The Use of Bionarrative Strategies for Trans-species Communication in Barbara Kingsolver's *Flight Behavior* (2012)

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Abstract
This research paper explores the elements of biophilia as fictionalized in Barbara Kingsolver's novel *Flight Behavior* (2012). This is done by adopting bionarrative strategies that address trans-species communication through the narrative arrangement of the text. As a term drawn from biology and employed by ecocritics, Biophilia entails the love of nature and all living systems. This research paper argues that Kingsolver's novel focuses on biophilic affiliations by means of providing narrative engagements beyond the human world. By incorporating stories about, and initiating conversations with, nonhuman animals, the writer employs narrative devices to serve as a catalyst for pinpointing man-nature relationship. The research paper proceeds to maintain how multiscale narration is employed in the novel to establish a new framework for exploring nonhuman life and investigating biophilic relationships. Using bionarrative strategies to discuss biophilic ideas ensures the interconnectedness of species and highlights the impact of climate change and global warming on both human and nonhuman beings.

Keywords
Bionarratology; Bionarrative Strategies; Biophilia; Multiscale Narration; Trans-species Communication; Barbara Kingsolver; *Flight Behavior*, Ecocriticism

استخدام استراتيجيات السرد الحيوي لتمثيل التواصل العابر للكائنات في رواية سلوك الطيران للكاتبة باربرا كينجسولفر (2012)

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المستخلص

تستكشف هذه الدراسة عناصر البيوفيليا كما تم تمثيلها في رواية سلوك الطيران (2012) للكاتبة الأمريكية باربرا كينجسولفر، وذلك من خلال تبني استراتيجيات السرد الحيوي الذي يناقش التواصل العابر للكائنات. وتوضح الدراسة كيف تعاملت كينجسولفر مع هذا اللون من التواصل من خلال المخطط السردي للنص. يشير مصطلح البيوفيليا، وهو مصطلح مأخوذ من علم الأحياء ويستخدمه علماء الاقتصاد والبيئة، إلى حب الطبيعة وجميع الأنظمة الحية. ترى الدراسة الحالية أن رواية كينجسولفر تركز على الانتماءات الحيوية من خلال توفير مشاركات سردية خارج العالم البشري. من خلال دمج القصص حول الحيوانات غير البشرية وبدء محادثات معها، تستخدم الكاتبة جوانب سردية لتكون بمثابة حافز لتحديد العلاقة بين الإنسان والطبيعة. يوضح البحث كيف يتم استخدام السرد متعدد النطاقات في الرواية لإنشاء إطار جديد لاستكشاف الحياة غير البشرية والتحقيق في علاقات البيوفيليا. إن استخدام استراتيجيات السرد الحيوي لمناقشة أفكار البيوفيليا يؤكد على الترابط بين الكائنات، ويسلط الضوء على تأثير القضايا الناشئة وخاصة تغير المناخ والاحتباس الحراري على كل من البشر وغير البشر.

الكلمات الدالة:

علم السرد الحيوي، استراتيجيات السرد الحيوي، البيوفيليا، السرد متعدد النطاقات، التواصل العابر للكائنات، باربرا كينجسولفر، سلوك الطيران

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"Taking research on animals and human-animal relationships into account might reshape the foundations of narrative theory itself.

(Herman 9)

"If thoughts exist beyond the human, then we humans are not the only selves in this world."

(Kohn 72)

In contemporary world in which life stresses result in psychological, physiological, and social problems, nature may provide a positive source of healing and hope of redemption. It is here that the concept of biophilia is significant. Lexically, the word 'biophilia' is a combination of the Latin words 'bio,' meaning life, and 'philia,' meaning love. Coined first by German-born American psychologist Erich Fromm in 1973 but later developed as a theory by American biologist Edward O. Wilson, the term 'biophilia' revolves around the relationships that bind human and nonhuman beings. For Fromm, biophilia is "the passionate love of life and of all that is alive" (*Anatomy* 365). In an earlier study, Fromm refers to love as "the active and creative relatedness of man to his fellow man, to himself and to nature" (*Sane Society* 31). Referring to the positive aspects of biophilia, Fromm states that the person who has a biophilic relationship with nature is a constructive person who seeks to influence the world around him/her using love and reason (*Anatomy* 365). Fromm claims that this ability to positively relate to nature is biologically determined, a claim that would be later adopted by Wilson as well as other biologists and ecologists. (366)

Like Fromm, Wilson believes that man is biologically endowed with the ability to love life and all living phenomena. He defines biophilia as "the innate tendency to focus on life and life-like processes**" (***Biophilia* **1).** Wilson also refers to biophilia as "the innately emotional affiliation of human beings to other living organisms" **(***In Search of Nature* 165**).** Stephen Kellert, a professor of social ecology, defines biophilia as an "inherent biological affinity for the natural environment" (*Building for Life* 49). Thus, for both Wilson and Kellert, biophilia is an instinct with which all people are born. Wilson admits that the hypothesis that human

beings are genetically related to other forms of life around them has not yet been scientifically proven; however, this biophilic affiliation is so recurring in accumulative patterns across cultures and societies that they "appear to be part of the programs of the brain**" (***Biophilia* 85**).** Thus, biophilia, or our love of life and all life forms, is hypothesized to be genetic in the sense that people are born with a tendency to love life and life-like processes. Biophilia is also assumed to be evolutionary in the sense that "our species evolved in a world where relationships with nature, be they positive or negative, were central to our survival." (Gullone 306)

Combining their knowledge and experience in ecology and biology, Kellert and Wilson, respectively, co-authored the book *The Biophilia Hypothesis* (1993) which is based on several empirical studies that seek to prove the affinity between human and nonhuman beings and analyze its various forms and degrees. The studies in the book discuss several topics related to the biophilia hypothesis such as the role played by nature in man's mental, cognitive, emotional, and aesthetic development. Kellert argues that our affinity for living nature is reflected in nine basic forms or values. These are "the utilitarian, naturalistic, ecologistic-scientific, aesthetic, symbolic, humanistic, moralistic, dominionistic, and negativistic valuations of nature" ("Biological Basis" 43). Not only is man's dependence on the natural world reflected in material things, but it also takes other cognitive and aesthetic forms. In addition to food and other physical substance, nature is the source of beauty, pleasure, inspiration, morality, knowledge, power, as well as danger and awe. Some of these values that govern man-nature relationship are analyzed in this paper by means of bionarratological tools.

Bionarratology, a recent development in narratology, focuses on narrative inquiry that concerns man's affinity with other living organisms. In *Narratology beyond the Human: Storytelling and Animal Life* (2018), David Herman attempts to develop a new approach to the study of narrative that takes into account trans-species relationality as well as massive emergent phenomena that extend beyond human life but affect both human and nonhuman beings. He calls this approach 'bionarratology' by which he means "a narratology beyond the human" that engages other living creatures (293). By investigating narratological issues from other nonhuman worlds, Herman challenges the "claims that narrative is by its nature human-centric" (xi). Although human and nonhuman beings use different codes of communication, bionarratology

seeks to narratively represent all possible ways of human-nonhuman connection, considering these ways forms of language. Herman asserts that narrative can deal with "issues of storytelling at species scale" (280). Furthermore, bionarratology does not only involve stories from/about all forms of life, whether these forms are human or nonhuman, but it is also concerned with the kind of narrative relationship that may be established among these different species. Ascertaining the significance of trans-species relationality and the inevitability of human-nonhuman interconnectedness, Val Plumwood argues that when we "hyper-separate ourselves from nature […] we not only lose the ability to empathise and to see the nonhuman sphere in ethical terms, but also get a false sense of our own character and location" (9). Therefore, developing a sort of bionarratology is a critical attempt to contribute to promoting trans-species communication and moving from anthropocentrism, in which nature and nonhuman life are dominated and exploited to biocentrism in which all forms of life have an equal inherent value. Introducing his approach of bionarratology, Herman argues that research on the relationship between humans and animals might contribute to restructuring the foundations upon which the narrative theory is based. His study on bionarratology aims to demonstrate that narrative engagement with issues about different species may lead to reconceptualize the basic concepts of narrative theory (Herman 9). These narratives in which man and animal have voice, and their thoughts and feelings are equally represented, may contribute to "reintegrating the human self in a larger community of selves." (26)

A key concept in bionarratology that helps analyze emergent phenomena beyond the human world is multiscale narration in which the narrative involves stories at a species level. Since it engages stories from different species, multiscale storytelling can "foster keener recognition of our inextricable interconnectedness with the larger biotic communities" (Herman 294). Multiscale narration means that storytellers are allowed to cross species boundaries, ignoring the lines that apparently separate humans and nonhumans and treat them in the same vein in so far as narration is concerned. Although it seems that narrative is basically a human phenomenon, multiscale narration is an attempt to reconceptualize narrative theory so as to encompass life and life-like processes beyond the human and represent human-nonhuman interconnectedness. It is through multiscale narration that we can develop "a more generous narrative and dialogic form of rationality that allows more sensitivity to the other." (Plumwood 61)

To investigate phenomena at the species scale, Herman introduces two types of multiscale narration which are more appropriate for analyzing sci-fi and cli-fi narratives. Type A of multiscale narration is based on areas at the scale of microphysics, namely phenomena at a smaller scale. This involves incorporating into the narrative issues related to brain physiology, cell biology, animal drives (Herman 255). In contrast, Type B of multiscale narration is based on areas situated at the scale of macrophysics; this involves phenomena at a larger scale such as interplanetary aspects and human evolution incorporated into the narrative (255). Domains belonging to either the micro- or macrophysical levels are incorporated into the narrative at the level of mesophysics, namely everyday events and experience involving human and nonhuman beings (254). Multiscale narration, at the macro level, involves the analysis of hyperobjects. Coined by Timothy Morton (2013), the term 'hyperobjects' is used to refer to "things that are massively distributed in time and space relative to humans" (1). Hyperobjects involve emergent massive phenomena that are not restricted to a certain place. Some of these hyperobjects are climate change, nuclear radiation, macroeconomic behaviors, and Covid-19 pandemic that are beyond human capacity to fully comprehend and control and that may be responsible for what Morton claims "the end of the world." (2)

There are different ways employed in a text to engage narratively with massive or macro-level phenomena that involve human and nonhuman species. One of these ways has to do with temporal arrangement of the events provided by storytelling (Herman 263). It is here that writers employ different strategies such as analepses (flashbacks) and prolepses (flashforwards). External analepses can take the narrative hundreds or even thousands of years back into history to narrate the origin of certain species that occupy the storyworld of the text. Another way of narrating species phenomena is "allegorical projections" which also involve the use of personification as a rhetorical device that highlights human-nonhuman affinity (263). It is here that a species or an individual nonhuman being is depicted as a human being to ascertain trans-species relationality.

In bionarratology, the concept of 'self' no longer refers exclusively to the human realm. The human being is just a self among many other selves that belong to different species. For Herman, a man or a woman is a self "within a larger ecology of selves, nonhuman as well as human" (14). Selfhood itself has a relational aspect in the sense that the self is not shaped in isolation from the surrounding forces. Although the issue of

nonhuman selfhood is highly controversial, several researchers ascertain that most nonhuman animals have the constituents of the self such as thought, feelings, reason, intentionality, and a certain level of self-awareness, perceptual consciousness, and moral responsibility (Herman 27-29; Kohn 72; Plumwood 178; Thomas 2-9; Turner 426-27; Urbanik 2). In *Self-Constitution: Agency, Identity, and Integrity* (2009), Christine M. Korsgaard does not deny that nonhuman animals have autonomy or self-determination, although she argues that the autonomy or self-determination of human beings is deeper (108). If a nonhuman animal is self-determined or autonomous, it most probably has some level of consciousness and self-consciousness. Seeing nonhuman beings as selves entails that their stories, feelings, and thoughts can be narrated in the storyworld at species scale. Kingsolver's *Flight Behavior* is one of those texts in which nonhuman beings are seen as selves whose storyworlds can be narratively represented.

Most of the critical studies on *Flight Behavior* revolve around the issue of climate change and its devastating impacts on human as well as nonhuman life. For example, Roslynn D. Haynes argues that Kingsolver employs science in general and her scientific knowledge as a biologist in particular in order to shed light on the dilemma of climate change and people's opposing views about it. Other studies by Mahmoud Ibrahim Ibrahim Radwan, Christopher Lloyd and Jessica Rapson, P. Loganathan, Sr. Innyasamma Gade, Greg Garrard, Antonia Mehnert, and Patrick D. Murphy discuss the effects of climate change on the economic and political levels as well as on nonhuman species. These studies celebrate Kingsolver's integration of scientific and literary knowledge through which the effects of climate change become manifest. Applying the concept of eco-cosmopolitanism to Kingsolver's narrative, Sonam Jalan emphasizes the universality of climate change predicament. Debra J. Rosenthal analyzes *Flight Behavior* in the light of poverty studies and relates the issues of poverty to climate change and how logging leads to global warming and other environmental catastrophes.

Closely related to these studies on climate change in *Flight Behavior*, other studies discuss the novel from an eco-feminist perspective. For example, Sabah Atallah Khalifa Ali and Zaid Ibrahim Ismael, Somi Ahn, Mary E. Dickson, Swatilekha Mahato, and Brendan Hawkins discuss women's problems in the novel in relation to several environmental challenges such as climate change, species extinction, and the use of pesticides, showing how climate change affects rural women's everyday lives. These studies demonstrate that the exploitation of nature and the exploitation of woman are interrelated issues.

Incorporated in a book investigating enchantment with nature in American literature from a supernatural perspective, Carmen Flys Junquera's article "Conversations with the Living World: Mutual Discovery and Enchantment" (2021) applies anthropological, ecophenomenological, philosophical, and magical realist perspectives to analyze Linda Hogan's *Solar Storms* (1995) and *Flight Behavior*. Junquera attempts to investigate the possible ways of reestablishing and expressing our enchantment with different species and forms of life. Although Junquera's article uses a different perspective, it is quite illuminating for the current study on trans-species communication in Kingsolver's novel. Junquera's study is based mainly on magical realism; however, it gives considerable importance to the role of science in *Flight Behavior*.

This review of the literature on *Flight Behavior* shows that there are aspects of the novel that have not yet been critically investigated. Based on an interdisciplinary perspective which combines critical ideas of bionarratology, ecology, and biology, the current paper seeks to add a new dimension, which, apparently, has not yet existed, to the extant studies on *Flight Behavior*. The paper seeks to prove that the narrative strategies used in the novel contribute to foregrounding trans-species relationality and biophilic bonds connecting human and nonhuman beings. *Flight Behavior* lends itself to investigation within an ecological context and through bionarratological lenses. Moreover, by using the critical tools of bionarratology as a new development in the field of narrative studies, this paper sheds new light on the current issues of climate change and global warming, emphasizing the role of narrative strategies in pinpointing contemporary world issues. In particular, the paper employs multiscale narration as a major critical concept in bionarratology in order to demonstrate that Kingsolver's narrative initiates an interspecies dialogue and ascertains the interconnectedness of human and nonhuman species.

Set in Appalachian Feathertown in rural Tennessee, *Flight Behavior* tells the story of Dellarobia Turnbow, a 28-year-old farm wife who lives with her unambitious husband, Cub, two children, Preston and Cordelia, and her father- and mother-in-law, Bear and Hester. Feeling crippled and disappointed by early marriage, mommy life, poverty, and lack of college education, the unhappy Dellarobia decides to venture on an affair with a telephone repairman, Jimmy. Climbing the mountain located on the back part of her in-laws' farm to commit adultery, she sees an amazing sight of an orange blur covering all the trees and the sky and

forming what seems to her a lake of fire. Although she cannot figure out what it is without her glasses, she believes that it is a sign of God's disapproval and that she should return home. Later, this turns out to be an entire colony of about 15 million monarch butterflies whose annual migration flight to Mexico has been disturbed due to the problem of climate change. Through Dellarobia's involvement with the butterflies and other nonhuman animals, the novel highlights human-nonhuman biophilic relationships and foregrounds climate change as a major hyperobject inflicting all forms of life at species scale.

Allegorical projection as one form of multiscale narration is used throughout *Flight Behavior*, highlighting the symbolic values of the biophilic affinity between human and nonhuman beings. One narrative tool of allegorical projection is interspecies analogies that bring together people, sheep, dogs, butterflies, and interplanetary phenomena, emphasizing the close affinity between human and nonhuman beings. Throughout the narrative, the heterodiegetic third-person narrator, using the free indirect discourse (FID), draws analogies between human and nonhuman beings to assert their interconnectedness. Early in the novel, the narrator compares Dellarobia's state of anxiety and restlessness to the state of "a hunted animal, or a racehorse" after much running and exhaustion (*Flight Behavior* 1). This analogy shows how human and nonhuman beings have similar feelings, emotions, and common reactions to situations around them. The narrator also compares Dellarobia's willingness to ruin her reputation and bring about her own downfall by sleeping with another man to the state of a fallen tree she has just passed by (5). Showing how nonsensical Dellarobia's abrupt relationship with Jimmy is, the third-person narrator uses an analogy from the natural world, likening her reckless acquaintance with Jimmy to "a torrential downpour in a week of predicted sunshine that floods out the crops and the well-made plans" (9). Even the physical description of Dellarobia identifies her with other species. The narrator describes her as "a woman with flame-colored hair" and describes the butterflies as "flame-colored insects" (1, 53). Dellarobia once has a dream in which birds are pulling her hair to make their own red nests (6). In so doing, a part of her becomes a residence place for another species, an act which is symbolic of her interconnectedness with other species. This biological interconnectedness is expressed by Kingsolver in an interview with Bénédicte Meillon in 2019. She states that when we die, "[o]ur elements become the soil, we become grass and trees and countless other lives" (Kingsolver**)**. Dellarobia likens herself to an ant or a worker bee, a "perfect female" that is able to establish a new colony relying on herself

alone (*Flight Behavior* 396). This identification of people with nonhuman animals in *Flight Behavior* is also traced in Kingsolver's latest novel, *Unsheltered* (2018). At the beginning of chapter six, Aurelia scolds her daughter Polly for her way of eating which seems to her uncivilized: "You make the impression of being a hungry animal" (121). Interestingly, Polly replies: "I *am* a hungry animal," and her father confirms her view: "Dear girl, she is. *Of the same world*" (121). In *Prodigal Summer*, Lusa also likens herself to a moth: "*Like a moth, here I am*" (125). Employing these human-nonhuman analogies ascertains trans-species affinities. The writer here engages stories and information about human and nonhuman species, mixing them together and showing how the lives of different species intersect.

Another form of allegorical projection in *Flight Behavior* is the employment of symbols to narrate phenomena at species scale. For Herman, multiscale storytelling which relies on the use of symbols can "foster keener recognition of our inextricable interconnectedness with the larger biotic communities" (294). Nature has always been used as a symbol in human communication. With its varieties of species, nature "provides a vast metaphorical tapestry for the creation of diverse and complex differentiations" (Kellert, "Biological Basis" 51). The fallen tree, the hunted animal, and the short-breathed racehorse in *Flight Behavior* are all representatives of Dellarobia's desperate and frustrating life conditions and her imminent downfall. Dellarobia feels sick of the "dull, stippled" sky of November which symbolizes her monotonous life and unhappy marriage" (*Flight Behavior* 2). Similarly, the "luckless sheep that stood down there in the mud" stand for Dellarobia's pitfalls (2). Trans-species relationality is also symbolically represented in the narrative by linking the fate of both the butterflies and Dellarobia. The whole species of monarch butterflies is an allegory of Dellarobia's disturbed life and her eventual decision to fly away to start a new life. Allegorical projection at a species level, according to Herman, can also be expressed through the employment of personification (262-63). The narrator personifies the tree as a human being lying naked, an image which anticipates Dellarobia's own condition when she meets her lover (*Flight Behavior* 12). Puddles and the sun as parts of the natural world are also personified as someone who winks happily (2, 144). The narrator here creates visual perceptual images and pictures the trees, puddles, and the sun as human beings, giving them life and vitality. Thus, the author brings other forms of creatural life actively into the narrative. Because it is impossible to let these species speak in verbal conversations like

human beings in this piece of realistic fiction, the author uses multiscale narration at species scale, allowing allegorical projections to link the two worlds of human and nonhuman beings.

The scientific value of biophilic affinities is highlighted in Kingsolver's novel through the employment of macro-level narration which involves stories from the nonhuman world and its hyperobjects represented in the endangered species of monarch butterflies as well as the phenomenon of climate change. These stories are narrated to us not through direct discourse (DD) or verbal expressions, but through external analepses, scientific observation, and experiments. In bionarratology, the nonhuman world is presented as an "experiential world" (Herman 205). This means that narrating these species worlds takes the form of scientific empirical studies, observation, and even tracing the history of natural phenomena. Science here brings human and nonhuman species together. Although *Flight Behavior* has a reduced timeframe as it takes place within one season, external analepses are used to scientifically explain phenomena that took place long before the action of this narrative. A considerable portion of the novel narrates the history and dilemma of monarch butterflies by way of external analepses. Entomologist Ovid Byron tells Dellarobia that the monarch butterflies, as a species, used to winter in Mexico for thousands of years (*Flight Behavior* 148). Juliet, Ovid's wife, also tells Dellarobia and her son how the butterflies came to be called "monarch" butterflies and "King Billies" (392). She tells them the whole story of these names which came from colonial time (392). The narrative also historically traces the migratory patterns of butterflies and the scientific efforts of ecologists and biologists to fathom these patterns. Put in a narrative form, scientific data from *Encyclopedia of Animals* (1952) and the *National Geographic* magazine, first published in 1888, is incorporated into the text. Ovid also tells Dellarobia the story of a Canadian scientist who, having dedicated his whole life to trace the monarch butterflies, finally came to discover where they go in winter; he published this scientific achievement in 1976 in the *National Geographic* (397). Accordingly, by resorting to external analepses, *Flight Behavior* "portrays an imaginative reach beyond its pages and the locale, scaling from the local to the planetary" (Jalan 6). The storyworld of butterflies is narrated to us through scientific observation and empirical studies. A group of scientists arrive to study and observe the strange phenomenon of the migration of the monarch butterflies to Tennessee instead of Mexico. Dellarobia grows interested in these experiments, and she engages with the scientific team studying the butterflies. She begins to know a lot of details about their migration patterns, response to cues, mating, and

nutrition (*Flight Behavior* 146-48). Dellarobia also organizes field trips to school children through which she and Ovid simplify scientific phenomena especially the butterfly migration and the effects of climate change (353-59). These forms of multiscale narration bring to light the predicament of our planet and the dangers surrounding it owing to global warming that negatively affects both human and nonhuman species.

The novel shows how climate change as a hyperobject affects all forms of creatural life, including human and nonhuman beings. By focusing on hyperobjects, multiscale narration is able to "bring within the scope of human comprehension the trans- or suprahuman consequences of our species' actions, priorities, and values in the wider context of terrestrial life" (Herman 22). For example, using the DD, the little girl Josefina and her parents speak directly to the reader about their dilemma caused by logging in the Mexican town Michoacán: "'*Everything* is gone!' the girl cried, in obvious distress. 'The water was coming and the mud was coming on everything'" (*Flight Behavior* 101). In the Author's note at the end of the novel, Kingsolver refers to an unparalleled rainfall in February 2010 in Mexico. The rainfall caused Angangueo, a Mexican town, to be exposed to floods and mudslides, causing the death of thirty people, while thousands of Mexicans became homeless (435). Kingsolver fictionalizes this real catastrophe by allowing Josefina and her family to talk about it; they tell Dellarobia that the landslide killed some people and caused them to lose their house and livelihood. (101-103). Dellarobia and Preston search the Internet for information about the impact of logging on Michoacán where the monarch butterflies come from and how logging caused Josefina and her family to leave their country and come to Tennessee. Being enlightened about the dilemma of logging and global warming, Dellarobia now stands against the decision of her husband's family to cut down the forests (171-72). Like Dellarobia, Lusa in *Prodigal Summer* (2000) stands against cutting trees: "I will not cut down those trees. I don't care if there's a hundred thousand dollars' worth of lumber on the back of this farm, I'm not selling it" (123). Ovid also gloomily enumerates the impacts of climate change and how "the damn globe is catching fire, and the islands are drowning" (*Flight Behavior* 231). In his interview with Tina Ultner, a CNN reporter, Ovid bitterly warns that human beings are facing overwhelming threats because of their own behavior (365). In this way, *Flight Behavior* "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" (Radwan 133). Through this form

of narration in which science and environmental issues are told as a story, the author "warns that the future generations have to live in the danger zone" owing to the consequences of global warming. (Loganathan 202)

It is well known that science is a pivotal component in almost all Kingsolver's works of fiction and nonfiction. Being a biologist herself, she always discusses environmental issues from a scientific perspective. In the interview with Meillon, Kingsolver states that her writing in general is based "[a]pproximately one hundred percent" on science (Kingsolver). According to Junquera, Kingsolver's novels often "have a scientist as a main character" (202). For example, in *Prodigal Summer*, Deanna is a wildlife biologist whose job is to preserve biodiversity by checking the population of coyotes as an endangered species. Another character is Lusa, an entomologist, like Ovid in *Flight Behavior*, and a Ph.D. holder, who is specialized in the study of butterflies and moths. Like Dellarobia and her son, Lusa is a lover of nature and all living creatures. Mary Treat in Kingsolver's *Unsheltered* is also a biologist and naturalist who lived in post-Civil War America during the 1870s and corresponded with Charles Darwin. The novel has considerable details of Mary's relationship with plants and ants.

Although multiscale narration plays a significant role in highlighting symbolic and scientific biophilic values through the employment of allegorical projection, external analepsis, observation, and experiments, the role of multiscale narration is best represented in emphasizing the humanistic values of biophilia. Based on a trans-species context, *Flight Behavior* is a narrative that engages both human and nonhuman worlds and demonstrates that the concept of the self is extended to nonhuman species. The third-person narrator employs the FID to bring the two worlds of human and nonhuman beings together and show how these species can be individuals, major agents, and even focalizers in the narrative. For example, while waiting for Preston's school bus, Dellarobia and her son see two butterflies mating in the middle of the road. A considerable portion of narration is dedicated to describe the scene in which the two butterflies seem to be focalizers (*Flight Behavior* 372-74). The two mating butterflies are presented as active individual agents in the action of the narrative; they are the protagonists of a love scene. Using their own body language, the two butterflies initiate a conversation not only understood by themselves, but also translated into verbal expressions by Dellarobia who explains to her little son the meaning of what he is watching. In so doing, the two butterfly lovers become round characters moving the plot to a level of suspense and climax. As dynamic characters, the two butterflies, sensing

danger in the road due to an approaching school bus, decide to move aside: "The male began to flap, still linked, trying for liftoff. His helpful wife folded her wings and consented to be dragged as he pulled their weight a wobbly few feet above the road" (373-74). Flapping its wings, the male butterfly may be using a code of communication to send a message to its female mate, a message conveyed through body language. Interestingly, the female butterfly seems to understand the message. The word "consented" here ascertains the female butterfly's agency and subjectivity. Calling a female butterfly a 'wife' brings it close to human beings and narrows the wide gap artificially separating the two species. The narrator adds suspense, and the action reaches a climax when Preston, afraid that the bus might run over the two butterflies, cries for help. Dellarobia immediately starts taking action to rescue the two butterflies; she asks her son to step aside, and she gets ready to wave down the bus (374). The narrative here engages the readers and raises their interest in and sympathy with nonhuman beings. When the two butterfly protagonists finally "achieved liftoff, taking their business up into the big maple," the scene ends happily, and the readers as well as Dellarobia and her son feel relaxed (374). The concern of both Dellarobia and the readers about the safety of the two individual butterflies reflects a major goal of multiscale narration, namely showing "how kinship networks cut across species lines— and also function[s] as models for situating humans within more-than-human communities" (Herman 16). As Loganathan puts it, Kingsolver "utilizes her novels, not only to entertain readers, but also to engage them in humanitarian, political, social, feminist and environmental issues" (202). It is also interesting that through most of the scene, Dellarobia and her son are just onlookers, while the two butterflies do most of the action, and the entire scene seems to be narrated from the butterflies' perspective. For Brenda Mellon Ebersole, the monarch butterflies "deserve the appellation of 'characters' in this novel. They exercise agency: they provoke change in every one […] linking the local and global implications of, among other issues, climate change" (213). Storytelling here connects the two worlds of human and nonhuman beings and highlights the humanistic values binding them together. Being able to see a tiny butterfly as a self in the same vein as a human being is a step forward toward destabilizing anthropocentric thinking and constructing a biocentric charter that emphasizes the humanistic values governing our biophilic affinities with other species.

One way of providing narrative engagements with nonhuman animals in the novel is presenting nonhuman beings as characters and focalizers who are able to initiate conversations using their own language. This narrative technique highlights trans-species communication as well as the biophilia binding the species of human and nonhuman beings. Even if nonhuman animals cannot tell stories in the same way human beings do, their behavior can still be studied using storytelling perspectives. Attempting to adapt nonhuman beings to the theory of narrative, Dan Zahavi argues that "the face also tells stories" (188). One may argue that through body movements, facial expressions, and sounds, nonhuman animals can convey to us stories about themselves and their conditions. If some human beings communicate using sign language due to being temporarily or permanently deaf or dumb, the body gestures and facial expressions of a nonhuman animal can also be considered a language that tells a lot about the needs and feelings of that animal. Cynthia Willet refers to these physical gestures and movements as "nonverbal 'proto-conversations' [which] establish a basis for cross-species communication" (14). Junquera maintains that in dealing with nonhuman beings, we should accept that "they indeed do have a language, and that it is our ignorance which makes us incapable of understanding it" (194). In her interview with Meillon, Kingsolver confirms that "there is a direct link between the language of the earth and the creative language in [her] work" (Kingsolver). Hence, the author here intentionally seeks to represent species languages in her works. Observing a group of sheep knocking their heads together, Dellarobia feels that this must be their intentional way of communication, a language understood by them: "They must have some good reason; animals behaved with purpose, it seemed." (*Flight Behavior* 41-42). Dellarobia attributes intentionality and purpose to the sheep; this means that they have some sort of reason. These are the constituents of the self which, it seems, are held by the sheep in the narrative. Hester, too, believes that when the sheep hit their heads together, it is a kind of communication by which they identify their boss (42). The sheep's behavior here indicates that they have perception, cognition, rationality, and, possibly, ethical standards. For Ebersole, Kingsolver describes the behavior of ewes in a way that emphasizes "the mindfulness of animal actions" (216). Early in the novel, observing the sheep while being shorn, Dellarobia feels that they are clever beings: "They struck her as cannier than the people" (*Flight Behavior* 25). The narrator presents the shearing process in a way that shows how these animals are mindful and wise beings. The narrator states that "each ewe came through the chute to face her duty by first pausing at the entrance,

lowering her hindquarters and urinating, giving herself a long moment to size up the scene before walking through that door" (25). It seems that the ewe here is a focalizer; the narrator uses the FID to tell the action in the scene from the ewe's perspective.

One innovative way of employing multiscale narration in *Flight Behavior* is initiating interspecies conversations. That is, the author provides several dialogic pairs involving human and nonhuman beings without sacrificing the realistic tone of the narrative. Not only do nonhuman beings engage in intraspecies communication with one another, but they also cross the species lines and communicate with human beings. In this interspecies conversational communication, the DD and FID overlap to bring together different storyworlds. For example, the two farm dogs, Roy and Charlie, engage in several proto-conversations with Dellarobia and Hester. One of these conversations occurs when Tina comes to interview Dellarobia about the butterflies. Tina knocks at Dellarobia's door, but she remains silent, pretending not to be in the house. She sits in the floor beside Roy. Using body language, Roy initiates a conversation with Dellarobia. Attempting to ask her what to do, the dog "cocked his head to one side, the collie question mark" (*Flight Behavior* 360). Interestingly, Dellarobia replies to the dog's question using the same sign language used by the dog: "She held up a finger and Roy stood fast" (360). After moments of silence, Roy grows impatient, so it uses another physical gesture to convey another message to Dellarobia in this dialogic exchange: "Roy glanced from the door to Dellarobia. He licked his lips and yawned, dog signs of nervousness" (360). By explaining the meaning of moving the head to one side and the act of yawning, the narrator interprets the dog's body language so that the reader may follow the action. It is clear here that the dog is the initiator of this dialogic exchange in which it asks and Dellarobia responds. Using narrative clues, Kingsolver attempts to show that the dog is a self that has subjectivity and intentionality.

Flight Behavior presents one of the best fictional scenes ever written in so far as narration at species scale is concerned. The scene involves a conversation between Dellarobia and a pregnant ewe. Dellarobia's part in the conversation is conveyed to the reader using the DD, while the ewe's part is delivered by the third-person narrator who uses the ID to highlight the ewe's feelings and thoughts, allowing the ewe a level of focalization. According to Herman, nonhuman worlds within the storyworld can be narratively presented through third-person omniscient narrators who can attribute subjective experiences and

qualities to nonhuman agents "by portraying them as perceiving, remembering, [and] imagining" (205). In the following exchange, the ewe seems to be a self like Dellarobia:

> "So what's up, lady?"
>
> The dark lady turned her nose away, checking out Dellarobia through the horizontal pupil of one pale amber eye. Her breath clouded the air in quick, visible puffs.
>
> "You're not making my day here, you know that?"
>
> The ewe uttered a low, productive belch and began to chew her second-time-around breakfast in the most normal fashion known to sheep.
>
> "You couldn't do this in the barn, could you?" she asked.
>
> The ewe called her attention back with a strange, high grunt and pointed her nose again. (*Flight Behavior* 414)

It is interesting that, except for the two words 'ewe' and 'sheep,' the whole exchange could pass for a conversation between two human beings, one of whom is worried about the other who is physically uncomfortable and, therefore, replies only using facial expressions, body movements, and sounds of stress and agony. It is noticed that for each question asked by Dellarobia, the ewe gives an indicative response in the form of body movements, facial expression, eye contact, and sounds. The reactions of the ewe give the animal a level of intentionality and shows that it perceives Dellarobia's questions. It is also obvious in this interspecies conversational exchange that Dellarobia considers the ewe a subject capable of showing intentionality: "Being able to conceive others in intentional terms is important to being open to them as possible communicative, narrative and ethical subjects" (Plumwood 177). It is also noticed that throughout the novel, the words 'lady,' 'girls,' 'boys,' 'wife,' 'she,' and 'he' are used to refer to the sheep, dogs, and butterflies. The use of these 'human' words to represent nonhuman beings foregrounds interspecies subjectivity. According to Robert L. Young and Carol Y. Thompson, both human beings and animals can "create intersubjectivity through shared (1) intentions, (2) foci of attention, and (3) emotional states" (469). These three prerequisites of intersubjectivity are traced in the novel in general and in the above exchange in particular. In this way, *Flight Behavior* is a narrative which can be studied in bionarratological terms because it can be classified with those narratives that, in Herman's words, "move beyond an understanding of self-other relationships in terms of trans-species alignments to a challenging or even erasing of the boundary between humans and nonhumans." (Herman 15)

Hence, nonhuman species in *Flight Behavior* are individuated and treated as selves, and, consequently, they become characters, and sometimes focalizers, in the narrative arrangement of the novel. Contrary to Junquera's view that "Dellarobia begins to hear the monarchs as one living, breathing organism," (198), the current paper argues that the monarch butterflies, the sheep, and the two dogs are individuated in the narrative, and this is very clear in the conversational exchanges between Dellarobia and individual nonhuman beings. The most poignant scenes in Kingsolver's narrative are those which involve the stories of individual nonhuman beings. In one of these scenes, Dellarobia sees a dying butterfly. She steps out while it is raining to fetch the butterfly as if it were a member of her family: "She held it close to her face. A female. And ladylike, with its slender velvet abdomen, its black eyes huge and dolorous. The proboscis curled and uncurled like a spring" (*Flight Behavior* 319). The third-person narrator's details here individuate the butterfly. From Dellarobia's perspective, the butterfly has ladylike appearance, which means that Dellarobia holds it in awe and wonder. Observing the butterfly in Dellarobia's hand, Ovid raises a pathetic question whose aim is not to elicit an answer from Dellarobia, but rather to show sympathy with the dying butterfly: "If someone you loved was dying, what would you do?" (319). The narrative here emphasizes the importance of care as one aspect of love of nature and its living species. As Fromm puts it: "If I love, I care" (*Sane Society* 31). Furthermore, the question asked while Dellarobia is holding the dying butterfly helps the reader see the butterfly as an individual self. Even with its silence, this dying butterfly seems to be a dynamic character since the whole action revolves around it, and it draws the sympathy of both readers and main characters in the novel.

Another moving scene involves the ewe in labor. Considering the ewe a member of her family, Dellarobia decides not to leave it alone in these moments of agony. Watching the process of lambing, the suffering of the ewe, and the very first moments of a lamb's life, Dellarobia "felt overwhelmed with love and loss and nostalgia for this bond that was not even yet in her past" (*Flight Behavior* 416). The newly-born lamb seems to be stillborn, and Cub tells her that if a lamb does not move when it is born, it is surely dead, according to his mother. As a woman who loves life and life-like processes, however, Dellarobia decides not to yield to death:

> She found she could not abandon the effort. Accepting death, she'd done that, but here was another story: bringing life in. Not good-bye but hello, screaming it, please. She massaged the dark curly

> hide until her own knuckles glowed red against it, and when she paused, the lamb tried to lift its head again. It opened its eyes and looked out. Life arrived. Dellarobia began to cry, yelping sobs. (418)

These instances of dealing with nonhuman beings as individuals and selves give voice, however limited it might be, to these creatures. If sounds and body gestures are considered proto-conversations, as Willet suggests, it necessitates that the beings that produce these sounds and gestures are meant to have at least a limited level of voice. Individual butterflies, the two butterfly lovers, the pregnant ewe, and the two farm dogs can be considered at least semi-focalizers since their thoughts, conditions, and desires are highlighted. Kingsolver addresses trans-species communication in the narrative arrangement of *Flight Behavior* in a way that permits nonhuman focalization and individuation. She seems to be dedicated to foregrounding the focalization of nonhuman beings.

Dellarobia's relationship with other nonhuman beings helps her develop a new self that takes into consideration other selves that inhabit the planet with her. The new Dellarobia comes to realize the mistake of having before separated herself from her fellow species (*Flight Behavior* 54). Fromm laments the separateness of modern man from nature of which he/she is part: "He is set apart while being a part" (*Sane Society* 23). Now that Dellarobia becomes one with nature, the butterfly is no longer an object for her, but a subject that has an individual self, a prerequisite for being considered a character or even a focalizer within the narrative arrangement of a piece of writing. The reaction of Dellarobia and her son to other species reflect an innate inclination toward life and life-like processes. According to Plumwood, a strong relationship between human and nonhuman beings "must be built on the kinds of perceptual, epistemic and emotional sensitivities which are best founded on respect, care and love" (142). The same view is expressed earlier by Fromm; he argues that man's "productive love" of all living things implies an attitude of "*care, responsibility, respect and knowledge*" (*Sane Society* 31). Working with the scientific team studying the butterflies, observing their dilemma, and feeling that they are selves like her, Dellarobia begins to cry over the loss of those nonhuman beings because "they were becoming beloved and important. They seemed to matter" (*Flight Behavior* 149). This recalls Lusa's fury in *Prodigal Summer* at "the disaster of eliminating a predator from a system." (63)

The novel ends with an emphasis on the interconnectedness of human and nonhuman species. In the final scene, a flood engulfs the Turnbow place, while the surviving butterflies are ready for their exodus

(*Flight Behavior* 433). The flood at the end of the narrative is an ironical response to Deanna's belief in *Prodigal Summer* that "solitude is a human presumption" (1). Human beings cannot live in isolation from the surrounding world of which they are part. Ignoring human-nonhuman affinities and turning blind eyes and deaf ears to common predicaments such as global warming, wars, and pandemics would lead to catastrophic repercussions. With the coyote as a focalizer, the narrator ends *Prodigal Summer* with the belief that "every choice is a world made new for the chosen" (444). This statement, together with the ultimate exodus of the butterflies at the end of *Flight Behavior*, leaves us with the message that we can opt either to remain in solitude and wait to be engulfed by the outcomes of our own actions, or to move beyond our anthropocentric ideas and build our world anew by espousing biocentric thinking that would contribute to protecting our shared planet.

In conclusion, *Flight Behavior* is a narrative that situates human beings ecologically and thus subverts hegemonic narratives that deny nonhuman beings agency and subjectivity. In Kingsolver's text, nature, with its nonhuman beings, is no longer a mere background against which man's issues are discussed. Employing multiscale narration, nonhuman beings and environmental issues are foregrounded. The paper demonstrates that selves, whether they are human or nonhuman, can relate. Two ways discussed in this paper showing trans-species communication are biophilia and narrativity. Human and nonhuman beings have always been interconnected, and this takes scientific, humanistic, and symbolic forms, to mention only a few. These biophilic values ascertain the interdependence of all beings and the strong bonds that bind them together. Furthermore, the author employs narrative techniques in a way that reflects this relationality. One way of decentralizing anthropocentrism and foregrounding biocentrism is giving voice and prominence to nonhuman beings. Bionarratology opens the way for achieving this goal by examining the ways in which other species may be narratively represented. *Flight Behavior* is an apt narrative for applying bionarratological tools that seek to engage nonhuman beings and highlight trans-species communication. Of these tools, multiscale narration subverts the notion that storytelling is a human act. The text is narrated in a way that intentionally gives nonhuman beings human attributes such as agency and subjectivity. In a word, we, human and nonhuman beings, are all selves sharing the same planet, and even if our codes of communication are basically different, initiating an interspecies dialogue is not impossible. Moving beyond species boundaries helps undermine our anthropocentric thinking and see ourselves as mere selves among other selves.

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