

Exploring 'Solastalgia' and 'Speciestalgia' in Kingsolver's *Flight Behavior*^(*)

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Abstract

This study argues that the impact of anthropogenic climate change goes beyond the materialistic damages manifested on the political and economic levels. Climate fiction or 'cli-fi' reconfigures speculative, critical and innovative perception of the challenges of climate change. I use Barbara Kingsolver's *Flight Behavior* (2012) as a case study. As an overtly climate narrative, it dramatizes (humanizes) the effect of climate change on personal experience and private lives. Ecological hazards strike homeland and are manifested in non-human species yet the effect expands influencing people's outlook and decisions and changing their lives in multiple ways, both in favorable and adverse directions. The theoretical framework of this study is grounded in the concepts of 'climate fiction or cli-fi,' 'solastalgia,' 'speciestalgia' and formulated by Dan Bloom and Glenn Albrecht in this respect. Their postulations highlight the psychological aspect and emotional dimensions of climatic cataclysm.

Keywords: climate fiction, solastalgia, speciestalgia, climate change, global warming, flight behavior, denial, consciousness, science, knowledge

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الحنين إلى البيئة: قراءة تحليلية لرواية باربرا كينجسولفر "هجرة الفراشات"

الملخص:

يتناول هذا البحث دراسةً تحليلية لرواية باربرا كينجسولفر "هجرة الفراشات" (٢٠١٢) في ضوء مفهوم روايات "الخيال المناخي"، ويعيد هذا الجنس الأدبي تشكيل الإدراك ورفع الوعي حيال التحديات والآثار الكارثية الناجمة عن تغير المناخ والاحتباس الحراري، فلم تعد بؤرة التركيز في تأويل التغيرات المناخية قاصرة على الاضرار المادية التي تتجلى على الصعيدين السياسي والاقتصادي، كما لم يعد التفسير العلمي هو السبيل الوحيد لفهم تلك التغيرات، ويتضح ذلك في رواية "هجرة الفراشات" والتي توضح تأثير المناخ والاختلال البيئي درامياً على التجربة الذاتية الإنسانية للشخصيات، ويمتد التأثير ليطل الجوانب النفسية والقرارات المصيرية للشخصيات وتغيير مفاهيمهم في أوجه شتى ازاء تغير المناخ والمنظومة البيئية وما تحويه من كائنات، ويتأصل الإطار النظري لهذه الدراسة ويضرب بجذوره عميقاً في مفاهيم ما يعرف برواية "الخيال المناخي"، والحنين إلى البيئة (سولاستالجيا) والتوق الي التنوع الحيوي (سبيشستالجيا) وفق نظريات جلين ألبرخت و دان بلوم في هذا الخصوص، والذان قد ركزا في فرضياتهما على مدى تأثر الجانب النفسي والأبعاد الوجدانية بالتغير المناخي.

الكلمات المفتاحية: روايات "الخيال المناخي"، سولاستالجيا، سبيشستالجيا، تغير المناخ، الاحتباس الحراري، هجرة الفراشات، الإنكار، الوعي، العلم، المعرفة.

Introduction

‘Global Warming’ is one of the most controversial issues in the twenty-first century.¹ Its detrimental impact is manifested in worldwide ecological disruptions across planetary sectors involving equally, both humans and non-humans. The ultimate goal of this study is to investigate an alternative perception of climatic cataclysm in Barbara Kingsolver's *Flight Behavior* (2012) involving the psychological aspects and the emotional dimensions.² The narrative is described by Kathleen Byrne as dealing “specifically, determinedly and overtly with climate change.” It is an exemplary text of ‘cli-fi’ narrative; a term coined by the American journalist Dan Bloom in 2007 short for ‘climate fiction.’³ This sub-genre of fiction reconfigures global anthropogenic climate change as a “cultural force” (Horn 63).⁴ It changes the understanding of and the indifferent attitudes towards climate change. Additionally, it is a mode of

rethinking imaginatively the dangers that threaten all species and emphasizes a relationship in which the environment, humans and non-humans are entangled.

Flight Behavior traces present day impact of climate change on the eastern Appalachian Feathertown community of rural Tennessee. It is narrated from the perspective of third person narrator. The central character is Dellarobia Turnbow, a young restless farm woman with two children Preston and Cordelia. She is disillusioned with her unfulfilling marriage and her passive husband, Cub, whose decisions are governed by his parents, Bear and Hester. Dellarobia decides to have a secret tryst with a telephone man. During one of her hikes, she describes what seemed to her like fire blazing in the valley. It turns out to be a huge swarming of monarch butterflies that, due to global climate change, are migrating from the hills of Mexico. The phenomenon confounds the local residents of Feathertown and elicits diverse responses. As for Dellarobia, she is overwhelmed with feelings of distress and displacement. Her in-laws, Bear and Hester, as well as Pastor Bobby Ogle and Tina Ultner the TV reporter fail to grasp the factual basis of the remarkable spectacle. Partly ignorant about and partly apathetic to the perils of climate change, their interpretations are grounded in religious, economic and materialistic notions. The arrival of Ovid Byron, an American ecology expert, marks a turning point in Dellarobia’s quest for the truth. She reassesses her perception of her marital life and the ecological manifestations, and in her pursuit of the physical basis of climate change, she undergoes an inner journey from ignorance to knowledge.

Within the scope of climate fiction, the environmental issues are not interpreted as mere disruptions of chemical atmospheric processes nor regarded in terms of the political, economic and scientific debates. Climate issues move out of the political plane and the materialistic realm and become central to the domain of the personal. Ellen Briana Szabo argues that this genre uses “knowledge

of science and climate to imagine and create apocalyptic or dystopian worlds with the goal of changing how humans think about, inhabit and interact with our planet;” (14-15). Climate fiction provides an unconventional and groundbreaking alternative focusing on the ethical, psychological, cultural and aesthetic ramifications underlying environmental cataclysms. On his part, Adam Trexler values climate fiction for its potential to combine complex systems in order to demonstrate how “national pride, bioengineering, aesthetics, familial love, social resistance, species loss, job loss, local food and flooding might combine to create a way of life in the future” (220). On another level, narrative of climate change has a message to convey; it aims at stimulating real action and shaping new perceptions of and solutions to the menacing impact of climatic crises. “Cli-fi is fiction with a mission,” (1) as declared by Szabo. In her elaboration on its primary objectives, Manjana Milkoreit argues that cli-fi heightens human sensibilities of the meaning of climate change for the contemporary society in order to engender “greater public engagement” (177). Similarly, Sarah Holding indicates that climate fiction “reconnects young readers with their environment, helping them to value it more.”

In 2003 and 2018, Glenn Albrecht and Dan Bloom came up with the neologisms of ‘solastalgia’ and ‘speciestalgia’ prompting an in-depth analysis of psychological sensational reaction of desolation and distress originating in human activity, contamination and wreckage of homelands as well as the extinction of non-human species. As a portmanteau concept, ‘solastalgia’ adds to physical longing for a territory of the heart’s desire. It is a psychological dislocation because one’s home environment is under continuous onslaught. While ‘solace’ embedded in ‘solastalgia’ connotes “the provision of comfort or consolation in the face of distressing events” (Albrecht et al. 45), Albrecht, in his deliberations associating ‘solastalgia’ to health and identity points out that desolation points to “abandonment and loneliness... [and] algia means pain, suffering”

(45). There is homesickness; it is nostalgia for one’s formerly healthy ecological home. Clive Thompson posits, “In a world that’s quickly heating up and drying up, you can’t go home again — even if you never leave” (70). ‘Speciestalgia’ on another level, encompasses a blend of ‘species’ and ‘nostalgia’ highlighting the yearning for restoring the endangered and nearly lost bio-diversity and balance due to anthropogenic climate change.

Despite the dismal prospects of overcoming the outcomes of climate change, *Flight Behavior* offers ‘hope against hope’ to find a way out through delineating a paradigm of situations located in the experiences that constitute ordinary people’s existence. Kingsolver, armed with the skills of a creative writer and the expertise of a biologist, probes into the eruption of defeatist sensations of grief and despondency that unruly environmental vicissitudes trigger, and explores ways of grappling with their impact on personal lives. *Flight Behavior* presents postulations of ‘solastalgia’ and ‘speciestalgia’ at the center of climate fiction. They are adapted to this purpose. Further theoretical deliberations provide points of departure to analyze inquiries that the narrative elicits.

Ecological conditions and meteorological dynamics manifested in beyond control natural disasters such as droughts, tornadoes, strip mining, fire and flood are not the only factors that bring about states of ‘solastalgia’ and ‘speciestalgia.’ In his work on “Solastalgia,” Albrecht adds other artificial and human-induced factors caused by perilous practices such as “war, terrorism, land clearing ... mining, rapid institutional change and the gratification of older parts of cities” (35). Thus, in her study of climate change and challenges, Milkoreit contends that ‘solastalgia’ and ‘speciestalgia’ are not phenomenon “suffered by people distant in place or time” (187). In any case, whether prompted by natural or artificial environmental challenges, they are not technical problems or mysteries for experts, energy companies and policymakers to

decipher.

In Hal Gage's view, "reintegrate[ing] locally and globally with our home environment, the whole earth, and work[ing] creatively" (57) is necessary to restore the health of the natural environment and deal with the afflictions of its turbulence. According to Milkoreit, "Unprecedented problem like climate change requires ... unprecedented solutions" and in this regard he indicates that "imagination needs to rise to this challenge of novelty" (177). The utilization of imagination and artistic tools may prompt unique and effective strategies that go beyond realistic spaces in addressing natural and artificial cataclysmic challenges. For the Indian novelist Amitav Ghosh, it is climate fiction that can resist and overcome "the insuperable obstacles" (73) manifested in environmental changes. In this way, climate fiction emerges as a springboard for comprehending the imminent perils of anthropogenic 'Global Warming' and incumbent environmental change but more significantly, it introduces promising responses and solutions to environmental threats.

Narratives of climate change tend to dramatize climate change in a way that renders it alive and perceptible and not a mere speculative issue. They grapple with apathetic people who live in a bubble denying and ignoring the reality of climate change impacts. Such an attitude results in their unawareness of their moral imperative towards their environment or their suspicion of and inability to penetrate into the insuperable scientific premises. It prevents them from envisioning their failure to address the catastrophic impacts of climate change. Science serves as a superior form of knowledge but, as Anupama S. Pathak demonstrates, climate fiction conveys knowledge through "story-telling and image-making" (73). It renders dry and rigid scientific facts about climate change accessible to the reading public, thus enhancing knowledge of their kingship with their environment, and re-envisioning their future critically and differently.

In his attempt to consolidate deliberations on the significance

of climate fiction, Trexler maintains that sources other than fiction, in this field, lack the capacity to question the “emotional, aesthetic, and living experience of the Anthropocene” (6). In fact, climate fiction has privileged capacities of storytelling making it, as Astrid Bracke argues, a vital “space in which actual and imagined circumstances are played out” (7) and substantial anthropogenic global perils are articulated.

For Margaret Atwood, humans need such climate stories, albeit, they are dark, because “a darkness with voices in it is better than a silent void” (154). Despite the apparent bleak vision, climate stories sustain hope and inspiration. They show that humans still have the possibility of managing and steering their future. In this manner, climate change is humanized and climate fiction produces an emotional, spiritual, intellectual impact; a topic that is absent from official and political deliberations.

Cultural Apathy and Ecological Phenomena

Flight Behavior is set in the eastern Appalachian Feathertown community of rural Tennessee; a region to which the monarch butterflies migrate from the hills of Mexico. The design on the dustcover is highly functional; it features an image of butterflies as small carrot leaves swarming around bare treetops. The imagery serves as an indication of the author’s preoccupation with the environmental phenomena and the ongoing change of climate. It operates more significantly as an entry point for the narrative to explore the diverse sensations elicited by unusual natural phenomenon and the disparate explanations of the Feathertown people as well as readers across the globe.

Kingsolver opens *Flight Behavior* with a vivid portrayal of the rustic landscape of Appalachia wherein natural occurrences such as mudslides, flood, droughts and weird weather are perceived by the inhabitants as normal occurrences. The scene is conveyed through the

perspective of a heterodiegetic narrator and protagonist Dellarobia Turnbow who acts as an internal focalizer (Garrard 303).⁵ Reflecting on her surroundings, Dellarobia Turnbow observes that the sky is the “same dull, stippled ceiling” (2), “black leaves clung like dark fish scales to the tooled leather halfway up her calves” (6), and “the day smelled mostly of lanolin rather than urine and mud” (20). The narrative portrays Dellarobia, the unhappy farm wife, as a fallen tree that “just seemed to have come loose from its station in life” (5) due to the heavy rainfall. A shift from ‘cloud’ rendering the milieu dark and ugly to ‘sun’ drenching the earth with daylight has been most startling. In Dellarobia’s view, the forest of the evergreen trees “looked altered and pale, the beige of dead leaves ... branches seemed to writhe” (13). Notwithstanding the oddity and eccentricity of the surrounding and the distress it induces, the general public perceives it as ‘normal’. The unexpected arrival of the monarch butterflies, “puzzling and unreal, like a sci-fi movie” (13), forming a backdrop of the entire forest glowing with millions of them elicit diametrically opposed reactions of the apathetic local community of nonscientists, cosmopolitan visitors of scientists and the advocates of humanizing scientific responses.

a. Responses of the Local Community of Nonscientists

The spectacle of the migration of butterflies incites disparate reactions in relation to climate change from the inhabitants of the Feathertown community all of which prevaricate the actual cause of the phenomenon, and present evidence of skepticism, lack of knowledge, apathy and naivety. Without a speck of doubt, they reckon, as Dellarobia observes, that “nature will organize itself around what suits them” (354). Responses denying or disputing the occurrence reveal a “failure to recognise the impact of [human] actions” on nature (Goodbody 22), and signals a prevalent condition of psychic numbing, debilitating emotions and a lack of awareness of the perils. The residents of Feathertown are incapable of handling

and “cop[ing] with bad news” (257); they tend to “forget it ... say[ing] it’s not proven” (320) as stated by the narrator, and persist in denying “any subject that is informed by science” (Kingsolver, “Barbara Kingsolver”). This ignorance of environmental threats is clear in their acquiescence to the pointless logic of “allegiance to the teacher” (261). It becomes unmistakable in Dellarobia’s question to Cub, her husband, “Why would we believe Johnny Midgeon about something scientific, and not the scientists? (261) to which he retorts, “Johnny Midgeon gives the weather report” (261). Dellarobia cogitates that “nobody was asking why the butterflies were here; the big news was just that they were” (212). Indeed, ignorance of and disbelief in climatic changes are deeply seated in distrust in science.

For the different communities in Feathertown, interpretations of the phenomenon rest on religious, economic, and lucrative grounds. Religious Fundamentalists such as Pastor Bobby Ogle conceive the phenomenon as a manifestation of the “Lord’s business” or “God’s plan” (261). Thereupon, losses and catastrophes are constantly rationalized as “some form of redemption” (302) for the sins they have committed. Dellarobia’s vision of the butterflies endorses the same religious stance. She perceives the phenomenon in terms of miraculous signs and wonders of the Lord’s grace comparing it to a flaming forest or “a lake of fire” (16). The narrator explains that the sight is prodigious yet shocking that it looks as if the forest blazes with internal orange flame and sparks that “spiral upwards in swirls like funnel clouds” (14) to fill the valley and the lake, and hovers over the mountains and treetops. The spectacle stirs peculiar sensations of enthrallment entwined with fear. Morose and dispirited, Dellarobia is entirely wrenched from the beautiful topography of Appalachia, a place with which she is familiar and well known to her in all its details. Commenting on the sensations incited by the occurrence, the narrator states, “A certain feeling comes from throwing your good life away, and it is one part rapture. Or so it seemed for now, to a woman

with flame-colored hair who marched uphill to meet her demise” (1). Rapture and demise assume highly moralistic implications. For Greg Garrard, they mirror the “church-dominated mental and physical landscape of the storyworld” (303).

The intervention of nature produces a ‘rupture’ in Dellarobia more powerful than the thrill which the affair she has with the telephone man creates in her. The heterodiegetic narrator maintains that it seems as if “unearthly beauty [has] appeared to her, a vision of glory to stop her in the road. For her alone these orange boughs lifted, these long shadows became a brightness rising... A valley of lights, an ethereal wind” (15-16). It is as if the coincidental happening of such environmental occurrences signify only one thing: saving Dellarobia. It emerges as a revelation that awakens her to better “see straight through to the back of herself” (15) and to realize that it is not “too late to undo this mess” (16). The incident, to her, is God’s intervention that overturns her flight from her claustrophobic rural penury and diurnal chores as a wife of an apathetic husband and a mother of two small children and cast her in an adulterous tryst with Jimmy, the telephone man.

Despite the failure of Dellarobia’s escape, the incident, for her, acquires multilayered dimensions and becomes purposeful in many respects. It indicates an exceptional time in which she becomes disconnected from an environment lacking in imagination, foresight and intellectual insight and she “walk[s] out of the picture” (2) of “luckless sheep” and bad deals of life; standing down in the mud, wearing heavy wool in the sultry summer, shorn in winter and surrounded by the stiletto holes of their footprints. Moreover, there is a parallelism with the migration of the butterflies. Both Dellarobia and the butterflies are driven to escape due to the precarious and hazardous environment that threatens to put an end to their survival and deprive them of biological requirements. Kingsolver’s observation is illuminating; she conceives of her narrative as a comment on flight

behavior; “all the ways that all of us are running away from scary truths” and she adds, “every cell in our body wants to run away from the big scary thing” (“Barbara Kingsolver”).

Deliberations on the natural phenomenon of the butterflies’ exodus move in different directions. Dellarobia’s in-laws, Bear and Hester Turnbow disregard the public spiritual exegeses and invest their hopes in materialistic profit manifested in logging the mountain for cash to pay off impending debts. Dellarobia continually warns them of the aftermaths of logging that might turn Appalachian farm into “a war zone”, “a trash pile” and “mud and splinters” (54) especially when rainfall start and the “whole mountain is sliding into the road” (55). However, Dellarobia’s in-laws undervalue all possibilities of the aftermath as well as the significance of the forests. To them, they are mere green trees not “any gold mines” (45) to be preserved. A voracious appetite prods them to exterminate the butterflies believing that their arrival impedes and halts their logging. Bear muses, “We’re going to spray these things and go ahead. I’ve got some DDD saved back in the basement” (55). Ignorant of the essential kingship with nature, the Turnbows are blinded to the consequences of their exploitative maneuvers.

Espousing a similar philosophy of economic exploitation, tourists consider the spectacle a financially lucrative opportunity. They come from all over the world for sightseeing in the hope of finding a way to exploit it to their benefit. Thus, local residents of Feathertown contend that God supplied them with the butterflies as a financial reward to establish touristic projects along the lines of “Disneyland “or “theme park” (255). Significantly, US media, TV crews and reporters such as Tina Ultner fail to notice the factual basis of a disordered system behind such exotic turbulence that jeopardizes the butterflies’ species. The media rewrites it as an exhilarating story of entertainment under the caption “Battle over Butterflies.” Such incomprehension betrays a prevalent ignorance of the perilous

aftermath of climate change and in turn an improper explanation of what induced the butterflies' odd migratory behavior. For Tina, the beauty of the spectacle underlined in the story is basically "very superficial" and "off message" (365) in terms of news coverage. Nevertheless, she conceives her account as a "top story, with nightly updates" (211) that has been conducive to publicizing and capitalizing their channel and increasing advertising profits, all at the expense of journalistic truth. In her critical comment on the narrative, Antonia Mehnert, a scholar in environmental humanities, comments that the incident is a working example of "the corruptibility of the news industry and its incompetence in representing and reporting on something" (76). Clearly, the residents of Feathertown are unaware of the existential and psychological crisis of climate change that is by its nature, "slow moving and intensely place based" (Klein 158). Thus, they reveal no sign of distress or remorse over the loss of the balance of the ecosystem or the imminent disaster of mass extinction of the butterflies. In fact, the narrative accentuates the necessity of engendering a kind of communion with as well as local and global knowledge of environmental change and the necessity of passing this knowledge from generation to the next.

b. Responses of Cosmopolitan Visitors (Scientists)

The reaction of visitors to the phenomenon of the migratory butterflies is in stark opposition with that of the local community. They display a deep commitment to and awareness of the threats humans and non-humans might face if they do not exert an effort to save the planet and the species from extinction. Their debates and contentions divulge a determination to make them as well as the local mountain of Dellarobia visible to the world. Their encounter with Dellarobia enhances her growing consciousness of the threats of anthropic changes and widens the spectrum of her knowledge about scientific causes for the migration of butterflies across various countries. The narrator observes that it seems as if the world "is

beating a path to [Dellarobia’s] door” (110).

Among the cosmopolitan visitors are the Californian teenagers from (the real) 350.org, and the group of knitters (‘WOMYN’9300) who have come from England to implement an online campaign against global warming and logging. Unlike the uncaring mindset of the local inhabitants about the butterflies’ migration, the visitors are fully vigilant about the threats of global warming. The group of knitters, with their online campaign, “knitting the earth together” (339), announce their intention to eternalize the butterflies with their needles out of recycled orange wool sweaters sent by people from around the world and then they would hang them all over the trees as a memorial for them. Mehnert remarks that “the knitted butterflies tangibly and ideologically represent the community effort for action against climate change” (66). In fact, the online campaign itself shows how Kingsolver utilizes technologies of the digital age publicized in social media and smartphones not only to compress time and space but also to create global solidarity and consensus “on the basis of shared risk exposure” (67) as Mehnert remarks. Another group of visitors is the team of scientists led by Ovid Byron, a Harvard educated black American ecology and entomology expert. Through this team, Kingsolver avers that only scientists can increase environmental awareness and reconfigure the impartial perception towards the butterflies as a complex portent brought on by climate change.

Indeed, the most significant cosmopolitan visit to Feathertown is that of the Mexican family of Josefina, a friend of Dellarobia’s son. They help Dellarobia to overcome her susceptibility and reformulate her perception. They make it obvious to her that anthropogenic climate change can bring about distress and loss of comfort and solace. This is the inevitable consequence of the ruin of the habitat of the Mexican people as well as the monarch butterflies in Michoacan. The narrator argues that Jofina’s family has lost “their world,

including mountain under their feet and the butterflies of the air” (103). Ironically, they were forced to ‘migrate’ from their own home to that of Dellarobia where they find themselves reconnected with the monarchs. Josefina informs Dellarobia that the monarch butterflies exemplify the souls of dead children in Mexican folk culture, which in turn soothes Dellarobia’s painful memory of the loss of her first child. In this sense, what seems a local phenomenon turns out to be transnational and global, not only by dislocation of humans and insects, but also, as Mehnert argues, by “circulation of ideas and cultural meanings” (65). In the episode that introduces visitors from other countries, the narrative points out that the beguiling migratory butterflies’ phenomenon is a cross-cultural crisis.

Personalization/ Humanization of Environmental Portents

Flight Behavior draws upon a disruption of what Stuart Bryce Capstick and Nicholas Frank Pidgeon call “epistemic skepticism;” namely, the doubts and uncertainty that impede human acceptance of climate change as a physical and scientific phenomenon. To reconfigure human conceptualization of the imminent threats of climate variability, it becomes necessary to make sense of the crisis of climate issues by humanizing it. Humanization can be materialized through getting into people’s heads via their hearts by inviting them to perceive climate change in personal ways. As such, the narrative addresses intellect and emotion portraying the globe as closely related to daily life rather than considering it as distant, remote, abstract and unapproachable “science and cold equations” (Adams xii).

The nonscientific outlook, identified by Dellarobia as “looking without seeing,” (52) has proven to be a mindless denial of anthropogenic climate change rendering people unconscious of the looming loss of both home and species. On the other hand, scientific responses to the perils of climate change are presented in the form of rigid data that overwhelm people with a deluge of fear, despair and

distress. Since nonscientific or scientific responses fail to secure an accurate perception and a cure for planetary environmental threats that humans and non-humans encounter, Kingsolver creates what she calls a ‘Kinship Systems’ (330) that merges disparate approaches maintained in the emotional response of the nonscientists and the intellectual potentialities of scientists. In so doing, she creates a milieu of effective communication wherein boundaries are blurred between divides of dichotomous worlds of "rural and urban, progressive and conservative" (Kingsolver "Climate Change"), and the realms of "scholars and scientists, and ...low-income church-goers" (as Siobhan puts it qtd. in Garrard 121).

In *Flight Behavior*, the process of reconceptualization of climate change is stimulated by the arrival of the monarch butterflies and climaxes in the juxtaposition of Ovid and Dellarobia. The latter becomes a hired member of Ovid’s team which coincides with the occurrence of the butterflies’ migration. From the perspective of lepidopterists, Ovid and his team begin by adopting a rigid cognitive scientific standpoint of scary tactics in their investigation of the truth about the butterflies’ annual migration between Mexico and Canada and their unexpected settlement in Tennessee. Their inferences are not arbitrarily but reached through a premeditated process of measurements and experiments; they conclude that the phenomenon is a scary disaster. They come forward with the explanation that such an odd Behavior has its origin in the intricacy and sophistication of the instincts of the butterfly that orient them towards where they ought to go. Given a "complicated system" (145) of elemental forces, the movement of the butterflies is disrupted by "a bizarre alteration" (228) of global weather. It dislodges them from their homeland and sets them in motion journeying from one place to another.

In Ovid’s interpretation, global warming causes a mudslide that necessitates the migration, the relocation and the crisscrossing of the butterflies between Mexico and the United States. Conveying an

apocalyptic vision and an impending cataclysm, Ovid foreshadows an inevitable spectacular catastrophe. Ovid observes that the situation is aggravated and the mass extinction of the butterflies appears imminent in Appalachia and Mexico by “unrelenting rains” (49) which bring about an uprooting of trees as well as freezing temperatures. Ovid irately scares Dellarobia and declares that “a continental ecosystem [is] breaking down” (228) that “the damn globe is catching fire, and the islands are drowning” (231). Despite such alarming perils, humans are still in a state of denial and disregard such changes.

Ovid, overcome by ‘speciestalgia’ over the expectancy of mass extinction of the butterflies and distress over public imperceptibility of the risks and persistence on seeing the changes normal, he utters grim portentous words saying that just “few degrees of change” (279) might obliterate humankind. This is because living systems are so hypersensitive to very small changes. Ovid establishes credibility of an assumption by resorting to UN report on global warming. He informs Dellarobia that it shows an inevitable “four-degree rise in the world's average temperature” (279) as a result of heat accumulation and burning carbon. In Ovid's view, such a process would play out for a very long time and might bring about some other inevitable phenomena such as loss of polar ice. He adds that white ice naturally reflects the sun-heat back to space yet if ice melts, it brings about a broad range of miscellaneous catastrophic and unavoidable processes as “the dark land and water underneath hold on to the heat. The frozen ground melts. And that releases more carbon into the air” (279). Definitely, Ovid's presentation of the environmental risks discloses his methodological erudition of entomology and the hazardous effects on both earth and its human and non-human inhabitants. Possibilities of such perils as expressed by Ovid provoke Dellarobia's discouraging responses and sensations of ‘solastalgia’ and ‘speciestalgia.’ In her in-depth study of Kingsolver's narrative, Linda Wagner -Martin comments that Ovid's rigid scientific explanation shows that “he does

not know how else to express his knowledge” (14).

Unlike Ovid whose thinking is driven by scientific protocols, Dellarobia is moved by an environmental conscience towards the “stiff, brittle bodies” of the dead butterflies. In view of that, she urges Ovid to think of a way of shipping them to a warmer place. She daringly reprimands him not only for his despairing thoughts in relation to the futility of fighting for his fellow creatures, but also for his thwarted approach which brings about a detachment from the common people. Dellarobia surmises, “Maybe your medicine's too bitter ... Maybe you're writing us off, thinking we won't get it” (321). From Dellarobia's perspective, Ovid's main job is not merely to proclaim warning messages about climate change, but also to convey such messages clearly and effectively through a language that is accessible and comprehensible to the lay. Thus, Dellarobia encourages Ovid to connect with the local TV reporter Tina Ultner and speak out about the climatic threats instead of ending the interview because of Tina's denial of global warming.

Indeed, Ovid realizes that Tina's problem is closely similar to that of the general public. It has to do with incompetence in reporting on something intangible. However, Ovid maintains that the issue is tangible and real. He explains that people “don't believe in things [they] can't see” (280). Misconception as Garrard remarks is due to the fact that people are “not ... inducted into the demanding rhetorical protocols of science” (306). To substantiate his argument, Ovid compares the rise of the world's temperature to children's fever which cannot be called normal if elevated by two degrees. Additionally, early in the narrative, he explains to Dellarobia that a photo of a child cannot attest to the actuality of the growth process, “but several of them show change over time” (280). Evidently, Ovid uses the same strategy of pictographic image, along with scary tactics, not only to materialize the intangible phenomenon but also to help Dellarobia see and acknowledge it. As a consequence, he deploys an evocative

illustrative image underscoring that the controversy of the scientists is not over the reliability or existence of climate change, but it is mainly over “how to express [their] shock” (367) in relation to its cataclysmic foreseeable aftermaths. Ovid argues,

The Arctic is genuinely collapsing. Scientists used to call these things the canary in the mine. What they say now is, *the canary is dead*. We are at the top of Niagara Falls... in a canoe. There is an image for your viewers. We got here by drifting, but we cannot turn around for a lazy paddle back ... We have arrived at the point of an audible roar. (367)

In Ovid's view, it is ignorance and consistent denial of climate change that bring human beings to such tipping point of no return where more missteps might ruin everything. Here, Ovid intends to reconfigure the cultural consciousness of climate crisis: he shifts the public reconceptualization of climate crisis from expectancy of a gradual cumulative change to an undoubtedly rapid displacement of humans and non-humans. To make the image much more discernible, Ovid equates such human environmental predicament to being drifted or perched at the top of Niagara Falls "at the point of an audible roar" (367) where there is no way to paddle back upstream. Such a comparison attests to the fact that climate is undeniably changing for the worse not for the better and there is an impossibility of restoring what has been lost. Respectively, it is not eligible to “debate the existence of the falls" (367) overlooking the disastrous and disturbing situation engendered by human misconception and denial of climate change. He further demonstrates that it is an illusion for Tina and climate change deniers to think that they can keep out of such a disaster believing that “this will only happen to Africa or Asia ... Some place that is not [their] assignment" (368).

Perceptibly, the uncaring responses towards climate change on the part of the local community in general and the television newscasters in particular, disheartens Ovid and stirs feelings of

‘solastalgia.’ He is deeply affected and drives the narrator to remark that “the one thing most beloved to him was dying. Not a death in the family...but maybe as serious as that...Now began the steps of grief. It would pass through this world...while most people paid no attention” (229). What augments Ovid’s grief is not only persistence on rationalizing the denial in unscientific and sentimental terms but also the refusal of people to “face up to the bad outcome” (196) as Dellarobia tells Dovey her friend.

In his endeavors to address his personal grief vis a vis such desolate condition and to reform public perception of environmental changes, Ovid embarks on opening new doors to advocate the assumptions of methodological impartiality and scientific conventions. He regards Dellarobia as exemplary for the initiative and entirely appropriate for the process. This is because she is talented and exhibits an alacrity to be enlightened and learnt about climate change and global warming. This was obvious in her words to Ovid as she says “I’m not saying I *don’t* believe you, I’m saying I *can’t*” (283). These words epitomize a tendency to listen and understand. In view of that, he is determined to orient her to set out on the right path for understanding the ethics of science. He plainly tells her, “That is a concern of conscience ... Not of biology. Science doesn't tell us what we should do. It only tells us what is” (320). He further demonstrates that it is futile to save a world that has lost its soul due to its complete indifference to anthropocentric threats that endanger the biodiversity of the ecosystem. Among such threats are fixity of the proportion of carbon and nitrogen, the diminishing coral reefs that imperil coastlines, and the habitats and shelters of many marine species and the mass extinction of the butterflies. Ironically, human efforts that seem apathetic to such fatal aftermaths, he says, “amount basically to saving a place for ourselves to park” (318). To reinforce her cognitive knowledge about the science of ecology, Ovid maintains that it is an experimental and theoretical science that studies “biological

communities. How populations interact. It does not mean recycling aluminum cans ... if we try to make our science relevant to outsiders, right away they look for a picket sign” (324).

Eventually, debates over the veracity of anthropogenic global warming reveal that Ovid is trapped in a distressing double-bind predicament. On the one hand, he is caught in a state of ‘speciestalgia’ in which he undergoes feelings of desolation and distress associated with the endangered species and the impending species loss; butterflies and many other small and large species are impacted by environmental change. Longing for a restoration of ecological species diversity, Ovid feels ethically committed to save the butterflies. Nevertheless, Ovid’s constrained scientific and impartial methodology clashes with such terms as ethics and empathy. He, as Garrard observes, disavows “emotional or political involvement in [the butterflies’] fate” (306). He professes that he is not a zookeeper to save them; he is a scientist whose focal mission is to read and scrutinize “what [the butterflies] are writing on our wall” (320).

Ovid further asserts that the current environment is no longer appropriate for the survival of the butterflies and thus they have to go as he states, “into a whole new earth. Different from the one that has always supported them. In the manner to which we have all grown accustomed” (325). Ovid's conjectures are definitely insightful for two reasons. Firstly, they mirror the hovering global dislocation of both humans and no-humans under the menacing impacts of climate change. Secondly, they reveal a distressing perception of science and scientists. “For scientists, reality is not optional” (283) so they just tell about what is rather than what we should do. Furthermore, scientists are not committed to knowing everything. Thus, it seems impossible to expect an end for scientific debates over climate change. The rationale is that science is not like a foot race that has a finish line; thus “there are always more questions" and "as a process [it] is never

complete" (351).

As a matter of fact, in constructing a working relationship between Dellarobia and Ovid, Kingsolver tends to explore how each is trying to make sense and use of the other's view in order to grasp the relationship between scientific and cultural practices. In so doing, she frees Ovid and Dellarobia from perceiving natural portents as they used to; neither from a rigid scientist perspective nor through a naïve, gullible and insensible vision of “seeing without seeing” (381). Eventually, Ovid's scientific worldview is reconciled with Dellarobia's empathy towards home and species. Such reconciliation provides Dellarobia with solace and stimulates metanarrative ponderings on the part of the reader. At this phase, the narrator explains that new insights erupt in Dellarobia about the “seasonality changes from climatic warming” (147) rather than “cry[ing] over insects” (146). She emerges as “an individual awakening to environmental risk”(48) as Axel Goodbody states. She is no longer looking back or wary of the physical and scientific basis of climate change. She realizes that the only alternative left for the survival of humans, and saving what they and their environment still have, is to look forward to having a fresh start and see “themselves-in their humanness-in future, imagined conditions” (Milkoreit 172). Considered in this light, there is a possibility to transcend the physical and psychological desolation embodied in the concepts of ‘solastalgia’ and ‘speciestalgia’. In fact, Dellarobia's personal intellectual growth and maturity situates the narrative in the Bildungsroman context.

Grappling with the Crisis

Ovid's scientific debates and their revelation of the scary global prospects along with Dellarobia's cosmopolitan encounters represent a doorway for which a “blind person [is] grappling” (383). The encounters not only decipher the insidious imperceptible secrets of nature and sustain her realization about climate change as a real

crisis but also about the deceitful maneuvers of the powerful officials who have misled the common people and undervalued the crisis. As such, they redirect Dellarobia to overcoming ‘solastalgia’ and ‘speciestalgia.’ Put more precisely, climate chaos has profoundly changed Dellarobia’s sense of place and stimulates feelings of unease, distress and dislocation. The encounters help her embrace a sensible and ethical response towards the physical basis of ecosystem and biodiversity. Such a new response alleviates her distress and provides Dellarobia with comfort, solace and hope of fulfilling place attachment through finding an organic position in what Albrecht Albrecht depicts as “an earthly ‘home’ in the connection with living [species] and life processes on this planet” (“Solastalgia: A New Psychoterratic Condition”). Significantly, such an in-depth insight into environmental changes affects Dellarobia’s personal life and engenders a self-conscious break with her myopic existence on familial, aesthetic and intellectual levels.

On the familial level, Dellarobia no longer upholds the role of the unworldly, underprovided and marginalized farmer who abides by a blind commitment to ‘the teacher.’ For the first time, she embraces a defiant approach against her community and family as well. The narrator explains that Dellarobia’s role in everything pertaining to the ‘miracle’ of butterflies occupies the center of the debates in Feathertown. This role is evident in her “charging money for the tours, letting the professor come in ... wildly expanding contentions at church” (128). In addition, Dellarobia unwaveringly and openly fights against her in-laws’ due to their undervaluation of the forests manifested in their exploitative logging of the mountain for the sake of quick cash.

Dellarobia realizes that the mechanism of complaining and avoiding the callous and avaricious attitude of one’s flock towards environment are not practical solutions. It is an ethical imperative to face up to the crisis and incite her flock to value environment and

place attachment. Therefore, in an effort to unveil the impact of logging on nature she argues “If we log the mountain, then the trees are gone. But the debt isn’t. Does it make sense to turn everything upside down to make one payment?” (171). For Dellarobia, the aggressive removal of forests has both psychological and physical influence. Psychologically, such a removal induces a sense of dislocation and loss of belonging to the place. Physically, it causes torrents because water finds nowhere else to go down and creates hot deserts due to the diversion of great rivers.

In light of the irreparable damages, Dellarobia muses about whether or not her husband Cub can boldly stand up against the resolve of his father to log their land. In one of the crucial moments of the narrative, she instigates him to revise his past choices in light of the present conditions; otherwise, she warns him that he will wreck his life. Dellarobia’s reliability is highlighted when she reconsiders her habit of smoking. Becoming more perceptive of its consequences, she contends that “smoking a costly pastime; [that] diverts [her] from paying attention to life around her ... [And] ... keeps her rooted in unfulfilling patterns” (17) as argued by Wagner-Martin. In a decisive tone, Dellarobia declares, “I ought to quit right now” (195). The recourse to a habit as common as smoking as an example is expedient; it urges readers to facing up to its serious outcome rather than espousing avoidance mechanism. In addition, it constitutes a wake-up call to shun an attitude of heedlessness and denial and rise up and attend to their responsibilities regarding the alarming impact of climate vicissitudes.

On the aesthetic level, Dellarobia begins a perusal of several narratives that attend to climate change such as those by Jack London and Ernest Hemingway. In Kingsolver’s view, reading such climate narratives helps people understand the intricate issues of climate change because they can be retained simply and resonate emotionally more than dry scientific data and graphics. In fact, such narratives are

of great avail and didactic value for Dellarobia. Through reading, she realizes that in all the possible conflicts of man against nature, man pretends “confidence swaggering into the storm ... [Yet] a slim education [has] taught her [that] Man loses” (245). In this vein, human survival is contingent on the real desire to save and preserve the earth and its species. Dellarobia thus clings to questions she has posed earlier, namely; “Should we not read books ... or listen to anybody outside this county? Where's that going to leave us?” (257). This quote reveals how she emerges ethically and emotionally committed to foster cognitive knowledge to institute a real perception of the environmental phenomena.

Dellarobia's break with her myopic existence on the intellectual level is manifested in her endeavor to deepen her ecological understanding through recalling on daily basis Ovid's three theories that explain the journey of the butterflies and their settlement at the landscape of the Appalachia. In Ovid's view, this is due to the excessive use of “herbicides” (248) that led to the loss of the milkweed plant which is the butterflies' primary larval food. Moreover, the infection of the butterflies with parasites prevents them from flying very far. The dearth of “nectar sources” (349-350) forces the butterflies to make their journey in winter and spring. Significantly, in her reflections on the true scientific inducements of the butterflies' exodus, Dellarobia emerges as a keen observant of the actuality of ecological diversity.

Meditation on the butterflies' cyclic migratory journey from appearance at the Appalachia to disappearance and then reappearance becomes more discernable in Dellarobia's sensible inference on the association of the fluctuating temperatures and “weird weather” with the phenomenon. Her topographical speculations extend to scrutinizing the natural swings of the seasonal cycle between winter and summer. Mulling over the fields from above in her home in winter, she recollects the clarity of the topography of the farm, the

steep, the mountaintops and the drainage of the valley. Dellarobia regards summer, contrary to winter, as the “season of denial” (257). The main reason is that the dense green leaves in summer obfuscate clear landscape of the farm to the extent that “a person could not see to the end of anything” (257).

The introduction of the flood scene with the closure of the narrative divulges more about Dellarobia's intellectual awakening or growing sense of seeing the planet. Figuratively, it is one of the natural factors that induces sensations of 'solastalgia' and 'speciestalgia.' Yet, it also exemplifies a purgative process. It washes away not only the soil but also all memories of her home's geography and makes her house “no longer visible” (431) as observed by the narrator. Such a house serves as Dellarobia's personal prison in which she has been entrapped since she was seventeen; thus, she has actually decided to flee and change the course of her story life to ground her future. In a literal sense, the flood symptomizes a warning message of the disaster towards which Dellarobia's community as well as the world is tipping if humans keep undervaluing or denying climate cataclysmic effects. In a highly dramatic portrayal, instead of being set in remote countries, the flood takes place in Dellarobia's very farm where she unquestionably appears alone on a spongy drowned ground with numb feet sinking deeper. She squats against the flood as it wipes out everything in its path and impinges on the natural surroundings. The narrator beholds the scene painstakingly stating that “the whole mountain of snow was melting in a torrent. Every channel gouged in this slope by a long wet winter was now filled to overflowing ... the current pulled in a way she *understood to be dangerous. This is where she lived*” (429; emphasis added). Recognizing the visible and obvious intimidating impacts of the flood underscores what Dellarobia learns and experiences about the aberrant weather which will enable her to survive the flood.

Flight Behavior fuses the natural world with the human

creating a correspondence between Dellarobia and the butterflies being fragile creatures that encounter uncontrollable natural forces in their pursuit of existence and survival. Dellarobia fluctuates between despair and desolation as well as hope and anticipation; the butterflies' first appearance rouses her uncertainty and desolation which, in turn, conjures feelings of 'solastalgia.' The scene is so confounding that it distracts her from her extramarital tryst and spurs feelings of displacement. No sooner does she unfold the mystery of this muddle, than the butterflies are forced to disappear. This disappearance aggravates Dellarobia's 'speciestalgia' over their potential imminent mass extinction which she conceives as an omen of the end of the world.

Under the impact of 'solastalgia' and 'speciestalgia,' Dellarobia is distressed and decides to commit suicide by jumping off a cliff. Yet, the butterflies' enthralling providential reappearance overhead restores Dellarobia's respect of life and gives her solace and hope in the survival of the earth and its inhabitants. The narrator recounts, "The vivid blur of their reflections glow[s] on the rumped surface of the water, not clearly defined as individual butterflies but as masses of pooled, streaky color, like the sheen of floating oil, only brighter, like a lava flow. That many" (433). Therefore, the pessimistic beginning of the butterflies' migration ends optimistically with the reappearance to take flight to overwinter. The butterflies reappear as the narrator comments, "Not just a few, but throngs, an airborne zootic force flying out in formation, as if to war" and "Maybe a million" (433). This closure insinuates hope and inspires a desirable expectation that it is possible to save both the earth and humanity, notwithstanding the fact that any successful breakthrough is contingent upon perseverance in "going ahead" and ceasing to live in denial (418) of climate vicissitudes.

As the narrative reaches the ending, Dellarobia's resilient resolve to go ahead is epitomized in rescuing a baby lamb, born

unreasonably early in the snow. She is determined to spare no effort in resisting defeat and grief over the loss of all what is cherished. The reason the narrator offers is that there is another story; namely, "bringing life in" (418). Salvaging the lamb is highly suggestive as it ascertains that prospects of survival with the onset of a new episode of "Not good-bye but hello" (418). The 'hello' phase unveils Dellarobia's forceful inclination to attain her "formula for living that transcend[s] fear and safety" (16). She decides to leave her husband ferreting out new socio-cultural and geographical spaces in a nearby town to pursue a college degree. In this way, she confidently removes herself from a "never-ending story" (427) of naïve and thwarting outlook towards her marital life, the species mass extinction and the ecological manifestations. Additionally, she tells her five-year old son Preston the bare truth about a potentially different future on both the familial and environmental levels. In response to his question, "What will you be? (425)," she retorts, "I'll work in a lab, like now. Except not in a barn. Its work- study, they pay you and you go to college. It's not very much, so I'll probably be something else too, like a waitress" (426). Dellarobia's words reveal her new perception of her future career. Despite the grim and weird world, Dellarobia is still optimistic about transcending her rural claustrophobic world.

With the help of Ovid, Dellarobia is able to pay her way through college and to reach a restatement of her "theory about noneductated observers' hostile Behavior in the face of obvious global change" (14) as Wagner-Martin puts it. Moreover, Ovid notes that Dellarobia becomes much more knowledgeable of "the cyclic nature of the butterflies' reproduction and existence" (14). In consequence, she becomes an active member of the society valuing science as the beginning of discovering and unraveling the enigmas of the nature. Ghosh marks the transformation as "a passage from ignorance to knowledge" (4). It is knowledge that sustains apathetic and gullible people about the risks of climate changes. It also alerts them to the

danger of being consumed by the existential and mental distressing feelings of 'solastalgia' and 'specistalgia' or to blindly adopt the prescribed route with a single story.

The narrator upholds the premise of the essentiality of "mak[ing] up a better-days-ahead story" (427); despite the present grim story of the butterflies, they incessantly migrate to other places to survive. The places of the butterflies are for the most part no better or worse than Dellarobia's. This is evident in the countless living butterflies shrouding the remaining trees that represent a protective shelter for them. Pondering on this spectacle, the narrator muses that the debris of a "wrecked generation had rested alive like a heartbeat in trees, snow-covered, charged with resistance" (433). Kingsolver argues that the resistance and resolve of the "wrecked generation" of butterflies enable them to take flight to "*a new earth*" (433; emphasis added) to survive. The narrator dramatizes the scene of 'flight' depicting it as if "fire bursts of wings reflected across water, a merging of flame and flood. Above the lake of the world, flanked by white mountains" (433). It is significant that the biblical references to 'fire' along with 'flood' which frame the beginning and closure of the narrative are emblematic of potent cleansing and destructive agents and/or givers and takers of life. Thus, they manifestly bring about drastic changes prefiguring the prospective idea of a new and auspicious world that can rise out of the ashes of the old. Such conceptualization reverberates in the butterflies' condition as well as Dellarobia's intent and possibility to find a place in the midst of catastrophic global vicissitudes wherein she can secure survival and overcome the brooding sentiments of 'solastalgia' and 'specistalgia.'

Conclusion

Within the scope of the genre of climate fiction, *Flight behavior* emerges as an exemplary narrative. The portrayal of imminent anthropogenic vicissitudes on the level of individual lives renders their detrimental effect more intimately acknowledged, understood and recognized. They are no longer speculative predictions, fictive impressions or figments of the imagination. The danger is perceptible, alive and far-reaching sprawling the entire society and cutting across different economic, ideological and political affiliations.

Flight Behavior encompasses multiple levels of aesthetics, epistemology and science with implications that invoke speculations about communal and global communications. It depicts the causes of climatic cataclysm in scientific terms, but more important it moves beyond the materialistic impacts to capture the essence of 'solastalgia' and 'speciestalgia.' Both concepts embody the psychological aspect and emotional dimension of climatic natural disasters. They form the axis of the narrative world of *Flight Behavior* informing the development of the characters and shaping the trajectory of events.

Along the lines of climate narrative, *Flight Behavior* 'humanizes' climate issues mainly through affective processes; influencing the characters as well as the readers' heads via their hearts. It addresses both intellect and emotion, portraying the globe as familiar and closely related to daily life rather than remote, abstract and unapproachable. In so doing, *Flight Behavior*, in the vein of climate narrative, orients nonchalant and apathetic people to cross into the region of responsibility for and consciousness of global anthropogenic threats instead of living in denial that aggravates their distress and grief. Eliciting human recognition of climate change as a real crisis enables humans to reintegrate with their living environment and reconfigure responses other than a defeatist view of life.

In fact, *Flight Behavior*, typical of the core essence of climate fiction, signals the grisly aftermath human and non-human species would endure, on the materialistic and psychological planes. The cyclic migratory journey of the monarch butterflies ferreting out other geographical spaces for survival is a catalyst for the protagonist to transcend her distress and move out of her rural claustrophobic world. In this respect, the narrative is an initiation of characters and readers into a transitioning path from gullibility and ignorance to environmental consciousness and knowledge.

Notes:

1. ‘Global Warming’ was coined by the oceanographer Wallace Smith Broecker in 1975. It identifies gradual increase of the average temperature of the earth. ‘Global Warming’ has been referred to as the most unprecedented catastrophic effects induced by human activities.
2. Barbara Kingsolver is an American writer, political activist and biologist. One of the prominent themes in her novels is her preoccupation with humanizing complex climate change and inhospitable environmental issues to render them accessible to common readers. Other recurrent themes in her works are social injustice, consequences of choices, home attachment and family relationships.
3. Other climate narratives that tackle climate change in different ways include J. G. Ballard’s *The Drowned World* (1962), Cormac McCarthy’s *The Road* (2006), Mark Lynas’ *Six Degrees: Our Future on a Hotter Planet* (2007), Paolo Bacigalupi’s *The Windup Girl* (2009), Margaret Atwood’s *The Year of the Flood* (2009), Ian McEwan’s *Solar* (2010), Jeff Vandermeer’s *Annihilation* (2014), Elizabeth Kolbert’s *The Sixth Extinction* (2014), Kim Stanley Robinson’s *Aurora* (2105), James Bradley’s *Clade* (2015), and Annie Proulx’s *Barkskins* (2016).
4. ‘Anthropocene’ is a term coined by the biologist Eugene Storer and the chemist Paul Crutzen in 2000 to underscore a new epoch in which human activity have shaped and impacted the earth.
5. According to Gerrard Genette, heterodiegetic narrators are not characters in the story yet they know everything about it whereas the focalizer, as Greg Garrard maintains, is the character who perceives and sees the surroundings.

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