other science fiction writers and more broadly speaking, speculative fiction. Orson Scott Card's *Ender* series envisions futuristic humanity that interacts with alien species from other planets. In *Ender's*

Game, for example, the writer imagines a world where human communities are battling with alien species called the buggers. When the protagonist, Andrew Wiggin, destroys the planet of the buggers and exterminates a whole race, he feels deep grief and sorrow for the species he has annihilated. Applying an ecocritical reading to the Ender series would allow us to think meaningfully about human contact with alien environments from the future. This could, on a practical level, impact readers to think empathically about the environment and nonhuman species we take for granted and call forth more planetary responsibility.

Apart from Card and Crichton, there are other speculative fiction writers such as Margaret Atwood, Ursula Le Guin, and Kim Stanley Robinson. These, among others, have been known to dive into philosophical, ethical, political, emotional, and cultural dimensions of environmental dilemmas. Considering that speculative fiction today is becoming increasingly important in the discussion of the environment and its value on deeper levels, science practitioners ought to make use of fictional stories and metaphors to back up and give life to their statistical analyses and factual predictions. “Science fiction gets people thinking in a way that another report on climate change doesn’t” confirms Shelley Streeby (Ortiz, 2019). To put it another way, a science statement is less likely to have a desired impact compared to a speculative fiction story. As a result, scientists and other non-humanities specialists need to rely more on images existing in literary genres like speculative fiction.

Reacting to the environmental questions through literature and stories, nevertheless, is only one way among many others under the larger banner of the environmental humanities. “Drawing on humanities and social science disciplines that have brought qualitative analysis to bear on environmental issues, the environmental humanities engages with fundamental questions of meaning, value, responsibility and purpose in a time of rapid, and escalating, change” (Rose et al., 2012, p. 1). Given that the most troubling environmental issues today are humane and cultural in depth, the humanities are becoming increasingly important in this regard. The professor of environmental history, Sverker Sörlin mentions a 2012 synthesis report that supports this point, “We are still living in a world where cultural values, political and religious ideas, and deep-seated human behaviors still rule the way people lead their lives, produce, and consume, the idea of environmentally relevant knowledge must change” (p. 788). For that matter, current environmental discussions need to turn attention to what literature and the humanities can offer and benefit from the possible ways of reading and analyzing the environment in literary texts.

Today's environmental concerns, which comprise ethical and cultural complexities, necessitate more than a scientific grasp. Many scientists and non-humanities practitioners have been taking advantage of the creative stories that highlight the environmental situation in alternative and expressive narratives. Although they do not exist, the universes imagined in speculative fiction stories continue to be vital to debate in connection to our own. Climate change is more than just increased levels of atmospheric carbon dioxide produced by the use of fossil fuels. It is, in fact, impossible to disentangle climate change without addressing its varied images, contexts, and other factors. The contribution of the humanities then becomes of paramount importance and helps scientists in exploring how climate change and other disturbing environmental issues are perceived, represented, and communicated across various

narratives. Speculative fictional stories and ecological literary criticism both support and advance this direction.

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Author Notes

Nasreddine EL Guezar is a doctoral candidate at Mohammed I University's Faculty of the Humanities in Oujda, Morocco. He is also a CELTA-certified and part-time EFL instructor at the American Language Center Oujda. Nasreddine has contributed to numerous journals and national and international academic conferences. At Mohammed I University, he has also taught academic courses and received extensive pedagogical training. Nasreddine has been researching the relationship between literature and the environment with a particular interest in Michael Crichton's work of science fiction.

Email address: nasreddine.elguezar@gmail.com