

Graphic novels and climate change: a comparative approach to the teaching of literature /

Graphic novels e mudanças climáticas: uma abordagem comparatista para o ensino de literatura

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ABSTRACT

Ecocriticism, as a means of analyzing literary texts, has been gaining increasing prominence in academic discussions. One of the reasons lies in its interdisciplinary nature inherent in the commonly mobilized definition: the study of the relationship between literature and the environment (Glottfelty, 1996). This idea, therefore, finds support in the field of comparative studies. Given the above, we propose this reflection, with its main objective being to compare two graphic novels, namely *Climate Changed: A Personal Journey Through the Science* by Philippe Squarzoni and *HERE* by Richard McGuire. Both published in 2014, these books interact with each other in various aspects, especially regarding the literary genre to which they belong: cli-fi [climate change fiction]. Thus, the theme of climate emergency is the guiding concept of this comparative analysis, in which we highlight the recurring motifs in both novels. Additionally, we

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expand, in a broader sense, the debate about the potential of this type of fiction in the context of teaching literature, paying attention to the most urgent issue of the moment: global climate imbalance. When writing this article, we anchored our reflections on the discussions of several scholars, including: Garrard (2006), Mehnert (2016), Siperstein, Hall, and LeMenager (2017), Durão and Cechinel (2022), and Remak (2011).

KEYWORDS: Graphic Novels; Climate Change; Ecocriticism; Comparative Literature; Teaching.

RESUMO

A ecocrítica, enquanto possibilidade de análise de textos literários, tem ganhado cada vez mais espaço nas discussões acadêmicas. Uma das justificativas concerne ao seu caráter interdisciplinar imanente à própria definição comumente mobilizada: o estudo da relação entre literatura e meio ambiente (Glotfelty, 1996). Essa ideia, portanto, encontra respaldo no âmbito dos estudos comparativos. Diante do exposto, propomos esta reflexão, cujo objetivo principal é cotejar dois romances gráficos (Graphic novels), a saber *Climate Changed: a personal journey through the science*, de Phillippe Squarzoni e *HERE*, de Richard McGuire. Ambos publicados em 2014, os livros em questão dialogam sob vários aspectos, em especial no que diz respeito ao gênero literário ao qual pertencem: cli-fi [climate change fiction], ou ficção climática, em língua portuguesa. Assim sendo, o tema da emergência climática é o fio condutor desta análise comparatista em que evidenciamos os tropos recorrentes nos dois romances. Além disso, ampliamos, de um modo geral, o debate acerca do potencial desse tipo de ficção em contexto de ensino de literatura, atentando para a questão mais urgente do momento: o desequilíbrio climático global. Para elaboração do presente artigo, ancoramos nossas reflexões a partir das discussões de vários estudiosos, dentre eles: Garrard (2006), Mehnert (2016), Siperstein, Hall e LeMenager (2017), Durão e Cechinel (2022) e Remak (2011).

PALAVRAS-CHAVE: Romances gráficos; Mudanças climáticas; Ecocrítica; Literatura Comparada; Ensino.

1 Introduction

In 2021, UNESCO (United Nations Educational, Scientific and Cultural Organization) published a report detailing the integration of climate change and sustainable development themes in education across 100 countries, including Brazil. The report states that almost half of the evaluated national curricula did not mention climate change, and those that did offered little depth on the subject. Another key point in the report, which is also essential for the present work, is the need to equip teachers so they can introduce the topic comprehensively, regardless of their field. Brazil's *Base Nacional Comum Curricular* (BNCC 2017), a regulatory document establishing essential guidelines and content for basic education, is among the curricula that, despite mentioning sustainability, offer minimal focus on climate issues.

Sustainability appears in the BNCC for High School from its introductory text, spanning Natural Sciences, Humanities, and Social Applied Sciences, and to a lesser extent, Mathematics and its Technologies. However, a preliminary analysis reveals that the area of Language and Literature does not address the concept of sustainability, neither in its introductory text nor within

the competencies and skills. This indicates that the responsibility for discussing sustainable development falls to other areas of the curriculum. Moreover, it's noteworthy that although the BNCC mentions sustainability a few times, the term "climate change" appears only three times within its 600 pages, all in the section dedicated to Natural Sciences in High School.

Given this gap, it is essential to highlight the significant role literature can play in raising awareness about the climate crisis. According to Candido (2011, p. 182), when discussing the right to literature, it has the capacity to humanize readers, fostering reflection and enhancing their understanding of their own reality and the world around them. Literature allows readers to put themselves in the place of others, developing empathy and a deeper understanding of diverse perspectives and realities. Siperstein, Hall, and LeMenager (2017, p. 5) propose that, "In this time of climate chaos, we need to transform social, economic, and political systems, and to do so with creativity and strong ethical grounding. Humanities classrooms are important transformative spaces" and when literary works addressing environmental issues are introduced in schools, they allow students/readers to become familiar with a reality previously restricted to the field of Natural Sciences.

Understanding the need to include sustainability and climate change across all curriculum areas and ensure effective classroom approaches means recognizing the urgency of the current environmental crisis. It is nearly impossible to avoid media reports on large-scale environmental disasters, often caused by human action. In 2023, alongside record temperatures throughout Brazil, the Amazon River Basin faced an extreme drought. According to the World Weather Attribution (WWA), an organization specialized in climate studies, this situation was attributed more to climate change than to the El Niño phenomenon, as previously believed. In the first half of 2024, this phenomenon triggered two extreme climate events in Brazil: floods in Rio Grande do Sul and fires in the Pantanal. The media has covered the disastrous consequences of these two contexts, prompting us to evoke the global climate emergency.

In light of these considerations, this article seeks to point out possible ways to fill a gap in the teaching of literature, where environmental issues are still underexplored. To that end, and to define the object of this analysis, we selected two literary works that clearly communicate climate change. The first is *Climate Changed: A Personal Journey Through the Science* by French author Philippe Squarzoni, and the second is *HERE* by American Richard McGuire. Both books, coincidentally published in 2014, can be categorized as graphic novels.

Climate changed combines elements of autobiography, journalism, and science to explore the complexities of climate change, as evidenced in its subtitle. In his narrative, Squarzoni leads readers through a journey of discovery about climate issues, interviewing scientists, activists, and experts to demystify the phenomenon and its environmental implications. *HERE*, on the other hand, offers a distinct approach from other graphic narratives. It tells the development of one or multiple stories occurring within a single physical space: the junction of two walls in a room, a setting that changes over billions of years, from prehistoric times to a distant future. Although *HERE* does not directly address climate change, its narrative highlights the fluidity and continuous evolution of that physical space, inviting readers to interpret the text in any direction, thereby placing responsibility for constructing meaning in the reader's hands.

We argue, therefore, for the potential of these two graphic narratives to highlight the theme of climate change. Our guiding question is: which constituent elements of the graphic narratives analyzed here problematize the greatest issue facing the contemporary world? Addressing the climate emergency, as we have already noted, is a collective and urgent task. Moreover, we believe that literary texts can be mobilized for this purpose. Thus, we propose this comparative study that examines the two narratives mentioned above, exploring how the theme of climate change can be addressed in a classroom setting, specifically within the teaching of literature. As such, the comparative method will guide our discussion, integrating reflections on climate change, ecocriticism, and the potential of this intersection for teaching literature.

This article originates from a research project conducted in 2021 and 2022, titled "Cli-Fi in Graphic Narratives: New Literary Means to Communicate Climate Change." The research focused on the comparative analysis of two graphic narratives, examining how these literary works address and illustrate climate change issues. However, the present work seeks to expand this proposal by incorporating a pedagogical dimension, investigating how literature teaching could benefit from these graphic narratives. By adding this educational perspective, the article aims to make a significant contribution to developing a critical and environmental consciousness for students and teachers, using literature as an effective means to communicate climate change.

The works of several scholars were essential to our discussion. Greg Garrard's *Ecocriticism* and Antonia Mehnert's *Climate Change Fictions: Representations of Global Warming in American Literature* support our reflections on ecocriticism and climate fiction. For the teaching of literature and climate change in the classroom, the main theoretical inputs were *Teaching*

Climate Change in the Humanities organized by Stephen Siperstein, Shane Hall, and Stephanie LeMenager, and *Ensinando literatura: a sala de aula como acontecimento* [Teaching literature: the classroom as an event] by Fábio Durão and André Cechinel. Concerning the comparative method underlying this analysis, we turned to *Comparative Literature: Foundational Texts*, an anthology edited by Eduardo Coutinho and Tania Franco Carvalhal (2011).

2 Ecocriticism and Comparative Literature: Some Observations

As illustrated by the data from UNESCO's report, many education professionals still lack sufficient training on approaches that encourage climate emergency discussions within their classrooms. This calls for environmental studies references and reflection on how this field can inform teaching approaches across disciplines, beyond the natural sciences, from an interdisciplinary standpoint, for example. Taking this aspect into account, ecocriticism emerges as a pathway to facilitate such dialogue.

Ecocritical thinking is based on two primary pillars: literature and the environment, characterized as a dialogue between these fields. However, it is essential to understand ecocriticism as a broad field that is not limited to the physical space depicted in literary works; rather, it encompasses a complex network that interconnects human relationships with nature and the various ways this relationship manifests in literature. Addressing this complexity, Greg Garrard argues that:

As ecocritics seek to offer a truly transformative discourse, enabling us to analyze and critique the world we live in, increasing attention is paid to the wide range of cultural processes and products through which the complex negotiations between nature and culture occur. Indeed, the broadest definition of the object of ecocriticism is the study of the relationship between human and non-human throughout all of cultural history, leading to a critical analysis of the term 'human' itself (Garrard, 2006, p. 16).

Thus, it is possible to perceive the intricate web of relationships that ecocriticism brings into its scope. This field not only enriches the understanding of literature and its interface with the environment but also promotes a critical analysis of the cultural and historical interactions between humans and the non-human. This, undoubtedly, provides fertile ground for debates within and

outside the classroom, as the concept of human becomes significant for studies through the ecocritical lens, as Garrard emphasizes in the passage above.

Regarding these complex negotiations, it is safe to say that ecocriticism accommodates comparative studies. These, in turn, are difficult to define, as in the field of Comparative Literature, "its contents and objectives are constantly changing, depending on the space and time" (Nitrini, 2000, p. 19³). We do not intend to delve into a detailed discussion of the intricacies of the history of Comparative Literature, as Sandra Nitrini and other scholars have proposed. Instead, we are interested in justifying our analytical choice for this article. In this sense, we align with the thought formulated by Henry H. H. Remak in the following excerpt:

the study of literature beyond the borders of a specific country and the study of the relationships between, on the one hand, literature, and, on the other, different areas of knowledge and belief, such as the arts (for example, painting, sculpture, architecture, music), philosophy, history, social sciences (for example, politics, economics, sociology), sciences, religion, etc. In short, it is the comparison of literature with other spheres of human expression (Remak, 2011, p. 189).

Both fields, therefore, benefit from a multidisciplinary perspective that encompasses not only literature but also history, sociology, anthropology, and other humanities. Ecocriticism and Comparative Literature share the capacity to transcend traditional boundaries of knowledge fields, facilitating a dialogue that integrates scientific, cultural, and ethical aspects. In ecocriticism, this dialogue focuses on the relationship between human and non-human, analyzing how literature can reflect, question, and influence the understanding of environmental issues. In Comparative Literature, analyzing different cultural and historical contexts allows for a broader, more diversified view of the human condition and its interactions with the environment.

Concerning ecocriticism, especially in our more recent research, we encountered a term that is essential for our discussion: cli-fi (an abbreviation for "climate change fiction"). In other words, cli-fi, or climate change fiction, explicitly addresses anthropogenic climate change, as Mehnert (2016) points out. This fictional genre presents environmental challenges in an accessible and engaging way, but also serves as a "cultural-political attempt and innovative alternative of communicating climate change" (Mehnert, 2016, p. 4). By bringing complex scientific issues into

³ In the original: "seus conteúdos e objetivos mudam constantemente, de acordo com o espaço e o tempo"

the realm of fiction, cli-fi has the potential to make the problem of climate change more tangible and understandable for the general public.

When focusing on climate change in this type of narrative, we can conclude that the works selected for this article fit within the cli-fi genre and consequently align with ecocritical studies. These narratives, combining fictional elements with scientific data and theories, create a space where readers can experience and reflect on the consequences of human actions on the environment. Moreover, ecocriticism, by examining the interaction between literature and the environment, provides a lens through which we can analyze how these narratives problematize the climate crisis and reflect on the relationship between humans and nature.

3 Climate Changed vs. HERE – A Comparative Reading

To expand possible classroom approaches to the works under investigation, this section presents an analysis of the characteristics and tropes of these narratives that engage with ecocritical theory. Thus, it is possible to identify key elements that allow for a deeper integration between literature and environmental issues, offering teachers potential paths for teaching climate issues. It is important to note that the characteristics highlighted in this section and throughout this paper are not intended to prescribe a limiting approach, but rather to illustrate the potential for discussing climate issues through literature.

In these literary works, certain elements relevant to climate change discussions stand out. These include the presence of scientific evidence, the concept of natural time as distinct from how time is treated in everyday human life, and the reflection on human existence both in harmony and in contrast to the environment.

One key point of climate change literature is its ability to make scientific data more accessible to readers, as it does not appear in its traditional report format. In particular, Squarzoni's work integrates this data into moments from the author's everyday life, such as when he questions SUVs and their connection to climate change and individual choices (Fig. 1). Squarzoni also uses visual resources like images, graphs, and interviews with scientists (Fig. 2) to illustrate this

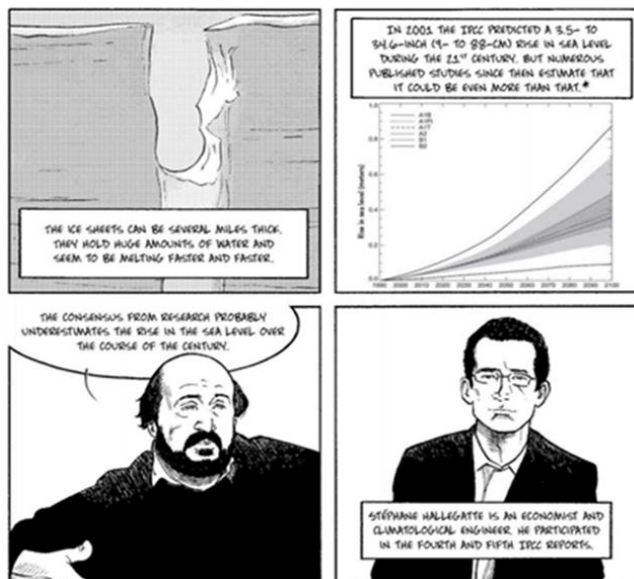
information, making it more relatable and understandable for those who might otherwise struggle with this technical content.

Figure 1: The relationship between SUVs and climate change.



Source: Squarzoni (2014, p.182)

Figure 2: Scientific data incorporated into the narrative of Climate Changed.



Source: Squarzoni (2014, p. 237)

While Squarzoni in *Climate Changed* uses visual and written elements to communicate scientific data on climate change, McGuire in *HERE* relies predominantly on imagery to convey his message, offering readers a more indirect experience of the science behind this topic. In figure 3, for instance, he juxtaposes a flood scene, one of the consequences of the climate crisis, with the daily routine of a family, creating a contrast that emphasizes the interaction between personal life and global environmental impacts.

Figure 3: Space-time in *HERE* (2005, 2006, 2016, 2111).



Source: McGuire (2014, p. 274)

We can see that, although they have distinct approaches to communicating the scientific evidence underlying the climate crisis, both graphic novels manage to reimagine and present this data in a way that informs readers about the topic. In this regard, it is interesting to notice how time is heavily manipulated within both works. Despite being done in different ways, the two strategies work together to illustrate the relationship between humans and the environment—one in a more personal way, and the other in a broader sense.

In *HERE*, as shown in fig. 3, the reader is able to view different moments in time within the same location. McGuire is able to open windows into distinct temporalities, allowing these moments, when placed side by side, to create a single story. This narrative style in the graphic novel enables the author to explore what is called "environmental time" or "natural time," which "encompasses those taken-for-granted processes and transformations of nature, which often

remain undetected by the human eye” (Mehnert, 2016, p. 95). In this way, the narrative in *HERE* depicts both states of an untouched nature (fig. 4) as well as a dystopian future where the consequences of climate change have overtaken the environment (fig. 5).

Figure 4: Space-time in *HERE* (1,000,000 BCE).



Source: McGuire (2014, p. 150-151)

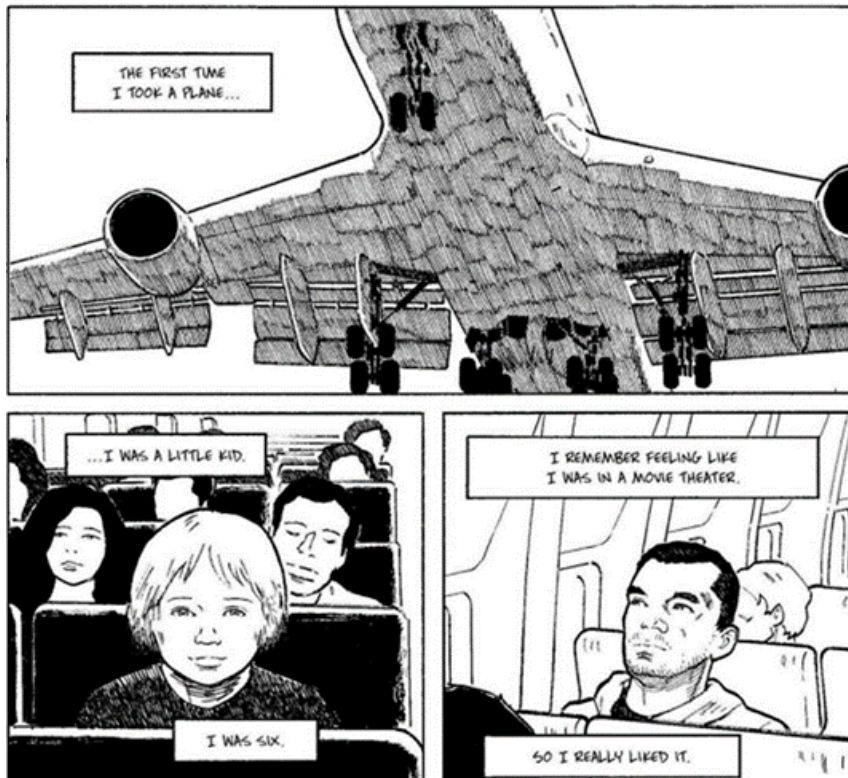
Figure 5: Space-time in *HERE* (1962, 1994, 2113).



Source: McGuire (2014, p. 148-149)

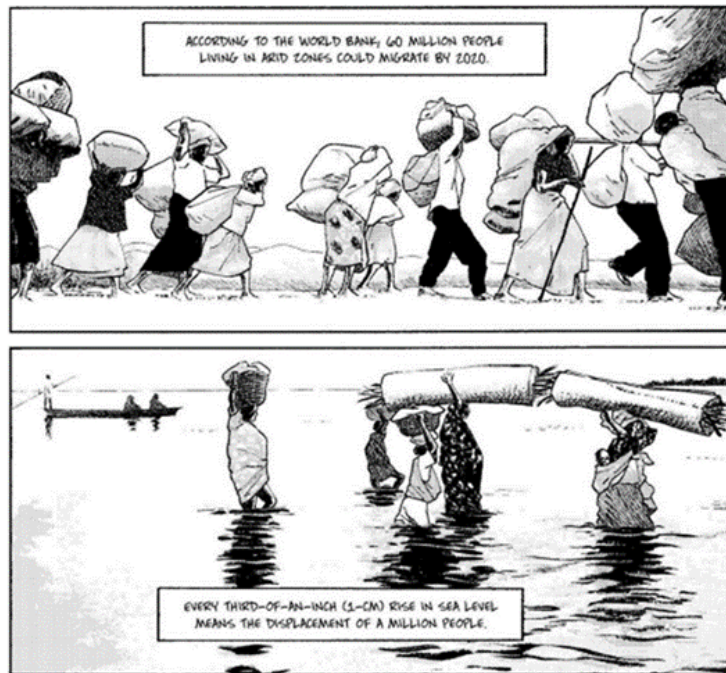
Squarzoni’s narrative in *Climate Changed* examines different temporalities within the narrator’s life and the broader human experience. In Fig. 6 , he recounts his first airplane trip and reflects on how often he has flown, tying this experience to carbon dioxide emissions and pollution from air travel. In Fig. 7, for instance, Squarzoni also uses data to envision a possible future in which humanity is struggling with the impacts of climate change.

Figure 6: The narrator's airplane travels.



Source: Squarzoni (2014, p. 240)

Figure 7: Climate change refugees.



Source: Squarzoni (2014, p. 244)

Climate Changed presents a temporality that is more intimate to the reader, situated within the boundaries of human experience on Earth, drawing parallels between the narrator's past and present. In contrast, time in *HERE* extends far beyond these limits, reaching thousands of years into the past and future, allowing readers to observe the passage of time and the changes that occur throughout natural time. Despite using different strategies, both narratives manage to reflect on human existence on the planet in both individual and broader senses. They highlight the complexity of human actions on Earth and, simultaneously, their insignificance compared to the planet's vast history, drawing attention to our role in the unfolding climate crisis.

The way these graphic novels incorporate temporal changes within their respective narratives exemplifies the potential of climate fiction to explore a topic like the climate crisis, as it:

offers the resources to dramatize and negotiate between the short and the long term, creating narrative relationships between past, present, and future, between humans and the environment while exposing the potential dangers that a bifurcation of time presents. Particularly in the case of climate change, which is so difficult to perceive because of its latency, a more profound engagement with time may open up new perspectives on environmental temporalities (Mehnert, 2016, p. 96).

Thus, we can see the crucial role fiction plays in understanding climate change, as it transcends temporal boundaries to construct images that, in reality, would be difficult to visualize. In other

words, such narratives allow potential readers to engage with an expanded perspective on the environmental crisis.

The same potential that climate fiction has to encompass different times also allows it to reimagine human existence within these transformative processes on Earth. Graphic narratives show how human life and the environment are interconnected, and how climate change is not a distant event but rather an issue that affects the very structures on which societies are built (Mehnert, 2016, p. 213-214). Climate fiction enters this relationship to remind humans of this indissoluble bond we have with nature.

In Fig. 8, we can observe one of the ways McGuire represents this human-nature relationship in *HERE*, showing two scenes that dialogue with each other. In the 1986 frame (larger frame), we see the ringing of a doorbell that seems to also be perceived in 1609 (smaller frame on the right).

Figure 8: Space-time in *HERE* (1609, 1986).

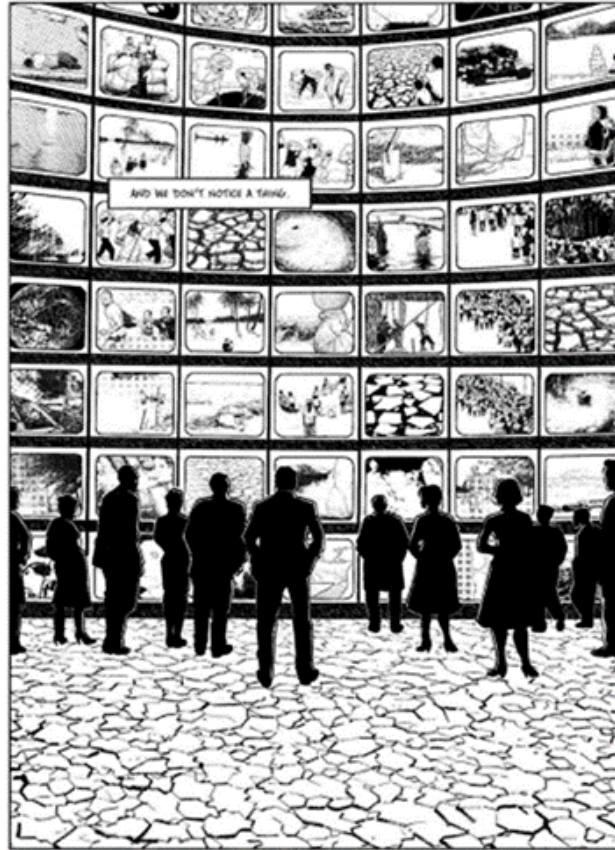


Source: McGuire (2014, p. 96-97)

The ability to show the same location at different times conveys the idea of interconnectedness between different peoples in different eras with nature and with other human beings. The frames are distributed within a single page, crafting a story that unfolds over the years and reflects on the collective human experience. By layering scenes from distinct periods in the same space, McGuire invites readers to consider the temporal depth and multiplicity of stories that any place can harbor, encouraging reflection on the passage of time and human presence on Earth.

In *Climate Changed*, many frames are constructed to exemplify scientific data and to visualize a narrated thought, as seen in fig. 9.

Figure 9: Extreme climate effects.



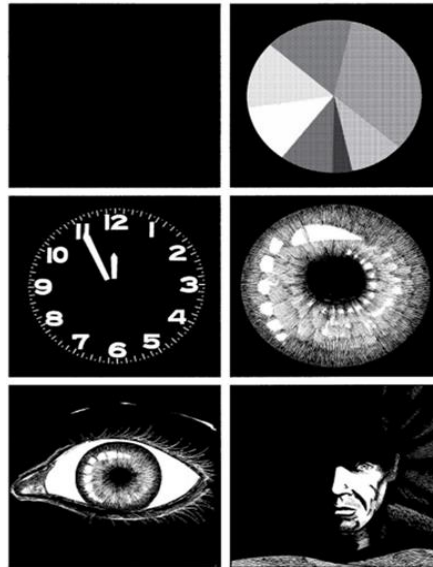
Source: Squarzoni (2014, p. 251)

In Fig. 9, Squarzoni powerfully illustrates how the consequences of the climate crisis result in daily deaths that, due to insufficient media coverage, go unnoticed by society. The image depicts a group of people in front of multiple screens displaying scenes of climate disasters and their victims, suggesting that these events are constantly occurring worldwide. The arid ground under the viewers' feet symbolizes a physical space devastated by the climate crisis, highlighting that although everyone is aware of the incidents—and often directly affected by them—they remain inert, only passive spectators. This idea emphasizes the lack of effective responses from both society and the media.

Regarding the relationship between human existence and the environment, Squarzoni's narrative includes images that convey a significant message on their own. In the pages preceding

fig. 10, the narrator discusses with his wife the iconic image of Earth taken during the last Apollo mission in 1972 (fig. 11). In their dialogue, they reflect on how the photo is not only an image of Earth but also a representation of how we imagine the planet in our minds. However, by doing so, we end up crystallizing a single vision of Earth whenever we think of it.

Figure 10: Spatial-temporal and visual perspectives.



Source: Squarzoni (2014, p. 172)

Figure 11: Apollo 17: Blue Marble



Source: NASA⁴

The images shown in fig. 10 reflect both a collective and a personal vision of the planet. The upper-left frame recalls the vastness of the universe in which we reside; to the right, we see a

⁴ Available at: <https://www.nasa.gov/image-article/apollo-17-blue-marble/>

pie chart typical of environmental reports, pointing to a more scientific and impersonal view of Earth. Following that, in the center-left frame, we can see a clock showing eleven fifty-five, suggesting an imminent crisis and time running out. In the final frames, we observe an eye that gradually zooms out to reveal the narrator in the initial darkness. This progression of images suggests an intensifying human awareness of the environmental problem, from a broad and perhaps abstract view to a more personal focus. This format not only illustrates the complexity of the climate crisis but also evokes a profound reflection on the individual's role in such a crisis and their place within the intricate web of life on Earth.

4 Graphic Novels and Their Potential in Teaching Literature – Climate Change in Focus

Over the centuries, the act of reading has been attributed with various characteristics and purposes. In ancient Greece, the text gained meaning when read aloud, using proper oratory techniques (Cavallo; Chartier, 1998, p. 16). The adventures of Odysseus on his journey back to Ithaca certainly impacted those who were near an orator. In medieval Europe, however, texts began to be read silently or in a murmur, moments in which the reader would come to know God and reflect on the salvation of their soul (Cavallo; Chartier, 1998, p. 21).

Today, discussions continue on the functions of literary reading. Umberto Eco (2004, p. 15) states that “Stories that are “already made” also teach us how to die. [...] of the principal functions of literature lies in these lessons about fate and death”. According to Eco, literature serves humanity as a horizon-expander, allowing people to change their perspectives as they derive meaning from a text. Under this perspective, “It is safe to say, [...] that the posture favored by the teaching of literature can be placed within the broader horizon of making sense of the world from the materiality of language, both from an individual and collective point of view” (Durão; Cechinel, 2022, p. 26⁵).

In this context, fostering the development of readers in schools is crucial to shaping our conceptions and attitudes, directing us toward a less harmful future for the planet and humanity.

⁵ In the original: É seguro dizer, [...] que a postura favorecida pelo ensino de literatura pode ser inserida no horizonte mais amplo de um fazer sentido do mundo a partir da materialidade da linguagem, tanto de um ponto de vista individual quanto coletivo

Although this idea may seem utopian and literary reading alone cannot save the world, encouraging reading in general will foster more critical reflection, including on contemporary issues. Perrone-Moisés (2016, p. 80⁶) emphasizes that:

teaching literature is teaching how to read, and in literate societies, without reading there is no culture; because the ability to read is not innate, but acquired; because literary texts can include all other types of texts that students need to know, to be competent citizens in society.

By exposing students to diverse perspectives and narratives, literature can enrich understanding of the world and human experience. Reading is therefore dynamic, evolving with time and societal needs. Today, one of humanity's most pressing concerns is climate change. What role does literature play in this context? Following our arguments, we respond without hesitation: literature plays a crucial role, particularly in raising awareness and forming opinions on urgent global issues like climate change.

Thus, we strongly advocate for cli-fi as a literary genre capable of offering, creatively and critically, new perspectives and understandings of the human-environment relationship through reading informed by this connection. In exploring how to introduce climate change through literature teaching, Vital (2017, p. 197) concludes that:

Observing how we live, how our built environment designs daily life for us, allows us to take initiative; we do not need to wait for existing movements to prompt us [...] The careful reading of literature [...] helps us further develop this ethical imagination, by illuminating the strengths we can cultivate when faced by hazards we cannot avoid

From this perspective, we can reaffirm that reading literary works addressing climate change can play a fundamental role in forming environmentally conscious and critical citizens. Literature not only offers an image of the world and its problems but also allows readers to reflect on their own lives and relationships with the environment. Beyond this reflection, teaching climate change in the humanities—especially through literary fiction—can be our contribution to the broader context of mitigation, as a collective action to curb the catastrophic effects of this global phenomenon.

⁶ ensinar literatura é ensinar a ler e, nas sociedades letradas, sem leitura não há cultura; porque a capacidade de leitura não é inata, mas adquirida; porque os textos literários podem incluir todos os outros tipos de texto que o aluno deve conhecer, para ser um cidadão apto a viver em sociedade

However, for this side of literature and even the theme of climate change to reach the classroom, teachers must reinvent themselves. Glotfelty (2017, p. 177) points out that: “For educators to become agents in what may be the most serious problem of our time, it is necessary to teach new content, cross disciplinary boundaries, and experiment with new approaches.” Graphic novels fit into our discussion as they offer a reading experience that resonates more easily with contemporary readers, given the visual dominance in media and screens we interact with daily.

This genre stands out due to its complex language and more extensive narrative, differing from other literary forms that also blend text and images, such as comics, manga, and comic strips. Unlike these formats, which often follow distinct purposes and structures, the graphic novel emerges as an alternative to transcend the duality that, until the 1970s, confined hybrid narratives to be seen exclusively as entertainment or part of the underground culture (Pascuali, 2017, p. 42).

Will Eisner, an American comic artist who revolutionized and popularized the world of graphic novels, wrote in his book *Graphic Storytelling and Visual Narrative*: “As experience precedes analysis, the intellectual digestive process is accelerated by the image provided by comics” (Eisner, 2005, p. 19). Based on this assertion, we can conclude that reading texts that combine verbal and non-verbal elements is more accessible and thus more engaging than purely written texts. Therefore, using this type of literature in the classroom may be more motivating than a text composed solely of prose.

The inclusion of graphic novels in educational settings can also facilitate the understanding of complex themes, such as climate change, in a more dynamic and visual manner. This literary genre, blending detailed images with profound narratives, enables readers to engage with the content more deeply and easily. Additionally, graphic novels offer an innovative form of interdisciplinarity, allowing teachers to integrate elements of art, literature, and science in one platform.

Graphic novels’ accessibility also democratizes access to literature and knowledge. Students who struggle with dense prose texts, whether due to language issues, attention deficits, or reading limitations, may find graphic novels an entryway into the literary universe, promoting inclusivity and encouraging reading habits, as the reading experience with graphic novels is often more dynamic and interactive.

Final considerations

It is essential to emphasize the relevance and potential of ecocriticism in contemporary education, especially regarding teaching climate issues, one of today's most pressing topics. Through this article, we highlighted how ecocriticism offers a valuable lens for interpreting and understanding the complex relationship between humans and the environment, while Comparative Literature broadens this understanding by allowing cross-cultural and historical intersections that weave a network of connections among literary works. By exploring new pathways and approaches, educators can develop interdisciplinary teaching methods that not only enrich students' literary understanding but also foster critical environmental awareness.

Teaching literature in the classroom often presents a challenge, requiring teachers to continually reinvent themselves to address topics relevant to students and meaningful to each group's context. This reinvention can enhance student engagement and learning in literature. Through the analyses in this work, we identified potential ways of approaching the two novels in question within a classroom setting. Additionally, this study underscored how graphic novels can spark a literary interest in their target audience, as the combination of visual and textual elements provides a more accessible and inclusive alternative compared to conventional literary texts.

Moreover, we observed the potential of the two novels analyzed here, particularly in how each one addresses the theme of climate emergency. It is worth noting that this comparative analysis cannot encompass the full breadth and complexity of these narratives. Our reading and analytical pathways reveal choices made throughout our research that often limit the scope of our discussion. However, our interest in cli-fi, or climate fiction, has been with us for some time. Writing this article allowed us to revisit past readings and incorporate new ideas, such as highlighting the pedagogical potential of two novels studied in previous research.

Throughout this discussion, we identified three critical pillars underlying the narratives of Squarzoni and McGuire: the presence of scientific evidence and data supporting the undeniable reality of an environmental crisis; the graphic novel genre's ability to manipulate temporality within the narrative to represent both natural time and human time, achievable through fiction; and the call to reflect on the human-environment relationship as a survival strategy for both.

Literature, therefore, remains essential to education and individual development. Its fluid nature promotes constant transformations within various literary genres. These genres, in turn,

evolve to meet contemporary needs and address urgent global issues, such as climate change. Incorporating cli-fi narratives into the educational context offers new perspectives and understandings of the human-environment relationship, enhancing the formation of an ethical imagination and ecological awareness among readers, teachers, and students in (trans)formative classroom settings.

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