

# Ecocatastrophe in Margaret Atwood's *Oryx and Crake*

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## Abstract

This study explores ecocatastrophe in Canadian author Margaret Atwood's novel *Oryx and Crake* through the lens of environmental apocalypticism. By exploring the characters and motifs in the dystopian world of the novel, relevant contemporary themes such as the implications of genetic engineering, unbridled human avarice and consumerism, population growth and the relationship between human beings and the planet that we inhabit are explored. Through the theme of environmental apocalypse, the novel teaches us that only by acknowledging the interior value and integrity of nature and by trying to establish an equal relationship with nature can humans develop harmoniously, together with nature.

**Keywords:** ecocatastrophe, apocalypticism, genetic engineering, overpopulation

## MARGARET ATWOOD'UN *ANTILOP VE FLURYA* ROMANINDA EKOLOJİK FELAKET

### Öz

Bu çalışma, Kanadalı yazar Margaret Atwood'un *Antilop ve Flurya* romanındaki ekolojik felaketi çevresel kıyamet perspektifinden incelemektedir. Romanın distopik dünyasındaki karakterlerin ve motiflerin incelenmesiyle, çalışmada genetik mühendisliğin olası sonuçları, insanın dizginlenemeyen açgözlülüğü ve tüketimi, nüfus artışı, insan ve gezegenimiz arasındaki ilişkiler gibi güncel temalar incelenecektir. Çevresel kıyamet temasına odaklanan roman, doğanın içsel değerinin ve bütünlüğünün kabul edilmesiyle, insanın doğa ile uyumlu bir şekilde gelişebileceğini göstermektedir.

**Anahtar sözcükler:** ekolojik felaket, kıyamet, genetik mühendisliği, aşırı nüfus

## INTRODUCTION

The twentieth century was characterized by unprecedented technological progress in the course of which human beings selfishly did great, often irreversible harm to the existing environment, at times causing irremediable loss. The concrete examples of environmental crisis have been inextricably bound with people's daily lives, attracting the attention of individuals, organizations, and institutions from every field. Solutions to environmental problems brook no delay, and literature plays an indispensable role here. Many writers and critics with a sense of responsibility present real or imagined crises and their serious consequences, aiming to make people feel the urgency of environmental crisis and inspire their consciousness to enact environmental protection. Among these works, environmental apocalypticism, combining features of apocalyptic literature and environmental motifs, plays an important role in warning the world. Environmental apocalyptic literary studies interpret texts to

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excavate the connotations of environmental apocalypticism to enlighten the world and to broaden the research sphere of ecocriticism. By discussing the disastrous consequences of today's deteriorating ecological situation, it can warn people of the potential outcome of destructive intentions and actions. Thus, it can further strengthen people's consciousness of ecological crisis, sound the alarm, and manifest the unique power of environmental apocalypticism in a time when the genre is becoming influential. Therefore, this study analyses Margaret Atwood's novel *Oryx and Crake*, published in 2003, from the perspective of environmental apocalypticism. The paper will interpret the implications of environmental apocalypticism in the novel *Oryx and Crake*, exploring the ecological perspective more deeply and showing its important role in contemporary society.

### ENVIRONMENTAL APOCALYPTICISM

In his ground-breaking 1995 book, *The Environmental Imagination*, Lawrence Buell devotes the entirety of a chapter to detail environmental apocalypticism. Generalizing the metaphorical images of environmental apocalypticism's development through the lens of Leslie Marmon Silko's 1977, *Ceremony*, and Rachel Carson's 1965, *Silent Spring*, Buell explores the creative methods undergirding environmental apocalyptic literature—imagining ecological disasters—and the genre's ultimate intention—warning humanity of the underlying threats. Buell further analyses the origin and characteristics of American environmental apocalypticism, defining it as apocalypticism from an environmental perspective, and explaining its important role in both contemporary ecocriticism and environmental protection. As a literary genre, environmental apocalypticism enlightens us and warns the world of the urgent and existential necessity of attending to environmental concerns. The combination of environmental motifs and apocalyptic literature includes two elements: displaying environmental disasters and perceiving environmental crises. The main theme and structure of environmental apocalypticism is apocalyptic narration, therefore it is necessary to explore an overview of literary apocalypticism first, and then back to the concept and connotation of environmental apocalypticism.

As an important literary genre in Western canon, apocalyptic literature reveals the termination of history by describing a world with terrible and phantasmagoric imagery. According to Rafael Akhmedov, "apocalyptic discourse focuses on the neurotic expectation of the inevitable, tragically experienced End of the World, which is mostly given in different forms of planetary catastrophes" (2020, p. 59). In form, it features prophetic, disastrous, futuristic scenes, and, in purpose, it highlights crises of consciousness and warnings for the world. Among the various forms of apocalyptic literature, modern science fiction, as a popular literary genre, in an age of nuclear weapons threats and the flooding of people's lives and thoughts by mass media, finds favour with authors. Increasingly nature-oriented, science fiction portrays the situation of contemporary people, emphasizing the relationship between practical behaviours and future consequences. It warns people to heed the adverse consequences of technocracy and that they should not evade their own responsibilities. Therefore, this genre features apocalyptic concepts, "addressing the ethical dilemmas and paradoxes of technology" (Stein, 2000, p. 410). Authors of

science fiction frequently employ elements and narrative perspectives of apocalypticism to criticize contemporary politics, ideologies, and social actions. Authors also consider ways to oppose and overcome these challenges using plot construction, character portrayals and secular literary imagery, apocalyptic and ethical in intention. However, exterior elements—violent changes occurring within the text—serve to bring about the end (and transformation) of something interior—changes in readers' wrong ideologies. Although the apocalyptic denouements inside the characters' minds occur in the text individually, the disasters, historically, can be avoided. Essentially, they enlighten, warning people by highlighting crises, urging action to avoid the irredeemable consequences resulting from real crises.

Ostensibly, apocalypse literature seeks to preclude negative events, so apocalypticism actually mirrors certain real crises and makes figurative yet recognisable to compel people to foresee these crises and maintain the consciousness of crisis. The apocalyptic purpose can be achieved only using precautionary measures to stop crisis outbreaks. Still, apocalypse "is brought about not through the revelation of the true world in the visionary's imagination but through the creation of other worlds outside it; and those other worlds do not become the apocalyptic reality but only serve as catalysts for learning" (Stein, 2000, p. 372). It is juxtaposed with the real world, inspiring alteration of people's feelings and sublimation of their consciousness. In fact, this reveals apocalypticism's intention to expose Doomsday in the text and exhort people to heed dangers in reality, altering ideologies and urging action to prevent fictional disaster from occurring in the real world. Through the rhetorical strategies of environmental apocalypticism, ecological writers and critics have developed approaches to changing people's thoughts and behaviours by describing the end of the world. Buell argues, "apocalypse is the single most powerful master metaphor that the contemporary environmental imagination has at its disposal", adding that, "the role of the imagination is central" to apocalypticism, because "the rhetoric of apocalypticism implies that the fate of the world hinges on the arousal of the imagination to a sense of crisis" (1995, p. 285). In other words, only imagining terrible consequences can inspire people's consciousness of crisis, causing people to care about protecting and changing the real world.

Environmental apocalyptic literature refers broadly to novels, science fictions, and prose, emphasizing the disastrous damage to the wilderness that can be caused by technological civilization. The literature intentionally warns of ecological disasters, awakening a sense of ecological consciousness and requiring concern for nature and human destiny. Not only can environmental apocalypticism be used to refute those technocrats who still promote scientific progress and views of human victory over nature, but it can also be used in ecocritical practice to change the world by changing readers' consciousnesses and their relationship with literature. Reading, in this case, is not just a diversion; rather, it is a mirror for the real world where living readers are reflected. Readers enter this world and feel the good and bad; then, their ideologies and behaviours really change. In general, writers attempt to save the environment through environmental apocalypticism. To achieve this aim, authors need to produce a sense of crisis in readers' minds and change people's inappropriate ideologies. The strategy of environmental

apocalypticism is to illustrate the disastrous environmental scenes of the future—environmental apocalyptic denouements—through imagination. This strategy is infectious, because it makes people feel the advent of Doomsday, and the sense of crisis and urgency arises spontaneously. Therefore, environmental apocalypticism seeks to change human thought, motivating people to engage in introspection and assume more responsibility for the living environment. Ecological writers and critics imagine death and disasters not to exaggerate their severity but to encourage actions to evade them by influencing ideology and building respectful relationships with the environment.

Environmental apocalypticism illustrates the evil of material desires via ordinary-yet-wicked images, and hunger for materials is the cause of apocalyptic denouements. Scientific development endows humankind with the unprecedented power to change nature and to stimulate people's material desire simultaneously. Owing to the rapid development of biological and genetic engineering in the late twentieth century, "the grandeur of the divine design is diminished when the great work of redemption is made to hinge on this or that puny time-bound experiment" (Buell, 1995, p. 298). This situation has multiplied humankind's confidence and encouraged the psychology of despising nature, contributing to humankind's arbitrary behaviour against nature that triggers avaricious political and economic thinking and alienates people from one another and from nature. This desire, technological thinking, instrumental reasoning, and belief in the supremacy of economic development are foci of environmental apocalyptic literary criticism, and these are also issues Atwood wanted to highlight when creating *Oryx and Crake*.

In this age of ecological crisis, Margaret Atwood's *Oryx and Crake* expresses her concern for the environment. The names of the two main characters represent an apocalypse: the extinction of the other species foretells the death of the characters, and ultimately, the destruction of humankind. The novel shows readers a near-future world where biological engineering, especially genetic technology, prompted by profit, avarice, and arrogance, develops abnormally and results in great disasters—the death of the world and civilization. As Colin Francisco Pedron states, "Atwood's cynical characters work within a dystopian, technocratic projection of modern society in order to create a new story of human transgression" (2016, p. 3). Seen in the context of environmental apocalyptic literature, the novel "is a story about the potential dilemmas and unintended consequences of biotechnology gone too far" (Sanderson, 2013, p. 219); this horrific description awakens people to the imminent crisis, suggesting that it is time to act since the harmful negative effects of genetic technology have already appeared in people's daily lives. Therefore, *Oryx and Crake* retains strong appeal, and its resonant theme of environmental apocalypticism strikes a chord globally. Presenting a shocking picture, the novel urges readers to think about whether scientific and technological development have overstepped a boundary, leading us towards madness. Atwood's sensitivity to the environmental crisis and descriptions of the terrible consequences awaken people, who realize abruptly that the differences between the current situation and the novel's predicted disasters have shrunk.

## ECOLOGICAL THREAT: GENETIC ENGINEERING

The setting for *Oryx and Crake* is a futuristic wasteland, set after the collapse of the global ecosystem. The protagonist and narrator, Snowman, survives the human-made global plague and must reside alone in the world's ruins. "The post-catastrophic Snowman struggles to survive" (Wochele, 2012, p. 32) searching for resources in the ruins of his former home. Snowman is likely humankind's only survivor. Whatever living beings he meets are the products of biological engineering, in Jay Senders' terms, they are "genetically engineered animals" and "hybrid creatures" (2013, p. 219): the pigeons, raised for organ transplantation; the wolvogs, combining the cleverness of dogs and the violence of wolves; the Crakers, who are immune to diseases, tame, innocent, humanlike, and beautiful. His narration varies from his present struggles for food on the wasteland to his past when he was young and named Jimmy. Atwood's future society is divided into two parts, compounds and pleeblands. The former are isolated places where the highly qualified scientists and technicians and their families study, live, and work—similar to enterprises in life today. The latter is despised by compound society as dirty, backward and ignorant. Jimmy's father works for a company specializing in cultivating organs for transplantation, and one product is pigeons. Together with his best friend Crake, who creates those Crakers of the future waste land, Jimmy watches pornographic films and surfs the internet. Crake, because of his scientific genius, holds a lucrative position in a biological engineering company. Beautiful Oryx, Crake's assistant, had been abducted from Asia and brought to America. In extreme poverty, she had experienced a bitter childhood, working as a young prostitute and making pornographic films for paedophiles. Both Jimmy and Crake are attracted to Oryx, and they become entangled in a love triangle. Crake's resulting jealousy and revenge become an exterior factor for the disaster. In charge of a top-secret research project, called "Paradise", involving cloning, embryonic organs, and genetic study, Crake devotes himself enthusiastically to this research, expecting to realize humans' dream of permanent youth, health, and beauty while profiting from this ambitious project.

Biological genetic engineering sits at the forefront of modern scientific technology, simplifying and partitioning the subjects, performing controllable experiments, and reducing natural life into basic elements to acquire a complete understanding of nature and life, for the purposes of control. Performing genetic engineering renders the long process of evolution meaningless, and accordingly, the meaning of time changes. Similarly, humans see themselves as the Creator by virtue of these abilities. However, the development of genetic technology should be placed under special supervision because inappropriate development will incur ethical problems, social turmoil, and potentially endanger the existence of humans. Much scientific research doubly twists natural things, interfering in natural processes and creating human-made nature. In *Oryx and Crake*, the college environment is completely artificial, created by humans, for humans, with no interest or value placed on the ecosystem. For quick profit, new genetic products are used in spite of deficiencies. For example, huge artificial rocks can act as natural lawn regulators, but they can explode during heavy rainfalls.

Atwood's humans even take advantage of genetic splicing technology arbitrarily. For example, they force a tree to produce the fruit of another tree. Of course, there are many such instances in real life. It cannot be said that such acts are completely wrong, but they change the natural systems. In the Compounds' biochemical laboratories, the master-hands on genetic splicing did many ridiculous things. They spliced together some genes of different species and created such living beings as pigeons, wolvoogs, rakunks, snats, spoats and various spliced plants. They felt they were creating animals, just as God had done. But some of their creations were too dangerous and had to be destroyed: "A number of the experiments were destroyed because they were too dangerous around - who needed a cane toad with a prehensile tail like a chameleon's that might climb in through the bathroom window and blind you while you were brushing your teeth?" (Atwood, 2003, p. 51) Some exotic splices became either overwhelmed or spread, choking out native plants. The "chick" specializing in producing drum-sticks or breasts is called it ChickieNobs, "a chickenlike bulby creature with no head, therefore no nervous system" (Özmen and Vardar, 2019, p. 150).

[...] a large bulblike object that seemed to be covered with stippled whitish-yellow skin. Out of it came twenty thick fleshy tubes, and at the end of each tube another bulb was growing [...] There's a mouth opening at the top, they dump the nutrients in there. No eyes or beak or anything [...] They'd removed all the brain functions that had nothing to do with digestion, assimilation, and growth (Atwood, 2003, p. 202-203).

How could this be a chick? The pigeon at least had a head. There is only one criterion here: pragmatism. Without considering morality and objective laws, they even want to create humans! They treated human cells and tissue objectively, as just protein of life and nothing sacred. "Once the proteonome had been fully analysed and interspecies gene and part-gene splicing were thoroughly underway, the Paradise Project or something like it had been only a matter of time" (p. 302-303). In addition, they hope to market various hybrids: genetically modified babies or on-demand babies. If they are below standard, they will be recycled into satisfactory parts until perfect babies are produced.

Scientists alter the biological properties of human beings and their social ideologies. The obviously destructive features in the Crakers' neural complexes have been dispelled, which would have created persistent maladies: racialism, hierarchy, and territoriality. Nevertheless, Crakers later develop such features. After all, the law of evolution cannot be altered. Genetic technology becomes something dangerous in Atwood's commercialized environment, with genetic products exposing the absurdity of genetic splicing. These images, like images of nuclear weapons, cause spasms in people's hearts. The fear sweeps everywhere, forcing people to seriously consider the horrific consequences of genetic engineering and to perceive the severity of apocalyptic denouements.

Atwood's *Oryx and Crake* attracts wide attention because she does not imagine a distant future, deducing instead a near-future panorama, according to the phenomena existing in the society today. Especially when today's genetic engineering spreads quickly, with the appearance of the spliced liger and cloned sheep and cattle, humankind will probably create more weird things, seduced by endless desires and economic interests. In *Oryx and Crake*, Jimmy felt that

human behaviour had overstepped a certain boundary and something impermissible seemed to have happened: "Jimmy had a cold feeling, a feeling that reminded him of the time his mother had left home: the same sense of the forbidden, of a door swinging open that ought to be kept locked [...] (Atwood, 2003, p. 216). Since humankind can largely behave according to his own will, then everything is the expression of the subjective will of humankind: "How much is too much? How far is too far?" (p. 206) Atwood has deep insights into human behaviours. She perceives the possible evil consequences of biological genetic engineering and awakens us to these dangers with her apocalyptic descriptions.

Criticisms of industrial civilization, especially the impact of science and technology, also pervade environmental apocalyptic literature. However, criticizing industrial science and technology is not to deny their value but to stress existing fatal deficiencies therein. Industrial civilization has destroyed nature and brought about serious environmental crises. Indeed, inventions can set people free from the exhausting physical labour, making life more comfortable and prosperous; still, they bring serious insecurity to people's lives and make humans slaves to the technological environment. Currently, people can accurately predict an action's consequences via modern scientific technology. The modern "apocalyptic prophet" now appears in the public eye dressed in lab coats rather than the desert robes of the prophet or the preacher's vestments. In order to satisfy people's desires and obtain high profits, sci-tech develops quickly under the banner of benefiting humankind, speeding up humanity's conquest of nature and creating the mythology of humankind's superiority and right to control nature. However, this distorts nature, breaks natural laws, confuses the eco-system, and brings calamitous destruction to humankind and nature alike. In the future world of *Oryx and Crake*, the climate and seasons are in a state of chaos. Crake transfers to Jimmy's High School "in September or October, one of those months that used to be called *autumn*" (p. 71). Besides altering the seasons, the civilization described by Atwood had changed the geographical situation completely: "[...] the coastal aquifers turned salty and the northern permafrost melted and the vast tundra bubbled with methane, and the drought in the midcontinental plains regions went on and on, and the Asian steppes turned to sand dunes [...]" (p. 24). The eruption of a volcano on a faraway island caused a massive tsunami, which, together with the rapid sea level rise, washed away coastal cities, submerging some residential areas like New York.

However, nature is not primarily humanity's object. The relationship between humankind and nature is beyond conquering and being conquered. Actually, products or by-products of technological progress may someday destroy the human life. Moreover, the development of sci-tech must be supervised; otherwise, driven by desire, unsupervised, unrestricted sci-tech will develop into technocracy and insanity, with potential consequences more serious than those of political centralization. Technology forms a vast, complicated network, seemingly gaining its own life. It can strengthen itself and follow its own working rules, which humans cannot control or prevent, becoming a power unto itself. Once scientific progress deserts humanitarianism and ignores ecological protection, it will bring about unexpected, uncontrollable disasters when benefiting humankind, including perhaps the complete destruction of humanity and the natural

environment. It can be said that once scholars' wisdom or science itself digresses from the ethical track, it will breed irredeemable tragedy. Crake possesses the capability to change the fate of humankind. He can predict the negative effects of his research achievement, "BlyssPluss", and he recognises his responsibility for the whole system, but his extreme psychology urges him to make a decision to destroy everything. He consciously contributes to the apocalyptic denouement. Therefore, Atwood insists that scientists should assume ethical responsibility in the course of development and application of high sci-tech. With her creations, Atwood compels people to consider the relationship between science and nature. Science without serious regulation and management, once used by persons with ulterior motives as a tool to control nature arbitrarily, will cause irreversible destruction to humankind and nature.

### **SOCIAL DYSTOPIA**

*Oryx and Crake* reveals that unfettered development of industrial technology causes devastation and alienation. The pursuit of self-satisfaction and omnipotence causes people to follow technology blindly, while dependence on technological rationality results in the reduction of human experience, the exhaustion of their imagination and emotion, and the destitution of existence. The lack of art is an embodiment of people's exhausted emotions, for art exists in the future world, but it has been pushed to the margin, almost becoming extinct. People no longer need art because computer applications enable anyone to splice together whatever they want by digitally altering old material or creating new animations (Atwood, 2003, p. 17). The curricular emphasis in EduCompounds has switched to contemporary arenas—applied biological engineering, with no one interested in art. The Arts are used merely to decorate "the cold, hard and numerical real world" (p. 188). Crake compares art to the male frog in mating season, depreciating its role:

"The male frog, in mating season" said Crake, "makes as much noise as it can. The females are attracted to the male frog with the biggest, deepest voice because it suggests a more powerful frog, one with superior genes. Small male frogs – it's been documented - discover that if they position themselves in empty drainpipes, the pipe acts as a voice amplifier, and the small frog appears much larger than it really is. [...] So that's what art is, for the artist (p. 168).

Formal education without art has transformed Crake into a technical machine, devoting his energy to technical research and losing human feelings. He watches his own mother indifferently as she, infected by a fierce germ, dissolves to liquid. Though this is perhaps an act Crake takes to preserve his dignity under the pressure of the Compound, what he does later shows that this pretended indifference has become a characteristic. When he first creates Crakers, his researchers have to alter ordinary human embryos, derived illegally and secretly. Clearly they acquire those embryos through abnormal channels, which exist today, when people buy and sell human organs for exorbitant profits and kill to obtain people's organs.

Modern media and communication shortens distances between people but alienates them. Still, people can completely satisfy their material desires, and they forget that nature is the root of humankind. Two people can sit face to face without saying anything, holding cell phones and

texting nonstop. Similarly, in *Oryx and Crake*, Crake “had two computers, so they could sit with their backs to each other, one at each. [...] It did seem weird to have the two of them in the same room, back to back, playing on computers” (p. 77). Actually, humankind is now living in a self-created weird circle, just like Jimmy, who had grown up with visible or invisible walls, becoming an enclosed framework.

As a productive force, science and technology is non-political, but it is politicized and obtains the properties of ideology that can rule humankind. Its ability to justify injustice surpasses other ideologies. In *Oryx and Crake*, the EduCompound and Sci-techCompound are interconnected. The rival EduCompounds bid briskly for top students, who will enter Sci-techCompound with benefits after graduation. The Compounds do not need to ration goods and services during mass shortages because their research provides pleeblands for monetary exchange.

Atwood’s genetic engineers, with purely scientific intentions, devote themselves to improving life. They grow neo-cortex tissue in a pigoon’s brain to cure strokes. However, the good intentions of the scientists could cause disaster once commerce manipulates them for profit. Disease, sex, and culture are brought to market when economy supersedes everything: “[...] illness isn’t productive. In itself, it generates no commodities and therefore no money. Although it is an excuse for a lot of activity, all it really does moneywise is cause wealth to flow from the sick to the well. From patients to doctors, from clients to cure-peddlers. Money osmosis you might call it” (p. 210). In this dystopian world, scientists create illnesses, hawking them to continue making money. Crake’s father discovers this economic operating mechanism. Ethical responsibility leads him to expose the truth, but he is murdered. Within some codes of market societies, individuals are cogs in machines. If a part breaks, it can be replaced without influencing the machine’s operation; new parts await. The mechanism will not stop because of a deteriorated part. Candidates may know the truth, but they do not act. In real life, individuals have no power to change such huge mechanisms even if they realize maladies exist. As Jimmy’s father says, “Anyway, it’s been paying for your room and board, it’s been putting the food on your table. You’re hardly in a position to take the high ground” (p. 57).

In today’s market economy, intangibles—beauty, weight, thighs, waists, breasts, feelings like hope and fear, desire and revulsion—become commodities, priced and arranged as cost accounting and shopping lists. Art serves the economy: When love, art, poetic flavour and soul are integrated into an economical system to be packaged and sold wholesale or retail, where does life’s sublimation lead? Therefore, the systemized anti-sublimation gains a thorough victory with the support of market and the scientific technology. Atwood’s insane economy causes corresponding political problems. In order to profit, each compound unceasingly develops productive crops on huge plantations, throwing people out of business and reducing them to starvation-level poverty. The global resistance movement is politicized. Compound personnel are car-bombed, kidnapped, shot, or beaten by mobs; peasants are massacred by the army. Riots involve numerous countries. As a fugitive, Jimmy’s mother participates in political movements internationally. Atwood’s vision shows global politics in a state of chaos, fuelled by latent crises

in modern transnational mass production. The manic economy and chaotic politics will further intensify technology's utilitarianism and further deteriorate the environment, quickening the tempo of environmental apocalyptic denouement.

### HUMAN RELATIONSHIP WITH THE ENVIRONMENT

Rapid population growth, like the threat of nuclear weapons, can inspire apocalyptic thinking. Thomas Malthus, in *An Essay on the Principle of Population*, insisted that "social policy s be guided by ecological necessity" (Garrard, 2004, p. 93) refuting the Utopia of inexhaustible material and moral progress because "the power of population is indefinitely greater than the power of the earth to produce subsistence for man" (Malthus, 1998, p. 4) in a contrast between an exponential progression and an arithmetical one. If social policy is guided solely by humans' unrestricted material desire, then dystopia will be the consequence. As Greg Garrard states, "population will always increase to the point where 'misery and vice' halt it, Malthus claimed" (2004, p. 94). Here, "misery and vice" are famine, war, and plague from overpopulation.

*Oryx and Crake* embodies three forms of suffering. The environment is deteriorating; and the weather so weird it can no longer be forecast, causing the crops to suffer from waterlogging, drought, and terrible conditions. Under pressure from limited resources, climate deterioration and population increases are followed by famine. Girls are forced to have more babies, and more children are sold because of limited food supply. War brings about not just disaster, but complete ecosystem destruction. Population is like a malignant tumour, and the real cure is radical surgery. Since humans are neither willing to restrict their numbers nor reduce their material demand, Crake, for the sake of humankind and the environment, performs radical surgery, slashing the population by spreading a fatal pestilence. Crake uniquely comprehends humankind: "You can't couple a minimum access to food with an expanding population indefinitely. *Homo sapiens* doesn't seem able to cut himself off at the supply end. He's one of the few species that doesn't limit reproduction in the face of dwindling resources" (Atwood, 2003, p. 119). In this dystopian world, humanity is doomed either by hope or desperation. The increasing population has always conflicted with depleted resources. Since the invention of agriculture, this conflict has intensified: "[...] the human experiment was doomed, first to gigantism due to a maxed-out food supply, and then to extinction, once all the available nutrients had been hoovered up" (p. 242-243). Humanity's main by-products are corpses and rubble. Huankind never learned, making "the same cretinous mistakes over and over, trading short-term gain for long-term pain" (p. 243). Crake does not think humans can realize the severity of reality by themselves, and, even if they can, they will make no change. As a responsible scientist, Crake must give humans an apocalypse, a bitter one:

I've seen the latest confidential Corps demographic reports. As a species we're in deep trouble, worse than anyone 's saying. They're afraid to release the stats because people might just give up, but take it from me, we're running out of space-time. Demand for resources has exceeded supply for decades in marginal geopolitical areas, hence the famines and droughts; but very soon, demand is going to exceed supply *for everyone*. (p. 294-295)

Crake's "BlyssPluss" pill will benefit the individual users and society as a whole, even the planet. For individuals, the benefit is profit; for the planet, the benefit is annihilation of their common exploiter and oppressor—humanity. This is the sacred responsibility that Crake fulfilled. Crake realized his aim, solving the overpopulation problem but leaving nothing to the world except a wasteland with Snowman alone. Crake's gift to humankind of apocalypse is radical; Atwood expresses her concerns about the future of humankind and the planet via this environmental apocalypse.

## CONCLUSION

This study analyses the connotations of environmental apocalypticism in Atwood's novel *Oryx and Crake*, reflecting on the theme of future environmental disasters by focusing on the following: disasters from industrial technology, absurdities of genetic engineering, economic madness and political chaos, and problems of overpopulation. The one-sided emphasis on the positive effects of technology and the technological development of human civilization without considering ecological integrity will cause irredeemable environmental disasters. Through the environmental apocalyptic warning, this study clarifies the connotations of environmental apocalypticism in and out of the text, helping readers to understand the possibility and severity of environmental apocalyptic denouement and developing consciousness of environmental crisis, which is practically significant. *Oryx and Crake* is not merely a literary work for the enjoyment of readers. It contains deep philosophies, revealing Atwood's concerns about nature, systems, and the planet. Atwood's environmental concern is fully expressed in this work, which has sounded the alarm for humans to protect the environment.

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