Modernization in Environmental Change in the Novel “Baitun Nakhil” by Tarek Eltayeb: Greg Garrard’s Ecocritical Study

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Abstract. Modernization had a significant impact on environmental change. This change is described in the novel “Baitun Nakhil” and studied by using ecocritical theory. Ecocriticism is a way to describe the relationship between humans and nature in all cultural environments. This study aims to identify ecological narratives related to environmental change as the modernization impact in the novel “Baitun Nakhil” by Tarek Eltayeb based on Garrard’s ecocritical perspective. This study is qualitative descriptive. The data used are narratives and dialogue in the novel “Baitun Nakhil”. Data were collected by reading and note-taking techniques. Data were validated by increasing persistence, triangulation, and discussion. Data were analyzed using the Miles and Huberman method, which consists of three stages: data reduction, data presentation, and conclusion. The results of the study are the discovery of environmental change as a modernization impact in several scopes according to Garrard as follows: 1) pastoral narratives in the form of spatial and temporal distinction; 2) pollution caused by cigarettes and sirens; 3) wilderness as in mountains and forest; 4) natural disasters in the form of a snowstorm; 5) dwelling adopts the georgic concept as in Wad Al-Kababish; 6) relation between animals and human as shown by the treatment of animals and imitation of bird sounds; and 7) earth changes initiated by the plastic usage and the construction of greenhouse as conservation efforts. This study proves that modernization destroys nature due to the massive exploitation of natural resources. Conversely, modernization makes it easier to campaign and conserve nature with its sophisticated technology.

Keywords: Ecocriticism, Environmental Change, Greg Garrard, Modernization, Novel

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INTRODUCTION

Modernization as a social transformation has a significant influence not only on human life but also on the environment. Modernization helps humans improve their quality of life with the significant involvement of science and technology. However, such transformations do not always benefit all parties. Improving the quality of human life has different impacts on preserving nature (Schoene, 2022). Human activities centered on science and technology changed the natural environment massively, especially in the industrial revolution era (Slocombe, 2005). Developing an artificial environment instead of rural preservation adjacent to nature significantly influences natural change (Olaoluwa, 2020).

Most humans consider nature to be just an object to satisfy human needs. Modernization that supports uncontrolled human exploitation of nature is a significant factor in environmental damage (Manugeren, et al., 2023). Various phenomena such as war, colonization (David & Bhuvaneswari, 2022), tourism (Pérez-Gil, 2022), urbanization, increasing population, economic development, increasing need for energy, and increasing transportation further exacerbate the destruction of nature (Inmozhi & Kishore, 2023). Ecological issues are becoming increasingly varied, such as pollution, depletion of natural resources, deforestation, declining water and soil quality, climate change, and so on.

Nature and humans must benefit each other (Cotton, 2021). Although humans have the right to use nature, destroying nature is absolutely not justified (Hilmiyatun, Suwandi, Waluyo, & Wardani, 2022). As intelligent beings, humans are responsible for providing solutions to environmental damage. Ecological problems are not enough to be solved only by science and technology (Fawareh, Dakamsih, & Alkouri, 2023). Moral cultivation needs to be applied to each individual to facilitate environmental conservation. This is where literature is considered capable of taking on a vital role in the mission of environmental humanities (Garrard, 2014).

Although written as fiction, literary works can positively influence readers in a tangible way (Schneider-Mayerson, 2020). Literary works are cultural products that interpret the reality of life. Therefore, a literary work is closely related to the environment in which it was created (Syahin, 2022). The ecological values contained in literary works can instill moral awareness of the environment and trigger environmental conservation movements (Juanda, 2023).

The novel “Baitun Nakhil” by Tarek Eltayeb is one of the novels that contains ecological values. This novel is rich of both life values and Sudanese culture. This novel tells the story of Hamza’s life, an immigrant, who longs for the warmth of his hometown amidst the cold desolation of Vienna. Hamza lives in various times and places. The depiction of the place where Hamza lives not only acts as a setting for the story but also becomes an important element that drives the plot of the story. This novel depicts rural life that still coexists directly with nature. In addition, this novel also contrasts the depiction of the countryside with urban life and all its modernity. The ecological value in the novel is also shown by the characters’ behavior, who have a high moral awareness of nature conservation. Hamza, the main character in the novel “Baitun Nakhil”, is described as having an animal-loving nature and often takes
action to preserve the environment. Therefore, this study is done to examine the ecological values depicted in this novel.

The actions of nature conservation in the novel can be revealed more clearly when studied with an ecocritical perspective. Ecocriticism, as a study that highlights the relationship between humans and nature in literary works, carries a significant role in the success of environmental conservation efforts. The main purpose of ecocritical study is to examine how human behavior and response to environmental problems occur in their lives (Fawareh, Dakamsih, & Alkouri, 2023). Ecocriticism has a critical position to prove that aesthetic work must represent the reality of ecological problems (Strombeck, 2019).

Greg Garrard defines ecocriticism as the study that focuses on the relationship of nature and humans across the cultural sphere. In his book Ecocriticism, Garrard explains the concept of pastoral narrative, which aims to portray the countryside and urban contrasts in the novel “Baitun Nakhil.” In addition, Garrard’s ecocriticism also explores the relationship between humans and the environment in six main aspects: pollution, wilderness, apocalypse, dwelling, animals, and the earth (Garrard, 2004).

Environmental pollution occurs when many elements are in the wrong environment. The concept of wilderness refers to nature that has not been contaminated by human civilization at all (Garrard, 2004). Apocalypse signs are indicated by various crises, such as deterioration of natural conditions or irreversible environmental damage (Sukmawan, 2016). The concept of dwelling describes how human relations are related to their obligations and responsibilities to nature (Garrard, 2004). Ecocriticism also examines the relationship between animals and humans as two distinct beings (Jonathan, 2012). In addition, this study also includes changes in the earth as a place where living things live.

Ecocriticism is a study that is quite attractive to critics who pay more attention to the sustainability of nature and the environment. The researchers found several previous studies that raised the theme of ecology in literature, including study related to the harmony of the relationship between humans and nature (Abdelsalam, 2019; Ewaidat, 2019; Malecki, Mossner, & Dobrowolska, 2020; Gouili, 2021; Cotton, 2021; Hilmiyatun, Suwandi, Waluyo, & Wardani, 2022; Kuan, Mohsen, & Othman, 2023; Juanda, 2023; Praveena & Raju, 2023; Nirmala & Surur, 2023), environmental change in the form of environmental damage (Boast, 2020; David & Bhuvaneswari, 2022; Pérez-Gil, 2022; Karthik & Mukherjee, 2022; Inmozhi & Kishore, 2023; Setyawan, Suyitno, Wardani, & Suwandi, 2023; Ismail, 2023) and calls for environmental conservation (Siwi, et al., 2022; Rarasati & Zawawi, 2022; Manugeren, et al., 2023; Ghanem, 2023).

These previous studies have similarities and differences with this study in various aspects. Greg Garrard’s ecocritical theory is used to study the issue of land grabbing (Setyawan, Suyitno, Wardani, & Suwandi, 2023) and marine life (Juanda, 2023). Ecocritical themes are also found in Arabic literature, such as ecological narratives in Egyptian society (Ewaidat, 2019; Abdelsalam, 2019), animal representations of lizards (Gouili, 2021), depictions of deserts (Nirmala & Surur, 2023), the exploitation of nature (Ismail, 2023), the value of ecological wisdom (Rarasati & Zawawi, 2022). Some studies also incorporate other fields of science in their
ecocritical studies, such as colonialism (David & Bhuvaneswari, 2022), economics (Hilmiyatun, Suwandi, Waluyo, & Wardani, 2022), psychology (Inmozhi & Kishore, 2023), and tourism (Pérez-Gil, 2022). The studies also examined environmental damage, such as water and river crises (Boast, 2020; Karthik & Mukherjee, 2022). Depictions of the harmony of nature are also studied, such as in Mahabharata literature (Praveena & Raju, 2023), various classical poems (Cotton, 2021), at the site of the factory (Kuan, Mohsen, & Othman, 2023), human and animal relations (Malecki, Mossner, & Dobrowolska, 2020), the treatment of caring for nature and plants (Siwi, et al., 2022; Ghanem, 2023), and the invitation to caring for nature (Manugeren, et al., 2023).

Based on the description of similarities and differences above, this study aims to uncover the ecological narrative in the Arabic novel, “Baitun Nakhil” by Tarek Eltayeb based on Greg Garrard’s perspective. The ecological narrative in question is the forms of environmental change as an implication of modernization, both in the form of environmental damage and environmental preservation efforts by modern society. This study also intends to enrich the study of ecocriticism which must always exist as a form of moral responsibility for writers and their critics of ecological issues in the modernization era. This study was conducted with the assumption that literary works can contribute to solutions related to environmental problems in the modern era with their ecological narratives.

**METHOD**

This study is qualitative descriptive because it identifies and describes the implications of modernization as a form of human life development on environmental changes described in the novel “Baitun Nakhil” by Tarek Eltayeb. The data source used is in the form of narration and dialogue in the novel “Baitun Nakhil” by Tarek Eltayeb. The researchers chose this novel as the object because the study on this novel had never been carried out before. The character’s dynamic life and the connection of the setting to the storyline are also unique attractions that made researchers interested in analyzing. This study collected data from reading and note-taking techniques. The researchers read the novel entirely while noting the data containing the value of environmental changes in the midst of modernization. Then, the data was validated by improving persistence, triangulation, and discussion. The researchers read and re-matched the collected data and then discussed the validity of the data with the study assistant.

The data in this study were analyzed using the Miles and Huberman analysis method. This model analyzes data in three stages, namely the stages of data reduction, data presentation, and then conclusion. The collected data are sorted and classified into seven suitable scopes, which are pastoral, pollution, wilderness, apocalypse, dwelling, animal, or earth. After that, the researchers presented the data in a table and interpreted it based on Greg Garrard’s ecocritical theory. Then, the researchers draws conclusions from the data to answer the study question.

**RESULT**

The novel “Baitun Nakhil” tells the story of the life journey of Hamza, an immigrant man in Austria who came from Sudan. Eltayeb inserted a depiction of the
environment and its changes in the storytelling of Hamza’s life. It takes place not only in an urban environment but also in a rural setting. Hamza’s life story is carried out from childhood to adulthood so that environmental changes that occur over time are also depicted. Researchers have categorized these forms of environmental change as implications of modernization in the novel “Baitun Nakhil”, according to some scope in Greg Garrard’s ecocritical theory.

<table>
<thead>
<tr>
<th>No</th>
<th>Scopes</th>
<th>Forms</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Pastoral</td>
<td>Spatial Distinction</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Temporal Distinction</td>
</tr>
<tr>
<td>2</td>
<td>Pollution</td>
<td>Cigarette</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Police Car Siren</td>
</tr>
<tr>
<td>3</td>
<td>Wilderness</td>
<td>Mountain Forest</td>
</tr>
<tr>
<td>4</td>
<td>Apocalypse</td>
<td>Snowstorm</td>
</tr>
<tr>
<td>5</td>
<td>Dwelling</td>
<td>Wad Al-Kababish</td>
</tr>
<tr>
<td>6</td>
<td>Animal</td>
<td>Treatment of animals</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Imitation of Bird Sounds</td>
</tr>
<tr>
<td>7</td>
<td>Earth</td>
<td>Greenhouse</td>
</tr>
<tr>
<td></td>
<td></td>
<td>The Usage of Plastic</td>
</tr>
</tbody>
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**Pastoral**

The pastoral narrative is representative of the contrast between urban and rural life (Garrard, 2004). The novel “Baitun Nakhil” tells the story of a young immigrant named Hamza who lives in Vienna, Austria. Hamza was born and raised in a village called Wad al-Nar, which is located in Sudan. Before living in Vienna, Hamza had stopped at places such as Wad al-Kababish, Khartoum, and Medina al-Shams. Eltayeb narrates the places Hamza once lived and shows the reader the differences between urban and rural life. Garrard divides the categorization of pastoral narratives based on two differences, namely spatial distinction (place) and temporal distinction (time) (Garrard, 2004).

**Spatial Distinction**

Spatial distinction contrasts the depiction of urban and rural life as an environment. Urban is described as a lively, modern, and individualist environment. Meanwhile the countryside is associated with peace, tranquility, simplicity of life, and the abundance of natural resources (Gifford, 1999). The depiction of urban areas in the novel “Baitun Nakhil” is taken from life in the city of Vienna.

١) لقد جُربت كل الوسائل هربا من البرد: السينما والمقاهي والمحلات المغلقة. وُجِربت كل وسائل الواصلات: النزام والأوتوبوس والمترو والقطار.
I’ve tried everything to escape the cold: cinemas and cafés and even train stations. And I’ve tried every type of transportation too: trams, buses, trains, and the subway (Eltayeb, 2006, p. 18).

Hamza, a poor immigrant in the big city of Vienna, lives in a room not equipped with heating facilities. During winter, Hamza avoids the cold weather by getting out and taking advantage of the various public buildings that provide heating in the City of Vienna. He entered public buildings such as cinemas, cafes, and train stations to warm himself. In addition, he also tried to take several public transportations such as trams, buses, subways, and trains for the same reason. Various buildings and transportation are an urban characteristic that has been exposed to modernization. Buildings, such as cinemas, cafes, and stations, can generally only be found in urban areas. While forms of transportation in urban areas are more often found in trams, buses, metros, and trains than animals.

The depiction of rural areas in the novel “Baitun Nakhil” is taken from the life of the main character, Hamza’s home village in Wad al-Nar.

Temporal Distinction

Temporal Distinction compares environments that change over time (Garrard, 2004). The change can be for the worse or the better. Novel “Baitun Nakhil” illustrates a comparison of Madinah al-Shams, a city that changed from being affected by modernization.

Nothing’s left of that old place any more. The buildings are different now, and Medinat al-Shams has become crowded. The old spacious houses have vanished, and the lush greenness has turned into the arid yellow of the desert. There’s dust and asphalt everywhere, and the wells have dried up for good. There used to be
hoopoes and nightingales here, and doves and yellow and red canaries, and many other birds that made their nests in the trees—but they’ve all disappeared (Eltayeb, 2006, p. 248).

Medina al-Shams was once a beautiful region. Although humans have changed many natural landscapes by building buildings, the beauty of nature can still be maintained. The tiny human population also causes the environment in Madinah al-Shams not to be too polluted. Wild animals are still found coexisting with humans. Unfortunately, over time, Medina al-Shams continued to change. Urbanization makes this city increasingly crowded with people. As a result, the city’s landscape is constantly changing. A new, more modern building replaced the old building. The greenery of nature that was once still visible and enjoyable is gone. Now, all of that has been replaced by dust and asphalt roads. It also resulted in the absence of birds living freely in the city.

**Pollutions**

Pollution occurs when there are many elements in the wrong ecosystem and interfere with the life of living things in it (Garrard, 2004). Many forms of pollution occur on earth, ranging from pollution of water, soil, air, and so on. The phenomenon of pollution in the novel “Baitun Nakhil” is described in the form of air pollution, light pollution, and noise pollution. One form of air pollution is cigarette smoke.

The driver had stopped smoking, but had started chewing some tobacco instead, for this was the only way he could keep spitting without arousing everyone's anger (Eltayeb, 2006, p. 207).

Hamza and others who also wanted to go to Khartoum left his village on public transport. One of the car’s passengers was a small family whose child suddenly died on the way. Hamza’s car was forced to stop in the middle of the road to exercise the rights of the dead child. Feeling bored, the car driver continued to smoke to pass the time. Although no one reprimanded him directly, the driver eventually realized that his cigarette smoke bothered the other passengers. So, he decided to quit smoking and switch to chewing tobacco.

The form of light and sound pollution in the novel "Baitun Nakhil" is caused by the sound and light emitted by sirens on police cars.

I enter the nearest alley, and hear the noise of the police car turning on its loud siren and its annoying blue lights (Eltayeb, 2006, p. 123).

Hamza was tailed by a police car on his way to the office where he worked in the morning. The car turned on the sirens in his car, and the sound and light disturbed the surrounding atmosphere. The loud sound of sirens disturbs the silence in the early morning when most people are still asleep and have not started their activities. In
Modernization in Environmental Change in the Novel – Bening et al. (166-186)

addition, the light emitted by the sirens of the police car also looks dazzling and disturbs the sight of onlookers.

Wilderness

Wilderness is defined as nature that has not been touched by humans or modernization (Garrard, 2004). The wild nature depicted in the novel “Baitun Nakhil” is a mountain and a forest. The mountain that is still free from human contamination is called Jabal al-Rutab.

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It was broad daylight, and I was in the middle of this marshy forest, uncertain of how I had gotten there. The branches of small trees—the likes of which I had never seen before—were all about me. I couldn’t recognize the pesky insects that were stinging me either. The muddy ground I was standing on resembled henna paste that had been dipped in water. I was in the middle of nowhere and didn’t know which way to go, nor why I was here. I called out at the top of my voice, but there was no reply. All I could hear was a rustling in the branches,
informing me of the presence of animals or reptiles or birds of some sort  
(Eltayeb, 2006, p. 139).

Hamza was placed in the forest when forced into the army. The forest is still preserved as a wild nature with no signs of change due to human intervention. This is illustrated by how Hamza is unable to know the exact location of himself, where he is in the forest. In addition, the absence of humans is also depicted when Hamza tries to shout for help from humans. Unfortunately, due to the isolation of the forest, not a single human can hear his cries. Hamza hears the sounds of wild animals in the forest, a sign that he is in a frightening and dangerous wilderness.

Apocalypse

Apocalyptic narratives not only depict the end of the world, but also disasters that damage the environment (Sukmawan, 2016). Disaster threatens human survival and causes various problems such as loss of property, environmental damage, casualties, and so on. Disaster can occur caused by two factors, humans and nature. The novel “Baitun Nakhil” describes the disaster that occurred due to natural factors of environmental change indicated by a snowstorm.

(8) A big snowstorm hit the afternoon of New Year’s Eve (Eltayeb, 2006, p. 364)

A massive snowstorm hit the city of Vienna on New Year’s Eve. As a resident of Vienna, Hamza was not affected by the snowstorm at all. This is due to the existence of sturdy buildings that protect Hamza from the dangers of snowstorm. Strong winds were unable to enter the house with the windows closed. The cold temperature outside also did not affect Hamza’s ability to seek warmth with space heating. Modernization facilitates human life even to the point that there is no need to worry about disasters like storms.

Dwelling

dwelling is an environment used by humans to form a civilization. People’s life in the novel “Baitun Nakhil” follows the georgic concept where humans use agriculture and animal husbandry as their main livelihood.

(9) The elders said that this village was once an oasis that stretched to the horizon a vast green disc against the yellow of the desert, and that it supplied rams and goats and camels to the north, east, and west. They said that no other village raised such large numbers of animals, and none had broader pastures, for none of them had any lakes that were as big or had such sweet water as the one that had been here (Eltayeb, 2006, p. 65).
Wad al-Kababish was once a fertile oasis in the arid desert. The people of Wad al-Kababish live by using nature as their place of residence by making it a farm. The villagers’ main livelihood source is raising sheep, goats, and camels, which are then sent to the area around them. Wad al-Kababish is the region’s main livestock supplier with the largest pastures and springs. The area has not been affected by modernization, so both the place of residence and life there are still very related and dependent on nature.

The Relationship Between Humans and Animals

The relationship between humans and animals in the novel “Baitun Nakhil” is shown by Hamza’s behavior, which is so fond of animals. His mother’s education from childhood shaped Hamza’s affection for animals.

(10) My mother taught me to kiss anything that anyone dropped on the ground and to set it to the side of the path, so that a bird or some other animal might have it. For all things that fall to the ground are the apportioned lot of animals and birds—that’s what my mother told me (Eltayeb, 2006, p. 24).

Hamza, since childhood, has always been educated by his mother to love animals as fellow living beings who live on earth. This affection is exemplified from the mother’s advice to marginalize food that falls on the streets to a place that humans do not step on. This is done so that animals that live nearby, such as birds, can take the food. Hamza’s mother educated Hamza to make it easier for animals that have lost their natural habitat to get their food.

When Hamza grew up, his love for animals did not necessarily disappear. He has always been interested in animals, although he now lives in cities where animals are rarely found living freely. Therefore, Hamza sometimes regrets being in a modern environment that can only imitate animal sounds and cannot bring in real animals.

(11) I hear birds as well, but they turn out to be a recording, nothing more (Eltayeb, 2006, p. 48)

Sandra invites Hamza to visit the famous Palm House in Vienna. The Palm House was built in such a way as to care for plants that could not live in the cold weather. Hamza also heard the sound of birds inside the Palm House. However, upon closer listening, it is not the sound of a real bird. The sound is just the sound of a recording bird being played continuously. This is done to support the natural atmosphere in Palm House. No real birds are living in the Palm House because the greenhouse is just a manufactures ecosystem. Hamza, who is greatly interested in animals, is disappointed about it.
Changes of the Earth

(12) But after a while, I discovered a new smell, which hadn't been here before: the oppressive smell of plastic. Countless plastic products filled the market now: bags, dishes, plates, spoons, toys, combs, and many other household items. I had never seen so much plastic before. The handmade wooden and metal products were all gone (Eltayeb, 2006, p. 112).

Human lifestyle changes the environment. This was shown when Hamza strolled through the market. He realized that, at that time, plastic products were widely used. They were starting from plastic bags, tableware, children’s toys to household furniture all made of plastic. The scene was very different from when he was a child, when all the tools used were generally made of wood or iron. Now, these items are outdated and no longer used. Plastic items are more widely used because they are considered more practical and efficient than items made of wood or iron.

(13) "No. It’s a beautiful greenhouse on the grounds of the Schönbrunn Palace where they keep tropical plants. It’s called das Palmenhaus. You might like it.”

"Not at all. It was built in the days of Kaiser Franz Joseph the First as a place to keep plants that cannot stand the snow and fierce cold here.” (Eltayeb, 2006, pp. 40-41)

Sandra invites Hamza to The Palm House after knowing that he is from Sudan. Sandra proudly tells of a greenhouse that preserves tropical plants in the cold regions of Vienna. The greenhouse is located in the garden of the Schönbrunn Palace in Vienna, Austria. The Palm House was built during the reign of Emperor Franz Joseph as a place to raise plants that were not strong living in the air and snow in winter. Even though its name is palm house, the building actually only has one palm tree. Even though the name is a palm house, the building actually only has one palm tree, which Hamza finds hillarious but surprisingly enough to cure his homesickness.
DISCUSSION

Pastoral

Pastoral concept compares urban and rural life (Garrard, 2004). The most notable differences between them are the landscape of the environment and the use of technology by its inhabitants. Cities have many modern buildings that signify the improvement of the quality of human life. The types of buildings in urban areas are more varied and function not only as a fulfillment of primary human needs but also secondary and tertiary needs in the form of pleasure and luxury of life. Transportations have also become increasingly varied and effective as a result of modernization. The existence of trams, buses, metros, or trains indicates the advancement of human technology related to the automotive field.

Meanwhile, the countryside is synonymous with unspoiled landscapes and life minimally influenced by modern technology (Garrard, 2004). Rustic buildings are built more simply without interference from modern technology. On the contrary, natural elements are obviously in synergy with rural human life. Development in rural areas is rarely carried out so that the natural ecosystem of the environment is still maintained. Various flora and fauna are easier to find in rural areas than urban ones. In addition, the transportations used by the village community are also still simple. Animals are generally used as the main means of transportation for village people, besides walking.

Pastoral also contrasts the natural environment of the past and present (Garrard, 2004). The phenomenon in Madinah al-Shams illustrates how, over time, the environment continues to due to human social change. Modernization makes the beauty of nature disappear and replaced by artificial environments. The phenomenon of environmental changes occurs due to an anthropocentric view in which humans underestimate the essence of things other than them, in this case, the existence of nature (Love, 2003; Sukmawan, 2016). This leads to modern man’s indifference to the current state of nature (Raine, 2014).

The representation of urban areas is in line with the findings of (Juanda, 2023), which describes cities as environments with complete living facilities, as well as (Inmozhi & Kishore, 2023), which describe them as man-made artificial environments. The findings of this study are also in line with study by (Abdelsalam, 2019; Ewaidat, 2019; Nirmala & Surur, 2023; Ismail, 2023) that describes rural landscapes that are still maintained in beautiful and simple community life alongside nature, as well as studies by (Praveena & Raju, 2023, Setyawan, Suyitno, Wardani, & Suwandi, 2023), that identify human exploitation of nature in the context of urbanization and modernization has an impact on the destruction of nature. Meanwhile the results of this study are not in line with (Kuan, Mohsen, & Othman, 2023), which describe the simple life of the countryside as synonymous with the poverty of its population. The simplicity of rural life is not necessarily related to poverty and helplessness.

The difference between urban and rural is the impact of modernization on human life. Urban is defined as an environment that is heavily exposed to modernization. This is seen from the quality of more modern buildings, the many variants of transportation, and the increasing lifestyle of humans living there. At the same time, the countryside is an environment that has yet to be so affected by
modernization. This is evidenced by the lack of use of modern technology in the lives of its residents. The rural environment is still very integrated with nature compared to urban areas.

This study also explains that modernization as indicated by the urbanization continues to change the shape of the environment over time. The abandoned village became an unmaintained landscape. At the same time, the intended city is expanding and damaging the authenticity of the surrounding nature. It is also possible that the currently unspoiled countryside will turn into a modern city in the future. The price to pay for improving human life is the destruction of the natural environment.

Pollution

This study identifies forms of environmental pollution, such as air, light, and sound pollution. These pollutants occur due to human behavior and discovery (Pepper, Gerba, & Brusseau, 2006). Air pollution comes from cigarette smoke with carbon dioxide that can damage air quality. Cigarette smoke pollutes the air as pollution occurs due to the exhaust gases of motor vehicles and industry. This phenomenon proves that humans change not only the surface of the earth that is visible to the eye but also invisible chemical elements (Garrad, Handwerk, & Wilke, 2014). The exhaust gases resulting from modernization have changed much of the air quality, consisting of a mixture of various chemical elements.

Modern pollution in the form of sound and light pollution comes from sirens. The glare of light emitted by siren lights is light pollution because it interferes with vision, cause discomfort and reduce the visibility. The sound released by the siren is noise pollution because it disturbs the peace of the listener and worse, it can cause hearing impairment (Pepper, Gerba, & Brusseau, 2006). Humans created sirens intending to facilitate some aspects of their lives. However, along with the benefits obtained, the siren also presents small or large disturbances other humans feel. Such disturbing light and sound are categorized as pollution due to modernization (Garrard, 2004). Unfortunately, light and noise pollutions are remains unregulated pollutions even though they reduce the quality of human life (Pepper, Gerba, & Brusseau, 2006).

In line with the results of (Praveena & Raju, 2023), this study revealed that environmental pollution occurs due to human actions. The form of pollution raised is also in line with (Juanda, 2023), who found the use of suicide bombs with very loud sounds as a form of noise pollution. The results of this study are different from (Boast, 2020; Karthik & Mukherjee, 2022), that only focuses on pollution in water circulation and rivers. This difference only lies in the findings of the environmental pollution category due to of human actions.

Environmental pollution is categorized into several forms: air, soil, water, light, sound pollution, and so on. Environmental pollution occurs as a result of human actions, such as smoking. In addition, human discovery as a form of modernization effort also initiates pollution. Even something as simple as a police car siren can be a form of pollution. If its presence disturbs living things in the surrounding ecosystem, light glare and noise can be categorized as a pollution. Environmental pollution is environmental damage that adversely affect humans and other living things.
Wilderness

The depiction of mountains and forests identifies them as wilderness. It is based on the concept of wilderness, which is nature that has not been influenced by human culture (Garrard, 2004). All of the natural changes due to human civilization are utterly invisible in these mountains and forests. This is shown by the absence of residential buildings or agricultural fields, traces of human life, so that both mountains and forests are filled with untouched natural greenery. This illustrates the wildness still saved from human contamination (McKibben, 2003). Forest conditions with many wild animals also fit Speitz’s definition of wilderness, which must accommodate at least 70% of the natural inhabitants (Speitz, 2020). The more pristine the wilderness, the more native species will be found living there. Meanwhile, the more exploited the wild nature, the percentage of wild animals living there will decrease. Furthermore, Hamza’s unrealized efforts to reach other human existences also show the limitations of the forest’s accessibility as wilderness (McKibben, 2006).

This study’s result aligns with study by (Nirmala & Surur, 2023) that describes wilderness as an environment that has not been touched by human civilization. The study describes deserts that humans rarely use as a place to live so that the environment is maintained naturally. The results of this study are also in line with study by (Juanda, 2023) that describes forests where absolutely no human presence is found in them as wilderness. This proves that the forest is a wilderness inhabited by many natural inhabitants.

Changes that occur in nature are closely related to human civilization. When humans begin a civilization, they will utilize the resources around them to improve the quality of their lives continuously. This is called modernization. In the process, humans use and change nature, which causes contamination by technology and other artificial things in the wild. Therefore, human existence is used as an essential indication to determine the purity of a wilderness.

Apocalypse

Natural disasters occur as a result of natural change (McKibben, 2003). The snowstorm occurred due to the natural phenomenon of cold winds and hot winds meeting at one point. Despite the heavy snowstorm, the residents of Vienna were not bothered by it. This is a good impact of modernization. The sturdy buildings built by humans were not shaken in the slightest by the strong winds of the storm. Humans also easily avoid the cold snow by turning on the heating in their homes. Technological sophistication can even predict when a storm will occur so humans can be better prepared by leaving all outdoor activities behind. This is an illustration of how humans are responsible for nature and an anticipation of the concept of apocalypse which used to scare humans with destruction (Garrard, 2004). Apocalypse emerged to increase awareness of environmental destruction so that humans consider knowing the ins and outs of nature and maintaining its sustainability as important things to do.

The results of this study provide a new perspective on study by (Nirmala & Surur, 2023) that depicts traditional humans trying to survive natural disaster of a sandstorm. They couldn’t know when the storm would arrive so it hit them while they
were traveling. Even the buildings they built did not completely protect them from the storm. The sound and strong winds of the storm could still be felt inside their houses. Therefore, traditional humans cannot carry out their activities when a storm comes.

This study illustrates how modern humans survive natural disasters. Humans try to utilize technology to defend themselves from snowstorms that occur due to natural factors. They know when a storm is coming so they don’t go out. Inside the building they built, they did not feel the storm at all. They just had to wait comfortably for the storm to stop and it don’t affect their life at all. Therefore, modernization has a good impact on humans in relation to nature. Modernization helps humans survive natural disasters that occur due to natural factors.

Dwelling

This study found patterns of human habitation that fit the concept of georgic. This concept describes people who make nature their livelihood land (Garrard, 2004). The people of Wad al-Kababish use the natural environment where they live to make a living by farming. They take advantage of the natural conditions around them which are fertile and have not been exposed to modernization. They do not depend on modern technology to raise livestock and traditionally only use existing grasslands and water sources. This lifestyle is done to maintain natural harmony and minimize the exploitation of natural resources (Aberley, 1999). Human dependence on the surrounding nature reinforces ecocritical theories focusing on man’s relationship with nature as part of it rather than a separate entity (Garrard, 2010).

The results of this study are in line with the studies by (Malecki, Mossner, & Dobrowolska, 2020; Ghanem, 2023), that state humans are very dependent on nature in their lives, and (Kuan, Mohsen, & Othman, 2023), which finds that people who live in rural areas inevitably must be able to make good use of the surrounding nature to survive because they are not able to follow the lifestyle of urban people who are closely related to practical and instant technology, and (Nirmala & Surur, 2023), which focuses on the survival of people in the desert who live by farming and taking advantage of the natural surroundings of the fertile oasis where they built civilization.

The depiction of the dwelling shows the life of traditional Georgian people who have not been exposed to modernization. Their lifestyle is still very dependent on nature. The farms they built are still traditional, and the management of cages and animal feed has not utilized any advanced technology. Societies with livelihoods still highly dependent on nature are indicative of traditional human civilization.

Animal

Animals are creatures that coexist with humans on earth (Jonathan, 2012). Biological representations of animals are found in wild animals, farm animals, and domesticated animals (Bleakley, 2000). The lives of the three categories of animals changed because of human’s arbitrary actions. Wild animals lose their natural habitat as humans continue to exploit the nature. Humans don't want to keep wild animals because they feel there is nothing that can be used from them. Meanwhile, farm animals and pets are cared for by humans only for satisfaction. Livestock animals are taken for meat or milk for human consumption. As for pets, they are kept for the
personal enjoyment of humans or their companions. Humans think that keeping animals is the same as protecting them from danger. Even though they do it only to fulfill their lust for ownership. This treatment confirmed Singer’s assertion that humans regard animals as live being inferior to them (Garrard, 2004). Unfair treatment of animals seems permissible in order to satisfy human needs.

Eltayeb expressed his partiality towards animal life by inserting educational values related to this issue in his literature in line with the function of literature as an educational medium (Teeuw, 2018; Surur, 2023). Hamza’s character, who is so affectionate and treats animals well in any simple thing, is expected to inspire readers to do the same (Westling, 2012). Caring for animals is not only done by building large conservation areas that allow animals to live in their natural habits or providing them with expensive food. Simple things can be done to be kind to animals, such as giving them leftover food or making it easier for them to find food by not destroying their food sources. Meanwhile the depiction of birdsong being replaced by recorded sounds is a simple reminder of the aftermath of future human mistreatment (Garrard, Goodbody, Handley, & Posthumus, 2019). This can scare humans of a future where the existence of natural animals is replaced by artificial technology.

In line with the study of (Gouili, 2021), this study finds that most animals have native wildlife habitats far from humans. The growing human population decreases the animal’s habitat. Based on this, this study’s result aligns with (Abdelsalam, 2019) that describes wild animals coming to human habitats to find food. Wild animals that have lost their native ecosystems seek alternatives by visiting manufactured ecosystems. Furthermore, the results of this study are also in line with (Juanda, 2023), which contains an invitation to conserve animals. Each individual can initiate this behavior by treating all types of animals well. It will have a good impact on humans, who need animals to survive.

Humans continue to use nature as a form of modernization, so wild nature, the original habitat of animals, is disappearing. Animals eventually live together in manufactured habitats, both rural and urban. Animals that once foraged in trees now have to forage in human settlements. Many animals that used to be able to live freely in the wild are now farm animals owned by humans. As a result, animal populations are becoming smaller, especially in areas that are dense with human life. Humans really need animals in their lives. It is as simple as an aesthetic necessity that must now be replaced by artificial human technology due to the lack of native animal populations. Humans are expected to raise moral awareness to do good to animals that now live together in manufactured habitats.

Earth

One of the main causes of changes in the earth is human activities that are not environmentally friendly or apply the principles of sustainability. For example, the massive use of plastic by human has excellent potential to damage the earth (Pepper, Gerba, & Brusseau, 2006). Plastic is an industrial material that cannot be decomposed so it has various negative impacts such as natural pollution, accumulation of waste and endangering the health of living creatures. The changes of earth occurred due to modernization and globalization initiated by humans (Garrard, 2004). However, modernization and globalization can also positively impact the sustainability of
nature on earth. This is shown by the conservation of flora and fauna built in an ecosystem entirely different from their original habitat. For example, palms that only live in the hot weather can be preserved in cold Europe with the help of advanced technology such as The Palm House. The greenhouse was also built with the hope of increasing the ecological awareness of its visitors.

The results of this study are in line with (Cotton, 2021) that finds industrial development brought the earth towards damage. Furthermore, capitalism and consumerism also exacerbate the destruction of the earth. Changes occur in the depletion of natural resources used for production materials and pollution initiated by waste and post-production waste. However, the results of this study are also in line with (Rarasati & Zawawi, 2022; Siwi, et al., 2022; Manugeran, et al., 2023) that illustrates the existence of nature conservation efforts amid modernization, urbanization, and industrialization in the global arena. No matter how bad the earth’s landscape is now, efforts to care for the earth can still be made and must continue to be done. This study provides a new perspective on the findings of (Pérez-Gil, 2022), although tourism activities hurt the environment, there are positive things to be had. Tourism activities with destinations related to nature can increase knowledge about nature and awareness of environmental sustainability. This can be seen from the presence of The Palm House as an effort to conserve the environment as well as a tourist attraction.

Earth change due to industrialization and globalization has brought the earth to destruction. Various artificial items that are considered practical contaminate the earth’s nature as a place to live. Various ecological problems arise due to modernization initiated by human actions and greed. As living things on the earth, humans must cultivate awareness to care for nature and other living things on earth. Globalization and modernization that have been unstoppable can be found in loopholes that can be used in the context of nature conservation efforts. Technological sophistication can be used to build artificial ecosystems similar to the original habitat of preserved flora and fauna.

CONCLUSION

Forms of environmental change are categorized according to several scopes in Greg Garrard’s ecocritical theory concept. The pastoral narrative consists of spatial distinction that contrasts urban and rural environments in terms of landscape and temporal distinction that contrasts environmental changes that occur over time. Pollution can be found in the form of air caused by cigarettes and also light and sound pollution caused by sirens. The depiction of wild nature is shown by mountain and forest landscapes. Disaster occurs due to natural factors in the form of a snowstorm. The concept of residence is explained by a society that adopts the georgic concept and builds civilization side by side directly with nature as in Was Al-Kababish. The relationship between humans and animals is shown by the main character’s treatment of animals and the sound of animal sounds by human-made technology. Changes in the earth are described by human behaviour that hurt the earth’s sustainability such as the usage of plastic and efforts in the midst of it to continue caring for the earth by building the greenhouse.
The forms of ecological values found illustrate Eltayeb’s alignment with nature in his literature. The novel “Baitun Nakhil” raises ecological issues surrounding human life due to modernization. This depiction was carried out as a form of criticism of the arbitrary treatment of nature and an effort to disseminate educational values to love nature. Modernization destroys nature due to the massive exploitation of natural resources. Conversely, modernization makes it easier to campaign and conserve nature with its sophisticated technology.

This study uses objects that were published long before this study was conducted. This means some aspects of modernization described in the novel are no longer really reflect the real life that is happening today. Therefore, the relationship between ecocriticism and modernization must continue to be studied, bearing in mind that the development of modernization never ends. Apart from that, study on ecocriticism in general has to be done as a contribution to solving ecological issues among writers and his critics.

REFERENCES


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