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# MITIGATING THE POTENTIAL CONSEQUENCES OF CLIMATE CHANGE AND THE GLOBAL WEATHER PATTERNS IN KIM STANLEY ROBINSON'S FIFTY DEGREES BELOW: AN ECO-CONSCIOUS PERSPECTIVE

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## ABSTRACT

In his novel Fifty Degrees Below, the second book of his Science in the Capital Trilogy (also titled Green Earth), Kim Stanley Robinson triggers the impact of climate change on Earth and mitigates the upsurging crisis. This paper analyses the crucial efforts that are to be taken to battle anthropogenic climate change which is essentially the human influence of climate change on Earth's climate patterns. The paper also aims at exposing the palaeolithic lifestyle adopted by the National Science Foundation scientist Frank Vanderval as he practises outdoor sleeping and hunting. Robinson's plea for scientific approaches to restart the Gulf Stream is reiterated in this article to avert ecological disasters. Robinson's narrative is framed in its ethical obligation to protect the forthcoming generations from the consequences of climate change. The paper focuses on the rising temperatures juxtaposing the connection of science, politics, and policy-making. The necessity to practice new climatic adaptations is also revealed in the paper to protect the ecological environment as implemented by Robinson. The various strategies to address climate change as implied by Robinson are effectively portrayed in the paper to analyse the global weather patterns from an eco-conscious perspective.

**Keywords:** Climate Change, Crisis, Anthropogenic, Palaeolithic, Politics, Policy-Making

## 1. INTRODUCTION

In his novel Fifty Degrees Below, the second book of his Science in the Capital trilogy (also titled Green Earth), Kim Stanley Robinson triggers the impact of climate change on Earth and mitigates the upsurging crisis. This paper analyses the crucial efforts that are to be taken to battle anthropogenic climate change which is essentially the human influence of climate change on Earth's climate patterns. The paper also aims at exposing the palaeolithic lifestyle adopted by the National Science Foundation scientist Frank Vanderval as he practises outdoor sleeping and hunting. Robinson's plea for scientific approaches to restart the Gulf Stream is reiterated in this article to avert ecological disasters. Robinson's narrative is framed in its ethical obligation to protect the forthcoming generations from the consequences of climate change. The paper focuses on the rising temperatures juxtaposing the connection of science, politics, and policy-making. The necessity to practice new climatic adaptations is also revealed in the paper to protect the ecological environment as implemented by Robinson. The various strategies to address climate change as implied by Robinson are effectively

portrayed in the paper to analyse the global weather patterns from an eco-conscious perspective. As Mayerson conveys in his article, "the eco-political value of environmental literature has been a key subtext for the growing interest in climate fiction in (liberal) popular discourse and the academic fields of ecocriticism and environmental humanities" (474).

Robinson in his Fifty Degrees Below discusses the "climate atrocious" conditions that prevail in America as a result of the "act of climate terrorism" (284). He features the disasters caused in America as a result of the climate crisis. His description of the flood-tattered city of Columbia pictures the worst consequences of climate change. Here Robinson stresses the importance of identifying our interconnection with the natural world and the necessity to defend and preserve it. Flooding plays a noteworthy part as one of the significances of climate change. As the novel develops, the rising global temperatures and melting Arctic ice are found to showcase an augmented danger of flooding, predominantly in coastal areas. The city's insufficient infrastructure brawls to manage the changing climate, ensuing in swamping and water damage. The flooding disturbs daily life, paving the way to power outages, and stresses substantial tension on the city's properties and systems as a whole:

The Potomac had ballooned into a temporary lake of about a thousand square miles; the lake had lasted only a week, but in that time inflicted great damage. Much of the city was trashed. Rock Creek had torn out its banks, the Mall was covered by mud; the Tidal Basin was now part of the river again, with the Jefferson Memorial standing in the shallows of the current. Many streets were blocked with debris; worse, in transport terms, many Metro tunnels had flooded, and would take months to repair. Alexandria was wrecked. Most of the region's bridges were knocked out or suspect. The power grid was uncertain, the sewage system likewise; epidemic disease was a distant possibility. (285)

Frank himself witnesses the climate disasters that destroyed thousands of residences, jeopardising people's lives. Frank's observation of the devastated city outlines the trauma caused by climate change in the daily lives of common people. As he views it, the places are "physically repulsive in the extreme" (287). Due to severe damages, he too had to disclose his apartment to his owner, and "had nowhere to go" (287). Frank also understands from a newspaper article that "Rock Creek Park" is "officially closed" due to severe flood damages and that it has become a "no-man's land" or "a return to wilderness" (287). Robinson has elaborated upon the impact of climate change realistically by discussing the wildlife at the National Zoo being dispersed after the floods – "The article in the Post had mentioned that many of the animals from the National Zoo had not yet been recaptured. All of them had been let loose just before the zoo was inundated, to give them a chance of surviving. Some had drowned anyway; most had been recovered; but not all" (290).

Robinson points out the impacts of environmental changes on animal habitats and ecosystems. He thoroughly examines the interrelation of the different species and the consequences of climate change that disturb these complex relationships. Through this approach, he explores the ethical magnitudes of human actions in relation to the natural environment. As Adeline Johns-Putra comments in her article "Ecocriticism, Genre, and Climate Change: Reading the Utopian Vision of Kim Stanley Robinson's Science in the Capital Trilogy" Robinson's representation of climate change is a complex set of negotiations - "Nonetheless, as we shall see, in applying science fiction strategies to the depiction of climate change, Robinson does not simply establish a future, climate-changed novum; indeed, he compromises its status as a novum in generically challenging ways" (750).

In order to explore the interconnectedness between man and the ecological environment, Robinson traces back the "nomadic existence" of man through Frank's "paleolithic lifestyle" (295). As Frank is left without a home for survival, he chooses to live in the wilderness and finds it exciting. As the novel elaborates,

He would spend some of his time hunting for animals. A kind of return to the paleolithic, right here in Washington, D.C. Repaleolithization: it sounded very scientific, like the engineers who spoke of amishization when they meant to simplify a design. Landscape restoration inside the brain. The pursuit of happiness; and the happiness was in the pursuit. (315)

Aaron Jonas Stutz in his article "Paleolithic" underscores the term paleolithic which means "the old stone age" (1). According to Stutz, "the Paleolithic era encompasses more than 3 million years of hominin prehistory. It covers the emergence of human hunting and gathering" (1). However, the technological complexity that Stutz hints at is the reason behind the disappearance of the paleolithic age and here Robinson connects the age-old lifestyle amidst the chaos of climate change as Frank observes this change in his lifestyle. He starts living in a van amidst the wilderness and according to him, it is "city and forest simultaneously" (314). Amidst the dangers of zoo animals surviving around, Frank opts for

this unique lifestyle and goes to the extent of singing along with the gibbons in the wilderness. Frank even desires to sing higher and it sounds an "intoxicating music" (316) to him:

"Ooooooooooop!"

He shivered deep in his flesh, like a horse.

The sound came from overhead, a rising "ooooooooooo" like the cooing of a dove, or the call of a coyote. A voice, or a kind of siren – musical, unearthly, bizarre. Glissandos up and down. Voices, yes. Gibbons and/ or siamangs. It sounded as if there were several of them. "Oooooop! Ooooooooooop! Ooooooooooooop!" Low to high, penetrating and pure. The hair on Frank's neck stuck out.

He tried it to himself. "Oooooooop!" he sang, softly. It seemed to fit in, he could do a fair imitation of one part of their range. His voice wasn't as fluid. Or as clear in tone, and yet still it was somewhat the same. Close enough to join in. (316)

Frank's abrupt life in the wilderness resonates with Robinson's plea for a lifestyle that is entangled with the ecological environment. In spite of Charlie's rigorous efforts in drafting the bill for climate change, it turns out futile as Phil, the senator had to dismantle the bill for getting "a small part of it passed" (317). Robinson warns of a scarcity of food reserves and brings in examples of such a situation in America caused by abrupt climate change. The members of the National Science Board that included Frank, and his teammates Kenzo and Diane discuss the "compelling evidence" of the map that represents the Gulf Stream breaking apart to "trigger" an abrupt climate change (335). As Kenzo points out to the Pentagon report on abrupt climate change, he hints at the "threat to national security" as the report warns of starvation in the near future (335). As Diane comments,

"Well, there are no food reserves to speak of. I know the food production problem appears to be solved, but there were never any reserves built up. Its just assumed more could always be grown. But Europe pretty much grows its own food. That's six hundred and fifty million people. It's the Gulf Stream that allows that. The Gulf Stream moves about a petawatt northward, that's a million billion watts, or about a hundred times as much energy as humanity generates. Canada, at the same latitude as Europe, only grows enough to feed its thirty million people, plus about double that ingrain. They could up it a little if they had to, but think of Europe with a climate suddenly like Canada's – how are they going to feed themselves? They'll have a four - or five hundred – million – person shortfall." (335)

The Pentagon reports are internal documents and its findings were considered "inconvenient" to the administration. Evidently, the document was kept opaque as it was feared of triggering fear among the public. But somehow, the document was published in the Fortune Magazine, thereby stirring ripples. As a result, the public expected a change in the investment pattern of the World Bank. Even the "Bank's Extractive Industries Review Commission" had suggested, "cut off all investment in fossil fuels" to divert money into "clean renewables" (335). Robinson very clearly asserts that amidst all such warnings, the Bank Board voted "to keep their investment pattern the same, which means ninety-four percent to fossil fuels and six percent to renewables" (336). Afterwards, the Pentagon report suffered the same fate as that happened to the previous bills as it was easily forgotten.

Furthermore, the NSF (National Science Foundation) has taken the climate change crisis to be a serious one and quadrupled money to "environmental programs" and requested every government and industrial sector to follow the same. Here, in this context, Edgardo, another member of the foundation resonates with Robinson's claims as he states that "forty-five percent of Earth's land surface" is transformed by humans (336). Also, fifty percent of fresh water is found to be used and on the other hand, two-thirds of the marine fisheries are "fully exploited or depleted" (336). Robinson's warning states that carbon-di-oxide emitted into the atmosphere are thirty percent "higher than before the industrial revolution", and a "quarter of all bird species extinct" (336). The committee members discuss the climate change crisis in an alarming tone as the Gulf Stream and global warming threats are to be dealt with immediately. Maarten K. van Aalst in his article "The Impacts of Climate Change on the Risk of Natural Disasters" urges the need to climate disaster reductions:

Over the past two decades, evidence has mounted that the global climate is changing, and that anthropogenic greenhouse gas emissions are largely to blame. While changes in average conditions can have serious consequences by themselves, the main impacts of global climate change will be felt due to changes in climate variability and weather extremes. (5)

Robinson's warning is alarming as he hints at various catastrophic events that happen around the world due to the rapid melting of ice in polar regions. He lists the anomalies of catastrophes that shake the world like "a tornado in

Halifax Nova Scotia", "the catastrophic year of drought in Ireland", the floods that throng the Los Angeles River and many others that are "both acute and chronic, a matter of hours or a matter of years" (405). Here Robinson alarmingly conveys that these catastrophes can affect anyone, maybe even his readers. His writings point out the emergency of the climate crisis as he delineates the scientific proof of the real impending crisis that the human race is exposed to:

> At the poles the results were particularly profound, because of major and rapid changes in the ice. For reasons poorly understood, both polar regions were warming much faster than the rest of the planet. In the north the breakup of the Arctic Ocean's sea ice had led to the imminent extinction of many species, including the polar bear, and the stall of the Gulf Stream. In the south it had resulted in the rapid breakup of the giant ice shelves hugging the Antarctic coast, unblocking the big glaciers falling into the Ross Sea so that they became "ice rivers," moving so rapidly down their channels that they were destabilizing the West Antarctic Ice Sheet, the biggest variable in the whole picture: if this sheet came off its underwater perch on the seafloor, the world would suffer impacts greater by far than what had been witnessed already, most especially a rapid rise in sea level, up to as much as seven meters if the whole sheet came off. (405)

Here Robinson encapsulates the blending of the complex geologic, oceanic and atmospheric cycles impending upon complex interactions as well. The general rise of temperature, according to Robinson is a brutal effect on global climate. He also prophecies about the "two-year failure of the monsoon," "China's drought" and the "desertification in the Sahel" at an ever-increasing rate, South America's worst floods resulting in "wild weather everywhere" conveys Robinson (406). Robinson also records the "expensive insurance" that is distributed through various "financial systems of the world" (406) to face the "measure of catastrophe, death, suffering, fear, insecurity, and sheer massive inconvenience" (407). Robinson's plea is for a thorough plan and implementation of climate change mitigation to reduce or prevent the emission of greenhouse gases. The author effectively highlights the importance of scientific research, and policy decisions in addressing the challenges posed by a changing climate. Robinson's novels represent a thoughtful proclamation of the latent impressions of climate change and accentuate the need for collective accomplishment to mitigate its effects. His works are poignant over the complex exchanges that happen between ecological systems, human societies and political structures. By depicting possible futures determined by environmental crises, Robinson inspires readers to echo the urgency of pondering climate change in the present.

## CONFLICT OF INTERESTS

None.

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