Climate change and ecological literacy in Ghassān Shibārū’s climate fiction novel 2022

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Abstract
Climate change has been attracting increasing attention as one of the most significant consequences of the anthropogenic global warming and fictional narratives have increasingly been involved in engaging human imagination on the topic of climate change. Climate fiction, or cli-fi, is the umbrella term that designates fiction with climate change as its main theme. Climate fiction has been primarily published in English so far and narratives specifically problematising anthropogenic climate change are still quite rare in the Arabic literary landscape. In this regard, the novel 2022 by the Lebanese author Ghassān Shibārū constitutes an interesting case, given that it is authored in Arabic but displays several of the characteristics typical of the cli-fi genre. This paper aims at providing an analysis of Shibārū’s novel 2022 as representative of Arabic climate fiction. The main features of the climate fiction genre and its relationship to the scholarship of ecocriticism are first outlined. An overview of the environment as a theme in Arabic literature and Arabic literary studies then follows. The paper subsequently presents the concept of ecological literacy, which constitutes the theoretical framework for the analysis of the characters in the novel. After a synopsis of the plot, the characters are analysed and discussed and the novel itself is examined as instance of climate fiction as intended by the Anglophone definition of the genre. The authors argue that the purpose of the novel is didactic, since, rather than narrating a fictional story, the novels exploits a fictional story in order to spread awareness of global warming and climate change.

Keywords: Contemporary Arabic literature • Climate change • Climate fiction • Ecocriticism • Ecological literacy

1. Introduction
Climate change has been attracting increasing attention as one of the most significant consequences of the global warming that characterises the Anthropocene. However, the discourse of climate change is not only restricted to the scientific community. As TREXLER puts it, “humanity has discovered itself to be implicated in a geological transformation of the Earth, with profound implications for nearly all our reference points in the world” (2015: 5). Consequently, fictional narrative and other forms of artistic expressions have increasingly
been involved in engaging human imagination on the topic of climate change and its consequences. As Hughes and Wheeler claim, “climate change has made its way towards the mainstream in recent years, on both the screen and the page, and has now eclipsed nuclear terror as the prime mover of the apocalyptic and dystopian imagination” (2013: 1).

Climate fiction, or cli-fi, is the umbrella term that designates fiction with climate change as its main theme. Climate fiction has been primarily published in English so far but, as TREXLER notes, “climate fiction has slowly emerged as an international phenomenon” (2015: 10). In this regard, the novel 2022 by the Lebanese author Ghassān Shibārū constitutes an interesting case, given that it is authored in Arabic but displays several of the characteristics typical of the cli-fi genre as manifested within a Western literary framework. Published in 2009 and as yet to be translated, Shibārū’s novel 2022 has received little attention from either the Arabic or the Anglophone literary scene.

This paper aims at providing an analysis of Shibārū’s novel 2022 as an example of Arabic climate fiction. The main features of the climate fiction genre and its relationship to the scholarship of ecocriticism are first outlined. An overview of ‘environment’ as a theme in Arabic literature and Arabic literary studies then follows. The paper subsequently presents the concept of ecological literacy, which constitutes its theoretical framework for the analysis of the characters in the novel. After a synopsis of the plot, the characters are analysed and discussed and the novel itself is examined as instance of climate fiction according to the Anglophone definition of the genre.

2. What is climate fiction?

Within the Anglophone literary context, climate fiction is defined as narrative concerned with the consequences of anthropogenic climate change. In use since 2000, the term Anthropocene indicates the period in the Earth’s history characterised by the impact of human activity that has led to significant alterations in global temperature and climate—including, but not limited to the burning of fossil fuels and the resulting generation of greenhouse gases, the increase in human population and the large-scale, indiscriminate exploitation of the planet’s natural land and water resources (TREXLER 2015).

In terms of designation, climate fiction often intersects and overlaps with other popular kinds of genre fiction, like utopias/dystopias, science and post-apocalyptic fiction, fantasy, horror, thrillers, action/adventure stories, and even romance and satires, as well as with more “high-brow” literary forms (JOHNS-PUTRA 2016; LEMENAGER 2017; SCHNEIDER-MAYERSON 2018; TREXLER 2015; TREXLER & JOHNS-PUTRA 2011). However, “novels about the Anthropocene cannot be easily placed into discrete generic pigeonholes” (TREXLER 2015: 14). For this reason, any novel directly or indirectly concerned with climate change and its

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1 BOULD uses less neutral terms and places blame more explicitly on human impact: “It describes the period in which human activity has disrupted significant geological conditions and processes, and/or in which traces of human activity can be discerned in the geological record” (2021: 7).
environmental, social, cultural and/or political implications may be now considered as climate fiction.

Literary research has also been increasingly interested in climate fiction and a variety of topics have been debated. Among them are the genre’s scope in connection with reader’s response, its relationship to the notion of scientific truth, and whether cli-fi may even be considered a genre in its own right. Since the start of the twenty-first century, a canon of climate change fiction has been developing and several attempts have been made to draw up typologies of the genre using factors such as purpose and narrative structure. As for purpose, the two main issues frequently debated are the genre’s potential as a tool for imagining different climate change futures, and the nature of climate fiction, as climate fiction makes it difficult to distinguish facts from fiction because of its relationship to the science of climate change.

With regard to climate fiction’s narrative structure, and in particular to its time settings, literary criticism has identified two main trends (JOHNS-PUTRA 2016). Novels set in the present or in a very near future draw their imaginative appeal from a sense of anticipation, and that generally portray the threat of climate change as a political, ethical, or psychological problem that requires individuals’ commitment. Novels with futuristic, dystopian and post-apocalyptic settings involve the imagining of catastrophe, and tackle climate change “not just as an internal or psychological problem” but also as part of wider portrayals of social collapse that include “technological over-reliance, economic instability, and increased social division” (JOHNS-PUTRA 2016: 269). MAYER develops this time setting distinction within the discourse of risk narratives to differentiate between “narratives of catastrophes” (2014: 24), that is narratives where the risk scenario of climate collapse has already materialised, and “narratives of anticipation”, that “concentrate[s] on the state of anticipation, on the moment of uncertainty in the present when awareness of the risk figures prominently and controversially in a culture, but has not yet led to catastrophe” (2014: 26).

3. The environment and climate change in contemporary Arabic literature

As far as the field of ecocriticism is concerned, a number of articles have recently appeared on the Arabic scene. One of the most comprehensive is MUHAMMAD’s analysis of the growth of Arabic ecocritical studies by Arab authors since 2018 (2022: 470), although he points out that “not all literature describing nature is environmental literature” (2022: 464).


3 For an extensive discussion of this topic, see TREXLER 2015: 29–74.

4 In addition to MUHAMMAD’s bibliographic study (2022), see also THĀMĪR 2019, BADRĀN 2019 as well as the section Al-naqād al-bīt in the winter 2018 issue of Fustāl. Among the studies concerned with specific works and/or authors, the ones worth mentioning are SHINQĀR 2020, GHANĪMA 2017 and al-RUBAY’I 2019 and 2020.
In order for it to be considered environmental literature, he claims that a literary text must fulfil a number of requirements, such as addressing central environmental issues or spreading environmental awareness. More specifically, environmental literature has to reflect "the writer’s perception of nature" (2022: 464). By this he means the writer’s concern for the environment and the writer’s ability to shift a narrative’s focus from dealing with social issues to environmental ones, as well as to envision what the consequences may be as a result of abusing nature. Because of its own character, he continues, prose is more suitable than poetry as environmental texts (2022: 469).

Considering contemporary Arabic literature, the Arabic literary interest in nature and the environment is relatively recent. Among the number of works that deal with the environment, the most representative in this regard is probably the Cities of Salt (Mudun al-Milh) series of novels by the Saudi novelist 'Abd al-Rahmān Muñif (1988-1989), which tackles the consequences of the discovery of oil for society and the environment. Several works by the Libyan writer Ibrāhīm al-Kūnī’s are also deeply engaged with the environment, and specifically with the Libyan desert, which is portrayed as both a setting and a protagonist. Among more recent examples, and more specifically related to climate change, is the novel Al-Iskandariyya 2050 by Faḥmāwī (2009). Set in the aftermath of an environmental catastrophe caused by global warming, a fictional Alexandria is flooded and a new "green human being", a combination of human and plant cells, will save the world. In addition, some dystopian fiction published in the last decade may also be related, in one way or another, to the climate crisis. In her "Environment and Climate Change in Contemporary Arabic Dystopian Fiction," PEPE discusses the two Egyptian graphic novels Using Life (Istikhḍām al hayāḥ) by Ahmed Naji and The Solar Grid by Ganzeer, as well as two Iraqi short stories in the collection Iraq +100, namely The Gardens of Babylon by Hassan Blasim and The Worker by Diaa Jubaili (2022). She notes that the apocalyptic scenarios of some contemporary Arabic dystopian fiction are caused by climate change and its consequences, such as heatwaves, sandstorms, desertification, resource exploitation as well as air and water pollution. While she calls for an increased attention to the impact of climate change in "everyday realities across the Middle East" within contemporary Arabic fiction (2022: 7), she also points out that "Arabic scholars and critics have not yet instigated their own critical discourse on Arabic climate fiction" (2022: 2).

Although climate fiction has started to emerge as a genre outside the Anglophone world, narratives specifically problematising anthropogenic climate change are still quite rare in the Arabic literary landscape and both JOHNS-PUTRA’s list (2016: 269) and TREXLER’s overview (2015: 10) of internationally authored cli-fi unsurprisingly lack titles of Arabic novels. As GHASHMARI puts it, "Arabic fiction [...] that addresses the climate crisis in the Middle East is astonishingly rare" (2022: 40). Climate fiction is only marginally dealt with in a few newspaper articles that review selected works of cli-fi narratives written in English (‘ABDALLAH 2019, GHĀLĪ 2020). However, it is essential to mention that any estimation of

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5 For example Nazīf al-ḥajār (The bleeding of the stone, 1992); the short stories Nadhr al-hatīl (The vow of the Virgin Mary) and Ilā ‘ayna ‘ayyuhā l-hadāwī, Ilā ‘ayna (Where to Beduin, where to?) from the collections al-Khurūj al-ʿawwal (The first exit, 1992) and al-Qafās (The cage, 1992) respectively.
the actual scale of Arabic cli-fi is affected by the difficulty in locating cli-fi works as yet untranslated into English. To be fair, TExLER does call for more research on climate fiction published in languages other than English (2015: 10).  

Despite the environmental threats that Middle Eastern countries are facing because of climate change issues, as a genre Arabic climate fiction has not found the same fertile soil within the Arabic literary scene as in the West. Whether or not this is due to the “traditionally narrow scholarly conception of contemporary Arabic literature” (SNIR 2017: 11) is beyond the scope of this paper. The fact remains that the Middle East is deeply affected by the climate crisis and Arabic literary scholars appear concerned with climate issues. Arab university scholars whom we contacted stated their regret that there was not more interest in climate issues in contemporary Arabic literature. According to ASHABŪN, the scarcity of both Arabic climate narratives and of critical academic studies dealing with climate change in contemporary Arabic literature can be attributed to  

 [...] first, the absence of a culture of preservation of the environment in our Arab societies, as the environmental aspect is the last point in the government’s agenda; second, to the pale presence of some wild political parties that raise the banner for defending the environment and attempt to raise the alarm about the dangers of climate change and the human role in it; and, third, the limited interest of our civil society in the environmental aspect. (Personal communication, April 5, 2022).

For his part, ‘ABBĀS attributes the lack of literary treatment of climate change issues not only to politics but also to the essence of Arabic narrative. He claims that

given the almost complete concern of the Arabic novel with the political dimension [...] and the limited freedom in Arab societies [...] , authors’ interest in other aspects of the human experience has diminished, including the greatly important issues of climate change. [...] These are topics that the Arabic political establishment usually places as lowest and last among its concerns. The Arabic novelist contributes by not paying attention to this aspect of the

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7 For a discussion on “legitimate literature” and on genres not recognised in the “scholar conception of contemporary Arabic literature” see JACQUEMOND 2016 and SNIR 2017. For a general outline of the Arabic literary canon, see ALLEN 2018.

8 See for example ESCWA 2017, ICRC 2019, AL-MUQAMAR 2012, SAYYID 2019, TOLBA & SAAB 2009, UN-HABITAT 2022, UNDP 2018. Climate change is also a popular topic on the world wide web: for example, RAMSAY reports of Lebanese blogs “especially concerned with environmental issues and climate change” (2022: 12).

9 ‘Abd al-Mālik ASHABŪN is professor of Narratology at the University of Fez.

10 All translations from the Arabic are our own.

11 Lu‘ayy Ḥamza ‘ABBĀS is professor of Modern Arabic literature at the College of Arts at Basra University.
human experience, ignoring the negative climate situation and its destructive effects on life on the planet, which confirms the decline of ecological awareness as a dangerous indicator of the absence of environmental culture. (Personal communication, April 6, 2022).

Finally, Nūri\textsuperscript{12} also regrets the scarcity of novels dealing with climate change because “the recurrence of natural disasters, global warming, and the increase in hurricanes and floods should excite the novelist’s enthusiasm”. Attributing to fiction a sort of healing power for the human psyche, he hopes that Arab novelists will pay attention to it, as “what is said in the novel cannot be said by any other form of expression” (personal communication, April 7, 2022).

4. Ecological literacy

Modern scholarship understands the concept of “literacy” as “a tool for knowledge construction” (McBRIDE et al. 2013). Ecological literacy, therefore, is literacy applied specifically to the environment. Sometimes called environmental literacy or eco-literacy (ecoliteracy), this term was originally coined by Orr in his seminal work *Ecological Literacy: Education and the Transition to a Postmodern World*. There he states that

[t]he ecologically literate person has the knowledge necessary to comprehend interrelatedness, and an attitude of care or stewardship. Such a person would also have the practical competence required to act on the basis of knowledge and feeling. […] Knowing, caring, and practical competence constitute the basis of ecological literacy.

Ecological literacy, further, implies a broad understanding of how people and societies relate to each other and to natural systems, and how they might do so sustainably. It presumes both an awareness of the interrelatedness of life and knowledge of how the world works as a physical system. To ask, let alone answer, “What then?” questions […] Ecological literacy presumes that we understand our place in the story of evolution. It is to know that our health, well-being, and ultimately our survival depend on working with, not against, natural forces. (Orr 1992: 92-93)

In such terms, ecological literacy has been employed as tool of analysis by other scholars of Arabic literature. Worth mentioning are Ramsay’s analysis of an Egyptian short story (2020)\textsuperscript{13} where the main character ecologically interacts with a flock of Nile birds appearing at a café in central Cairo, as well as Elmusa’s analysis of what he defines the “Ecological

\textsuperscript{12} Shākir Nūri is a scholar of Arabic literature and guest professor at the Sorbonne and the University of Dubai.

\textsuperscript{13} The short story analysed is *al-Mab’a’a al-Qadima* (*The Old Print-Press*) by Muḥammad al-Mansūr Qandīl.
Bedouin” and his environmental ethos in three desert novels (2013). Both articles demonstrate that, in their respective narratives, the characters show an understanding of the interrelatedness of societies and natural systems: the main character of the short story “is on his way to become ecolate” (Ramsay 2020: 9) and the Ecological Bedouin “embodies the desert’s geography, history, and imaginative inheritance”, resulting in “the ‘conscience of nature’” (ELMUSA 2013: 29 and 33 respectively).

Since ORR’s work was published, numerous scholars have attempted to operationalise the concept of ecological literacy and take into consideration different factors and their impacts on the person and the environment. In particular, CUTTER-MACKENZIE and SMITH have developed the concept of eco-literacy and constructed a table of four eco-literacy levels. In order to assess the degree of a person’s ecological literacy, they coined the concept of eco-literacy so as to “appropriately encapsulate (measure) both ecological literacy (complex knowledge) and environmental (eco) philosophy (belief) indicators” (2003: 502). The model uses the concepts of complex knowledge, belief, and eco-philosophy to measure an individual’s relationship to the environment. Individuals can demonstrate, therefore, one of the following four levels of ecological literacy:  

<table>
<thead>
<tr>
<th>Ecological Literacy</th>
<th>Complex Knowledge</th>
<th>Beliefs</th>
<th>Eco Philosophy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ecological Illiteracy</td>
<td>little understanding and many misconceptions of environmental issues / crisis</td>
<td>the environment is a resource to be used by human beings</td>
<td>technocentric (anthropocentric) perspective</td>
</tr>
<tr>
<td>Nominal Ecological Literacy</td>
<td>recognition and use of some basic terms used in communicating about the environment; beginning to identify environmental problems and issues / proposed solutions</td>
<td>developing awareness and sensitivity towards the importance of natural systems and the human impact on them</td>
<td>accommodation perspective</td>
</tr>
<tr>
<td>Functional / Operational Ecological Literacy</td>
<td>understanding of the organization and functioning of environmental systems and their interaction with human systems; possession of the knowledge and skills to act on local problems and be involved with environmental concerns</td>
<td>belief in the intrinsic importance of nature for defining and sustaining humanity</td>
<td>communalist (eco-socialist) perspective</td>
</tr>
</tbody>
</table>

14 The three desert novels are Endings by ʿAbd al-Rahmān Munīf, The Bleeding of the Stone by Ibrāhīm al-Kūnī, and Seeds of Corruption by Ṣabrī Mūsā.

15 For a full account of the development of the concept, see McBRIDE ET AL. 2013.

16 Original italicisation. For the purposes of this article, we use “eco-literacy” and “ecological literacy” synonymously and make no distinction between them.

17 This is an abridged version of the four literacy levels. For the full table, see CUTTER-MACKENZIE & SMITH 2003.
Highly Evolved Ecological Literacy | thorough understanding of how people and societies relate to each other and to natural systems; thorough understanding of the dynamics of the environmental crisis | belief in the intrinsic importance and preservation of the environment for defining nature and sustaining humanity | Gaia ecocentric perspective

Because the levels distinguish between the knowledge and beliefs of individuals, this model seems particularly suitable for assessing the ecological literacy of the characters in fiction, particularly climate fiction, on the basis of both their deeds and their thoughts throughout the narrative.

5. 2022 by Ghassān Shibārū

Ghassān Shibārū is a Lebanese novelist and environmentalist. He is the author of the children’s picture books series ʼHayawānāt fī dawwāmat al-khaṭṭar (Animals in danger) as well as a number of works of fiction for children and young adults concerned with climate issues. Shibārū’s novel 2022 was published in Arabic in 2009 in Beirut.

5.1 Synopsis

2022 tells the story of a Lebanese climate activist and her struggle with an industrial world governed by economic interests. Set against the background of a series of natural catastrophes brought about by climate change, the novel is explicitly concerned with anthropogenic climate change and global warming as a result of human impact on the environment. The story focuses on the issues caused by the rise of carbon dioxide levels and air pollution, along with the negative effect of factories and industrial waste.

The two main characters in the novel are the antagonists Diyānā Fāris and Manṣūr Qāshūsh. A supporter of the environment and a declared enemy of pollution, Diyānā Fāris calls for a green world throughout the whole novel. She leaves behind a comfortable life, with all its temptations in order to realise her dream of the Green Palm Village (Qaryat al-nakhl al-khaḍrāʾ), an environmentally-friendly, self-sufficient, zero-emissions residential village complete with governmental institutions, healthcare services and leisure facilities such as a hotel and gym (p. 31). Her antagonist is Manṣūr Qāshūsh, a greedy tycoon, owner of several companies and industries, as well as a hospital and a bank, whose endeavours focus on preventing Diyānā from succeeding with her project. Qāshūsh will do anything to earn

18 See for example al-RUBAY’I 2023.
19 GHASHMARI observes that Manṣūr Qāshūsh is a name that carries symbolic meaning in Arabic: “his first name means ‘the victorious’ […]. He gets anything he wants by any means necessary. […] His last name means the one who devours everything, and everyone, around him. He believes that he can enslave everyone with money” (2022: 41). On a similar note, we may add that the name Diyānā Fāris also carries symbolic meaning, with comparison to Diana, the Roman goddess of wild animals and the hunt, and Fāris translated as ‘knight’, ‘chevalier’ or ‘paladin’.
20 All page references are taken from the novel’s 2009 Arabic edition.
money regardless of any negative consequences for human life and the environment. The conflict between Diyānā and Qāshūsh develops in parallel, eventually turning into a struggle between good and evil. In the end, good triumphs over evil: Diyānā gets a seat in the Lebanese Parliament, from where she can finally drive her policies of defending and protecting the environment and impose sanctions on Qāshūsh, thus exposing the falseness of his actions.

The story begins with an invitation to the Green Palm Village inauguration ceremony in 2021. It then flashes back to 2006, when Diyānā’s story begins, and concludes with Qāshūsh’s death, some time after the Green Palm Village project has been realised. During the unfolding of the story, a series of environmental disasters occur, both locally and worldwide, ranging from forest fires, hurricane-force winds, rising temperatures, heavy rains, retreating seas, wind and desert storms to high seas and floods, water crises and drought. The novel also reports the negative impact of these catastrophes on animals, such as birds, turtles, fish and whales, as well as on vegetation, population (elderly citizens), agriculture, the economy and nature in general.

5.2 The characters and ecological literacy: literates and illiterates

According to our interpretation of the CUTTER-MACKENZIE and SMITH model of ecological literacy, Diyānā Fāris is the quintessential Highly Evolved Ecologically Literate person. She believes passionately in the importance and preservation of the environment and in living sustainably. From the very beginning of the novel she makes her position clear, stating that she aims “at defending the environment of my country and the health of its citizens” (p. 13).

The novel opens with an invitation, printed on recycled paper, being received by one of Qāshūsh’s secretaries, inviting him to the inauguration of the Green Palm Village. This environmentally-friendly, sustainable village that is 100% emission-free has been Diyānā’s dream. She has worked on it for ten years, raised funds for it and now, on June 5, 2021, it has finally become a reality (p. 9). During her speech at a United Nations Organisation conference, she presents the village’s environmentally-friendly characteristics, namely (p. 32):

1. no cigarettes or water pipes allowed;
2. no fuel-driven cars or motorbikes;
3. no electricity generated by burning fossil fuels or by gases releasing carbon dioxide; instead, electricity is self-produced from renewable sources, in particular the sun to drive solar panels; excess energy is stored in batteries;
4. no sewage discharged into the sea; instead, sewage treatment plants in order to recycle and re-use water for biological agriculture;
5. organic farming only, of vegetable crops and animal husbandry (poultry and fish);
6. warming and cooling exclusively by means of systems not releasing gases into the atmosphere;
7. structures and edifices built and insulated exclusively by means of natural construction materials, such as wood and natural clay.
With a bachelor’s degree in marketing (p. 14), Diyānā was formerly employed at Māster Bank, a financial institution owned by her antagonist Qāshūsh. Diyānā’s life then takes a decisive turn in July 2006 when, during the war with Israel, Israeli ships and airplanes bomb fuel tanks located at a power plant south of Beirut. The fuel spreads out for 150 km along the coast of northern Lebanon, polluting the water and preventing sunlight from penetrating the sea surface, so that much of the local fish population dies (p. 14). Together with her family, Diyānā seeks refuge at her uncle’s house in the city of Tripoli, the capital of North Lebanon. Immediately after the war, she joins the Green Earth Society (Jamʿiyyat al-ard al-khadrāʾ, p. 18) and becomes involved in environmental activism, distributing leaflets in the streets to raise environmental awareness and participating in sit-in protests in front of factories releasing polluting fumes (p. 18). She is also politically engaged. At one point she is appointed as extraordinary ambassador for the environment to the UN in the Mediterranean region (p. 31) and she is elected member of the Majlis al-nuwwāb, the Lebanese Parliament, with her slogan “Green Lebanon First” (Lūbnān al-ʾakhḍarʾ awwalān, p. 92). In her election campaign speech, she exhorts her cheering listeners to take the brave decision and vote “to cover the whole country in green” (“li-yaʿum al-lawn al-ʾakhḍarʾ arjāʾ al-waṭan,” p. 121). She also represents her country at the School Environmental Awareness Conference in Dubai where, in order to increase environmental awareness, amendments to the curricula of primary, secondary and university education are discussed (p. 155).

Although the novel does not provide explicit reference of her ecological literacy as demonstrating “how people and societies relate to each other” (CUTTER-MACKENZIE & SMITH 2003: 503), it is apparent that she is well aware of the dynamics of natural systems (such as her dream of an emission-free village) and understands the causes behind global warming. In a conversation with of Ramzī Ḥakīm (see below), she says:

إن هذه التغيّرات المناخية التي نعيشها مؤشر لبداية النهاية ما لم يسرع المسئولون والعيورين حول العالم إلى تحرك الأمر. ذلك أن معدلات الحرارة المترتفعة التي نشهدها حول العالم ستسرّع من ذوبان ثلوج الأنهار المجمدة، وستزيد من تسرب مياه الأمطار والأنهار مما سيضاعف من تركز بخار الماء في الجو ويرفع معدلات الاحتباس الحراري، فترتفع حرارة الأرض إلى مستويات أعلى وتسير دورة اندماج كوكب الأرض في تسارعها نحو الهيول. (p. 39)

These climate changes that we are experiencing are an indication of the beginning of the end, if the concerned authorities around the world do not hasten to take the necessary steps to solve the problem. This is because the rising temperature rates that we are witnessing around the world will accelerate the melting of glaciers and ice caps, and increase the evaporation of oceans and rivers, thus doubling water evaporation in the atmosphere and increasing global warming. The earth temperature will continue to rise higher and higher,

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21 In the genitive/accusative in the Arabic text.
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...and the planet’s decline cycle will continue its acceleration towards the unknown.

When she moves to Tripoli after the 2006 environmental catastrophe, Diyānā meets Shādī Karam, her uncle’s neighbour. A teacher and volunteer for the Green Earth Society, where he works as activities coordinator, Shādī may also be defined as a person with Highly Evolved Ecological Literacy. For instance, he is well-informed about environmental issues and pollution-related problems. He is the one who explains to Diyānā and her uncle Jamāl Nāṣir the catastrophic impact that the 2006 oil spill disaster has had on egg-laying sea turtles and migrating birds. Jamāl teaches at the same school as Shādī, and, as the novel progresses, he also becomes ecologically literate, although it is difficult to categorise his level, which seems to oscillate between Functional/Operational and Highly Evolved. Once he learns of the environmental consequences of the oil spill, together with Shādī he organises a beach clean-up operation and implements Diyānā’s idea of recruiting the school youth organisation for both the cleaning and turtle eggs rescue operations (pp. 14-16). These operations are based in Mahmiyyat juzur al-nakhkīl Nature Reserve, where the island of Jazīrat al-nakhkīl is located. Formerly known as Jazīrat al-ʾarnab, this is where Diyānā will later locate and realise her Green Palm Village project. After Shādī’s retirement as a teacher, Diyānā assigns him the task of supervising the village’s organic agricultural production and marketing (p. 54).

In Diyānā’s sphere of influence there is also the character of Ramzī Ḥakīm, a 42-year-old journalist with a bachelor’s degree in Communications and a huge concern for environmental issues. He also demonstrates a Highly Evolved Ecological Literacy. Not only does he drive a Prius (p. 27), but he is also in agreement with Diyānā on the need to improve the environmental situation at a national level. He is the author of several local newspaper articles, he participates in television debates and often puts forward suggestions about raising environment awareness (p. 21). During a conversation with Diyānā about environmental action, he states that

The damage is done and, unfortunately, cannot be repaired. But everyone must know that this damage is likely to get worse and worse, until all life on Earth is wiped out. Our situation is similar to the story of that cat who licks her paw, enjoying/delighted with the taste of blood, without realising that it is her own blood that she’s licking. Therefore, we must now stop draining and polluting nature resources, before we wipe them out, and ourselves with them.

Ramzī is a former employee of al-Šabāh, a newspaper that is also owned by Qāshūsh. He is fired after exposing Qāshūsh’s bribe to the former Minister of the Environment, Ghālib...
Afandī, involving a proposal related to the mandatory installation of solar panels for all new constructions (p. 21). He then gets a job as editor-in-chief at Al-Haqqīqa newspaper (p. 26), from where he continues his informative work about climate change awareness. He is a passionate supporter of Diyānā’s village project; he asks her to marry him, so they can live in a clean world and raise a family that loves nature (p. 80).

Rāmī’s niece and daughter of his sister, Rīmā Ḥaddād is also in Diyānā’s sphere of influence. She is not only Diyānā’s friend but also an environmental activist, and as such can also be understood as a person with Highly Evolved Ecological Literacy. Together with Diyānā, she storms the Balsam Hospital, in order to protest against its practice of disposing medical waste together with household waste (p. 20). Rīmā is also the author of a report, which she presents to the members of the Council of Administration of the Green Earth Organization, on the emissions released by a cement plant owned by Qāshūsh and the effects this is having on ozone concentrations in the atmosphere (p. 82-84). Rīmā is well informed about the climate crisis and its causes. When Nādiyā Qāshūsh, the wife of the story’s villain, confesses that she is scared by some heavy rains that have occurred lately, Rīmā tells her:

إنه الاحتباس الحراري الذي كنتمك عنه.

It is the global warming I told you about.

Then she continues:

إن وضع الأرض اليوم يشبه جسم إنسان دخل حمام السواني، وهو يتسبب عرقًا بسبب ازتفاع نسبة الرطوبة والحرارة حوله، ولكنه لا يشرب الماء ليعوض ما يفقده من سوائل.

The situation of the Earth today is similar to the body of a person who has entered a sauna. He is profusely sweating because of the high levels of humidity and the heat around him, but he does not drink water to compensate for the fluids he’s losing.

Rīmā then explains that

إن مصادر مياه الشرب على كوكب الأرض هي إلى تراجع كبير بسبب الاحتباس الحراري، وستعل إلى وقت قريب تنشئ فيها الحروب بين الدول بسبب الماء.

The sources of drinking water on the planet are seriously decreasing because of global warming, and the time will soon come when we will wage wars against each other over water.

Rīmā’s fiancée is Mālik Qāshūsh, the son of Maṇṣūr and Nādiyā Qāshūsh. An artist and a painter, Mālik also displays the features of Highly Evolved Ecological Literacy. He is an environmental supporter as well as the author and translator of several articles about the environment. One of these, on the subject of industrial hemp and published in his book Future Ideas (Afkār mustaqbaliyya), becomes the inspiration for Diyānā’s decision to use industrial hemp as a construction material for her village.
Also Ecologically Literate, but arguably with a less thorough understanding of “the
dynamics of the environmental crisis” (CUTTER-MACKENZIE & SMITH 2003: 502), Shākir
Māḍī is a structural engineer whom Diyānā contacts in order to realise the project for the
cultivation and manufacture of industrial hemp. She presents him with a report that describes
the multiple potential uses of industrial hemp, not only as a replacement for wood, cotton, oil
and even plastic, but also as a component of many other products such as food, clothes,
medicines, and even make-up and dynamite (p. 142). Shākir marvels at the claims in the
report and decides to personally verify the information at the university library. There he
finds out that not only is the report accurate but also that the advantages of industrial hemp
in the construction industry are even more numerous, serving as a component in the
manufacture of many building materials, from roof tiles and shingles to insulation material
(p. 143). During a discussion with two of his cousins, who argue against the use of industrial hemp
because of its need for abundant irrigation, he remembers that a room in his grandfather’s house was built using hemp and that it was cool in the summer and warm in
the winter. On further investigation, Shākir discovers that the optimal way to grow industrial hemp is by means of recycled sewage water irrigation and organic fertilisers. These
discoveries drive him to become deeply concerned with global warming and convinced of
the advantages of industrial hemp use for the environment. Because his environmental awareness develops over time, his character may be defined as displaying Functional/Operational Ecological Literacy. At the end of his investigations, he decides to
move to Diyānā’s village with his family once its construction is completed. His wife, who
wants to move to Beirut, asks him,

Will you deprive our children of the pleasure of the city life and of the taste of
civilisation?

Shākir’s reply speaks for itself and shows the evolution of his ecological literacy:

I will deprive them of the inhalation of the toxic gases and fumes emitted by
car exhausts and factories in the city. They will be safe from them here. They
will also enjoy the tranquillity and beauty of nature, as well as contribute to
the creation of an environmental and cultural project unique in its genre, a
project of which they will be proud of in front of their children and
grandchildren in the future.

There are a few characters who are not directly involved in the unfolding of the story but
who nevertheless are relevant for its progression. One of them is Dr. Aḥmad Māhir. Diyānā
is familiar with his work and urges Ramzī to attend his lecture entitled “Farewell, Oil”, where he presents his theory about the Earth running out of oil by 2030 (p. 38). During his lecture, he declares,

The amount of oil that will be consumed between now and the time when it will run out is sufficient to exterminate the human race, because of the extent of the damage that carbon dioxide toxins released by its derivatives will cause to the global climate. It will exacerbate the problem of global warming, which will raise air, land and sea temperatures, and decrease the levels of drinking water.

He then proceeds to explain in detail how the Earth will take revenge upon the human race and inflict hurricanes, storms, earthquakes and other major catastrophes on the planet. After painting this kind of “map” of coming destruction, at the end of his lecture he makes a bold statement:

The time has come for a change, for us say no in the coming parliamentary elections to those members who, instead of representing our will and our needs, represent their own craving for power and their material ambitions. The time has come for us to elect people who represent the call of the Earth and its children, people like Diyānā Fāris. Yes, I nominate Diyānā Fāris, daughter of the Earth and sister of mankind, as a candidate for the fifth parliamentary seat in the capital, to save the environment, the country, and the peace…

At this point the public erupts into enthusiastic applause and turns to look at a blushing Diyānā, who is sitting beside Dr. Ḥāzim Ḥaydar, the Minister of the Environment. In the conversation that ensues, she blames Dr. Māhir for having embarrassed her with his words, but Dr. Māhir makes his position very clear:
Climate change and ecological literacy in Ghassān Shibārū’s 2022

I did not mean to embarrass you, but I am convinced that now it is not time for talk, it is time for action. We want committed people on the Earth, people who are not just political theorists, as is the case now with our representatives in Parliament.

Dr. Māhir’s level of ecological literacy is difficult to assess from just the content of his lecture and his other interventions, although it would seem to be either Functional/Operational or Highly Evolved. Despite this uncertainty, he is undoubtedly well informed about climate change issues and appears willing to change the current situation. The same can be said for Dr. Ḥāzim Ḥaydar, the Minister of the Environment, who also attends Dr. Māhir’s lecture. He has approved Dīāna’s village project and replies to Dr. Māhir’s statement as follows:

I completely agree with Dr. Māhir. People are fed up with politics and politicians and want honest and successful specialists in decision-making centres, and most importantly, capable of change.

Even if it is not possible to distinguish between the levels of Functional/Operational or Highly Evolved, the ecological literacy of both Dr. Māhir and Dr. Haydar is undisputed. Both characters serve the specific informative purpose of spreading knowledge about climate issues, both within the evolution of the novel and for its readers.

Among the other minor characters who are also difficult to assess is Karīm Murād, the very popular presenter of the TV show On the Horizon (Fī l-ʾuquq, p. 76). He is an inveterate card player and seizes every opportunity to earn money. His ecological illiteracy is represented by the symbol of his smoking, which he even promotes through advertising (p. 77). By the end of the novel, he has contracted lung cancer and, in a speech to the Parliament, apologises for all of his previous positions, among them his defence and sponsorship of Qāshūsh’s cement factory, from which the gas emissions are to blame for his lung cancer (pp. 208-209). His attempt to redeem himself is portrayed as a sign of his growing understanding of the personal, and by extension environmental consequences of toxic gas emissions. This knowledge has, in a way, transformed him so that he comes to display at least a Nominal Literacy.

Diyāna’s antagonist, Manṣūr Qāshūsh, is the greedy villain of the story. He is driven by his money-hunger and, because of it, he deliberately harms the environment. He is the Chairman of the Board of Directors of Māstir Bank and the owner of several business enterprises, including the Balsam Hospital, the Māstir Hotel as well as the cement factory, strongly defended by Karīm Murād, but which is eventually shut down by the International Environmental Committee because of the danger its gas emissions constitute for human life and the environment (p. 150). Qāshūsh also owns the newspaper Al-Ṣabāḥ and is responsible
for firing Ramzī Ḥakīm (p. 26), who has written a report supporting the bill proposing the mandatory installation of solar panels for all new constructions (p. 21). If the law passes, Qāshūsh estimates that the annual income he generates from the sale of fuels to the Ministry of Energy will shrink by 8% (p. 25). Qāshūsh has no scruples when it comes to protecting his own wealth. In order to prevent Diyānā from obtaining a seat in the Lebanese Parliament, he seeks to discredit her by producing a falsified set of photographs showing her in a sexually compromised way (p. 11). He bribes Ghālib Afandī, the former Minister of the Environment, with the gift of a car to have him vote against the mandatory solar panel bill, an act that Ramzī promptly reported in his article (p. 27).

Qāshūsh also bribes Ghālib Afandī to have him write an official communication to the US Environmental Agency, where they are urged not to grant any financial aid to Diyānā’s Green Palm Village on the grounds of it being illegal (p. 38). Ghālib Afandī is opposed to Diyānā’s project, on the pretext that the island where she wants to build her village is a nature reserve (p. 24).

Qāshūsh’s dubious business activities extend far back in time. In 1982 he started to buy and import electrical generators. He then bribed a member of a local militia group to have their artillery shell a certain area (al-mintaqa al-gharbiyya), so that a rival militia group would retaliate and, in turn, bomb the area where the city’s electrical generators were located. Although innocent people died, with 70% of Beirut now without electricity, Qāshūsh could sell with profit his imported generators (p. 40).

However, despite his wealth and his scheming, Qāshūsh is not immune to the effects of climate change. He personally experiences how his actions contribute to global warming. For example, on board a ship he encounters, and survives, a violent hurricane that hits the Turkish region of Ṭarṭūs (pp. 124-125). Later on, however, when on board his own yacht in the Mediterranean Sea, an underwater earthquake occurs, causing the mooring to collapse and pulling the yacht underwater. Qāshūsh falls, hits his head and is dragged to his death, while the waters swallow the yacht completely.

Qāshūsh’s secretary and lover, Sūsū Silkūn, is driven by the same money hunger as her boss and works in co-operation with him (p. 13). She also does not hesitate to break the law in order to make money. For instance, she gladly reports to Qāshūsh that she paid a student to inject the cows in Diyānā’s village with the mad cow disease (p. 96). She then wants to tip off the local newspaper about the existence of the disease in the village (p. 101), in order to discredit its good reputation. However, Shibārū does not provide any reasons for her Ecological Illiteracy, apart from suggesting that she simply wants to do her boss’s will.

22 Needless to say, the law eventually passes (p. 60).
23 ‘Silicon’ in her name is a reminder of the multiple cosmetic surgeries, such as facelift, lip and breast augmentation, as well as eyebrow lift, that she has undergone in order to remain attractive for her boss.
6. Discussion

6.1 2022 as climate fiction: Ecological Literacy, scientific truth and happy endings

Arguably, the author’s main intention is didactic, as he employs a fictional narrative in order to spread awareness of global warming and climate change. Unsurprisingly therefore, as the heroine of a story written by an environmentally-committed author, Diyānā demonstrates a Highly Evolved level of ecological literacy according to the table in CUTTER-MACKENZIE and SMITH (2003). Diyānā undoubtedly shows a “thorough understanding of how people and societies relate to each other and to natural systems” as well as a “thorough understanding of the dynamics of the environmental crisis.” Moreover, she proves that she clearly believes “in the intrinsic importance and preservation for defining nature and sustaining humanity” and that she has “faith in cooperative capabilities of societies to establish self-reliant communities based on sustainable resource use” (2003: 503). The ecological literacy of her entourage is also mostly Highly Evolved, as is the case with Ramzī Ḥakīm, Shādī Karam, Rīmā Haddād and Mālik Qāshūsh. Other characters who work with her, or come into contact with her and whom she, in one way or another, succeeds in influencing, such as Shākir Māḍī, show a Functional/Operational degree of ecological literacy. They manifest an understanding of “the organisation and functioning of environmental systems and their interaction with human systems” and they possess “the knowledge and skills to act on local problems and be involved with environmental concerns”. They also seem to believe “in the intrinsic importance of nature for defining and sustaining humanity”, although they are not as committed as Diyānā when it comes to preservation (2003: 503). As mentioned above, it is not always clear for certain characters if their ecological literacy is Highly Evolved or Functional/Operational, as is the case for both Dr. Ahmad Māhir and Dr. Ḥāzim Haydar.

What is surprising, however, is that the villain(s) of the story are not total ecological illiterates in terms of their knowledge. The novel does not indicate that Mansūr Qāshūsh, or the former environment minister Ghālib Afandī, have “little understanding and many misconceptions of environmental issues”. On the contrary, they manifest their awareness of environmental issues being the cause of global warming and climate change in an indirect way. For example, in terms of his knowledge, Qāshūsh is shown throughout the novel as well aware of the environmental damage that his companies are doing. In terms of his belief, however, he is ecologically illiterate. For him “the environment is a resource to be used by human beings” (CUTTER-MACKENZIE & SMITH 2003: 503), with the aim, in his case, to increase his economic wealth. At the end of the story, when he looks to replace his regular pesticides with less environmentally-harmful alternatives, this is only because he knows of an imminent police inspection and does not want to be caught storing the damaging ones (2009: 212). He knows what he is doing, but for him his financial interests take absolute priority. Although Shibārū does not make his degree of illiteracy clear—he could for example be nominally literate—his perspective is undoubtedly Technocentric/Anthropocentric. Despite his knowledge about the negative environmental impact of his actions, he prioritises his economic interests and his own personal gain over the consequences that his actions might have. In the case of Karīm Murād, however, it is possible to witness an evolution from a position of Ecological Illiteracy to one of at least Nominal Ecological Literacy. In a way,
therefore, the CUTTER-MACKENZIE and SMITH table does not model the progression from one level of (il)literacy to another, nor does it account for the reasons or motivations behind such movement. However, Shibārū seems to want to make exactly this point. His character portrayals suggest that it is precisely because of individual economic interests that the planet is now experiencing this climate crisis and it is time to start thinking in terms of no-impact projects and solutions. Referring back to the research fields within ecocriticism related to climate fiction and its purposes mentioned in section 2, Shibārū, in writing 2022, clearly aims to draw attention to the environment and to put forward solutions for climate change that are based on scientific evidence. At the same time, he is trying to place these issues within a fictional narrative that is engaging and entertaining. We argue that the novel has a clear didactic quality: the author seems to expect his readers to be eco-illiterates and aims to spread knowledge about global warming, climate change and the real possibility of future catastrophes and disasters. In this perspective, the novel itself shows a Highly Evolved Ecological literacy.

However, it is important to underscore the fact that the novel does not offer any exploration, analysis or introspection when it comes to the characters’ portrayals. We do not get to know what the characters think or feel beyond their mere actions and reported speech. This makes it difficult to draw precise lines between the levels of ecological literacy and then to identify the characters as representing one or another of them. The novel itself is written in a documentary narrative style, using the more matter-of-fact, scientific prose style common in newspapers and on radio and television. In this sense, parallels could be drawn, in broad terms, between 2022 and the literary genre of the “documentary novel” (MAZI-LESKOVAR 2013, HINKEN 2006), sometimes also termed the “non-fiction novel,” which, by narrating “real” events in an imaginary context, blurs the line between fact and fiction. However, such a comparison highlights the fact that in 2022 the “real” events are part of the imaginary narrative and are definitely most likely to happen. Actually, the narration is interspersed with reports of natural catastrophes and environmental disasters, without any apparent link to the story. Although it is uncertain if these are references to events that have actually occurred, there is no doubt for Shibārū that they are likely to occur because of the anthropogenic effects of climate change.

Although of great interest, a discussion about the relationship between fiction and non-fiction goes beyond the scope of this paper. However, the distinction between what is in reality the scientific, factual truth and what is instead mere fiction for the purpose of the narration is a particularly relevant topic for climate fiction. TREXLER discusses this question closely, claiming that behind the choices a writer of climate fiction has to make, such as focusing on what is the cause of the greenhouse effect rather than investigating strategic solutions, there is “an even more fundamental problem: the way that science enters fiction. This issue gets to the heart of what it means for science to be true and what it means for fiction to be distinguished from fact” (2015: 30). In fact, he says,

24 See for example FOLEY 2018.

25 “Literature has always relied on facts to make fictional works more believable, while non-fiction has used literary tools to more fully engage readers” (MAZI-LESKOVAR 2013: 180). In addition, “there is no fiction or nonfiction as we commonly understand the distinction: there is only narrative” (DOCTOROW 1977: 231).
[i]ncorporating climate change into fiction is not a straightforward task. To explore how global warming impacts human character, the future, imagined landscapes, the political realm, or culture, the novel must bring fact into dialogue with fiction. (TREXLER 2015: 29).

Among his review of the different strategies cli-fi authors choose to grapple with this problem, he includes the one that Shibārū uses: putting knowledge into the mouths of experts and scientists. For TREXLER, these sources of information “play a fundamental role, developing the meaning of climate change while helping to frame questions about both knowledge and the novel as a formal entity” (2015: 31). In 2022, Diyānā Fāris plays this expert role, but so do also Dr. Ahmad Māhir and Dr. Ḥazim Ḥaydar, who represent both scientific knowledge and political authority.

However, Shibārū takes additional measures to support the presence of scientific truth in his fiction and to give credibility to the real (and not fictional) existence of climate change issues. The novel, for example, relates some factual pieces of information, intended to support the science permeating the story and not necessarily related to climate change. The case of the industrial hemp, which Diyānā employs for the construction of her Green Palm Village, is an example of this. The novel claims that industrial hemp was used in the construction of the fastest of Columbus’s three ships, that Gutenberg printed his first book on hemp paper, that Van Gogh and Rembrandt painted their works on hemp canvases, that the American Declaration of Independence was written on hemp paper, that the first American Flag was made of hemp canvas and that even the first diesel engine, invented by Rudolf Diesel, was originally created to burn hemp seed oil (p. 142). Whether these are researched, historical truths or unverified myths gathered from the internet also goes beyond the scope of this article. The fact remains that the author seems to intend the novel to spread "factual" knowledge and inform the reader, in order to promote and advocate his (and Diyānā’s) cause.

Another indication of the author’s intent with his story is that the narrative provides information, both directly and indirectly, about texts which may be relevant to a particular topic. A clear example of this is in the conversation between Mālik Qāshūsh and Rīmā about the paper used by the publishing company she is working with. In passing, Mālik mentions Collapse, a real non-fiction work by Jared Diamond, which theorises that the reason behind the collapse of ancient civilisations, such as the Mayas, the Vikings and the Anasazi, was their wrongful exploiting of natural resources (p. 63-64). The narrative also provides quite a bit of scientific data, like the claim that 30% of air pollution is caused by automobile emissions (p. 177), or the fact that a total of 25,000 products can be manufactured out of industrial hemp (p. 142). On several occasions a character states that carbon dioxide emissions are the cause of global warming, like for example when Shākir declares

\[
\text{إِنَّ الْإِحْتِيَابَ الْحَزَّٰرَيْنِ الَّتِي يَسْبِبْهَا غَازُ ثانِيَ أَكْسِيدَلِلْكَرِبُونِ الَّذِي يَتَلَقَّى مَعْظُومُهُ سِبَارَاتُ}
\]

\[
وُطَنَّٰرَتِ وَمَصَابِلِ النَّبْشِ هُوَ سَبْبُ هذِهِ التَّغَيُّرَاتِ المَناخِيَةِ غَيْرِ العَادِيَةِ الَّتِي نَشَهِدُهَا. (145)
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26 See the reference list for the details of the work.
The global warming caused by carbon dioxide, most of which is released by cars, planes and factories, is the reason for these unusual climate changes that we are witnessing.

The presentation of factual information becomes more evident in the frequent narration of climate anomalies and ecological, environmental disasters, both local (e.g. p. 110, pp. 129-132, p. 148) and worldwide (e.g. in France, Mexico and Greece, pp. 57-60; the French Alps, Mongolia, Madagascar, Brazil, pp. 108-109; Las Vegas, India, Uzbekistan, pp. 148-150; India, Sierra Leone, Japan, pp.156-157; Hong Kong, Germany, Spain, Jordan and Southern California, pp 176-177; the Mediterranean and the Nile, p. 201). The presence throughout the novel of these catastrophic events, narrated in a news-style, matter-of-fact way, raises awareness of the importance of climate change related issues at both a local and a global level. Once again, the author seems to deliberately intend to spread knowledge and emphasise the consequences of global warming in an informative, almost pedagogical way.

Also related to the purpose of the novel, the story’s happy ending is also interesting. In the end, Diyānā’s effort to create a sustainable village becomes a reality and proves that a zero-impact life in an emission free, zero-impact location is actually feasible. This effort displays Diyānā’s Highly Evolved Ecological Literacy and represents the anthropogenic possibility of acting in favour of the environment. Also symbolic is Diyānā’s election as member of the Lebanese Parliament and her appointment as extraordinary ambassador for the environment at the UN. Both positions represent people’s willingness to, proactively and in solidarity with others, do something to respond to the climate change emergency and slow down at least, if not to prevent, the inexorable progression of global warming. The decision of the Lebanese Parliament to close down Qāshūsh’s cement plant and to vote in favour of the solar panel requirement for all future building projects draws attention to the importance of Ecological Literacy in politics and the need for governments to take an Ecologically Literate stance where the environment is concerned. Shibārū also draws attention to the spread of ecological literacy to future generations. Mālik Qāshūsh is the son of the villain but is also an environmentalist and a character with a Highly Evolved Ecological Literacy—he is the opposite of his father. Diyānā’s marriage to Ramzī and Rīmā’s to to Mālik Qāshūsh seal this happy ending in a popular romantic, fairy-tale tradition.

Qāshūsh’s character at the end of the story is also emblematic, for everything turns against him. First, his driver gets arrested, then the police discover his machinations in order to cover up his attempt to hide dangerous pesticides stored in one of his warehouses. This results in a front-page article in the local newspaper and a public shaming. As he seeks refuge on board his yacht, drinking whisky, smoking cigars and taking sleeping pills, an underwater earthquake in the Mediterranean Sea causes the mooring to collapse taking Qāshūsh with it. Here Shibārū meticulously points out the fact that the stones used to build the mooring came from the exploitation of natural resources, that is the blasting of Jabal al-Dāmūr. In addition, Qāshūsh hits his head exactly on his safe (p. 221), which, Shibārū stresses, contains the records of all his accomplishments—thus the safe becomes a symbol of his own actions getting back at him. Moreover, Qāshūsh’s death occurs at exactly the same time as Diyānā’s wedding. In other words, the simultaneous occurrence of Diyānā’s success and Qāshūsh’s failure marks Shibārū’s hope that good will always prevail and evil will always be defeated. Good in this case can be equated with Highly Evolved Ecological Literacy and evil with
Ecological Illiteracy. In this respect, it is necessary to underscore that this dichotomy of good versus bad matches the dichotomy of environmentalism versus capitalist economy and private financial interests. Qāshūsh’s death is directly related to his Ecologically Illiterate actions: the earthquake that is ultimately responsible for his death occurs because of the global warming and climate change, caused by his business activities and their negative impact on the environment at a global level. With a reference back to Orr and his definition of ecological literacy, it is only Diyānā and her entourage that are able “To ask, let alone answer, “What then?” questions […] (1992: 92). They plan and act on the basis of the results of their planning.

On a final note, the fact that the antagonism between Diyānā and Qāshūsh starts locally in Lebanon and then moves out internationally points to the author’s intention to reveal the problems for the world, across all of its continents, if local environmental issues are not addressed properly. This is especially relevant in relationship to the novel’s reception, as despite the author’s clear attempt to widely engage the reading public in both local and worldwide climate change issues, the novel has gone quite unnoticed in the literary circles and has not been shortlisted for any literary prize. The scarce reviews that it has received pointed at its nature of scientific literature, underlining the fact that it proposes alternatives and solutions drawn from specialised scientific research, and its non-traditional narrative style, that merges scientific facts together with the imaginary. Reviews have also underlined that the novel is mostly intended for young people, who bear the responsibility of eliminating the dangers that the environment is facing, in order to raise their environmental awareness.

6.2 2022 not only climate fiction

Referring back to the distinction proposed by Johns-Putra (2016) and Mayer (2014) outlined above concerning the time settings of climate fiction, the temporal setting of 2022 is clearly a “near” future, considering that the novel was written in 2009. By this definition, 2022 represents an instance of a climate fiction narrative where the catastrophe has not yet occurred and thus can be described as what Mayer defines as a narrative of anticipation:

The narrative of anticipation […] does not present global climate collapse, but focuses on the exploration of the strong sense of uncertainty and controversy that marks the perception and assessment of global warming in the present. Large-scale catastrophe is envisioned, if at all, only as a possibility, usually signaled by the representation of weather anomalies and their socio-economic consequences that indicate the impact of global warming. (Mayer 2014: 26)

However, unlike the “sense of uncertainty” that Mayer notes in, for example, Kim Stanley Robinson’s Science in the Capital trilogy, 2022 focuses explicitly on what can be done, if not prevent, then to at least try, to remedy all anthropogenic activities that provoke a climate

Arguably, 2022 is, in this sense, unique as a kind of climate fiction, for it clearly aims to outline possible solutions from an optimistic perspective. Its most obvious solution is Diyānā’s Green Palm Village, which can be understood as a green utopia (MATHISEN 2001: 56), with its carbon neutral features, its zero emissions and its requirement for environmentally-friendly construction materials. The village can also be seen as an ecotopia, a term originating from the novel Ecotopia by Ernest CALLENBACH. First published in 1975, it has been described as “one of the most influential utopian novels of recent decades” (JACOBS 1997: 319). The story is about a state which has seceded from the United States to run itself, according to environmentalist principles: limited pollution, enhanced recycling, renewable energy resources and a more general, ecological conception of consumption, agriculture, and industrial development. Although parallels may indeed be drawn with 2022, Shibārū’s work completely lacks any account of Green Palm Village’s social life. In Ecotopia, however, Callenbach comments extensively on issues like sociability, healthcare, gender equality, even manners and sexual behaviour (CLAEYS 2022). Moreover, like the majority of contemporary climate fiction, 2022 may also be discussed as a dystopia, for it is set in a world where natural catastrophes and environmental disasters, caused by climate change, frequently occur and it comes with an implied warning for contemporary society about the possible future consequences of negative anthropogenic environmental trends. Indeed, dystopia has been defined as “the general term encompassing any imaginative view of a society that is oriented towards highlighting in a critical way negative or problematic features of that society’s vision of the ideal” (BOOKER 1994: 22). HUGHES and WHEELER term a climate change version of this kind of fiction as “eco-disaster through a dystopian prism”, that functions “both as a warning and a call to eco-political action” (2013: 1 and 6, respectively). In contrast, 2022 distinguishes itself from a typical dystopian narrative because of its happy ending, where good prevails over evil and hope for the future seems a suggested possibility.

7. Summary and conclusion

More than a decade ago, Clark observed that “of all environmental issues climate change is acknowledged as the most serious” and that “the relative absence in ecocriticism of its most serious issue seems to have more to do with the novelty and scope of the problem than with personal failing” (2011: 10 and 11 respectively). Since then much has changed, not only within the field of ecocriticism but also in the scope, narrative structure and variation of the emerging genre of climate fiction. In Mayer’s terms, the multifaceted narratives of environmental risk portrayed in the latest climate fiction “reveal that it is indispensable to go beyond the knowledge provided by scientific scenarios [...] in order to capture and express facts of the complex, diverse, and controversial reality of living with the risk of climate change” (2014: 35).

28 Interestingly, in relation to risk and climate change Kim STANLEY ROBINSON has authored both narratives of anticipation, such as Forty Signs of Rain (2005), Fifty Degrees Below (2005) and Sixty Days and Counting (2007) (the Science in the Capital trilogy mentioned above) and narratives of catastrophe, such as New York 2140 (2018).
In this respect, this paper has aimed to contribute to the critical discussions around cli-fi through analysis of the climate change narrative of 2022 by the Lebanese novelist and environmentalist Ghassān Shibārū. The paper first introduced climate fiction as a genre within the Anglophone research field and placed this in relation to ecocriticism. An overview of the theme of the environment in Arabic literature and Arabic literary studies then followed. The paper subsequently analysed and discussed 2022, from the theoretical perspective of ecological literacy as presented by CUTTER-MACKENZIE and SMITH (2003) as well as in relation to the literary canon of the climate fiction genre, specifically its purpose, its narrative structure and style and its relationship to scientific truth. As a conclusion, it has argued that 2022 represents a particular instance of climate fiction, one characterised by a didactic purpose and a struggle between the “good” of environmental concern and the “evil” of environmental neglect that results, unusually, in a happy ending.

References


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