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ECOLOGICAL BIOSEMIOSIS: A BIOSEMIOTIC READING OF CULTURE AND NATURE RELATIONSHIPS IN THE SELECTED POEMS FROM *A NATIVE CLEARING* AND *MAN OF EARTH*

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Abstract
This paper attempts to flesh out how the biophiliac, anthropocentric, and ethnological modes of biosemiotic representation aid in the imaging and discoursing of nature-culture relationships in the selected poems from the anthologies *A Man of Earth* and *A Native Clearing*. Capitalizing on ecocriticism, biosemiotics provide an ecological reading of the manifestations of human culture and their natural surroundings. This reading underscores how meaning-making and the intricacies of the sign system transpire in all living systems. This reading also paves the way for modeling the environment through literature highlighting the complex relations between the environment and human culture with an amplified and specialized view of the individual entities that shape and affect the environment. Using the descriptive-analytical research design and the theories of Zapf, Hoffmeyer, and Uexkull, we illustrate how the biosemiotic foregrounds of the poems speak of how sign relations project the dealings and ruptures between human-cultural activities and other natural semiotic subjects. We also underscore the perils stemming from anthropocentric players with emphasis on their cultural undertakings, the hallowed character of nature steering tragic ecology, the evolutionary fitness and adaptability of animals, ecosophy and speciesism and how these affect the biosphere and the formation of biosemiotic linkages and reciprocations.

Keywords: biosemiotics, ecocriticism, nature-culture, semiotic scaffoldings, Umwelt

Introduction
In literary theory and criticism, a young and developing critical vista called "ecocriticism" rose to prominence in the late eighties and nineties. The scholarly community had boldly responded to the various environmental exploitations that became markedly apparent in the concluding decades of the twentieth century. The offshoots of the academic community's responses to these issues plaguing the environment had significantly paved the way for the first conference on ecocriticism organized by the Modern Language Association in 1991. This pioneering convention efficiently laid the groundwork for the formation of the

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Association for the Study of Literature and the Environment in the year 1992 (Bellarsi, 2009). The year 1993 also witnessed the publication of primary ecocritical sources such as the ISLE journal (*Interdisciplinary Studies in Literature and the Environment*). The landmark reader of Cheryll Glotfelty and Harold Fromm titled *The Ecocritical Reader: Landmarks in Literary Ecology* was published in the year 1996. This anthology of cutting-edge expositions had distinctly solidified the study of the relationship between literature and the environment with ecology and its attendant hallmarks serving as the primary vista in critical discourse. Echoing Glotfelty and Fromm in the said anthology, the movement takes an earth-centered approach to literary and cultural studies (introduction, 1996). It provided a compelling avenue for the "greening" of the discourses posited by literary and cultural studies. In examining literature from the ecocritical perspective, one takes into consideration the manifold issues that impact the environment. The literary world being examined becomes grounded on matters such as biography, geography, flora and fauna, disasters, environmental justice, geography, life interactions and processes, and even the affections and revulsions on places. These ecocritical elements perused in literature serve as potent validation of what Barry Commoner, a prominent American biologist and ecologist, said in the book *The Closing Circle: Nature, Man, and Technology* (1971). Commoner had espoused the notion of interrelations— the very idea of interconnectivity in all things and every enterprise—be it human or non-human. Capitalizing on this ecological purview, literature becomes endowed with the capacity to project the complexities transpiring in the biosphere. The ecocritical vista underscores the entwining storylines of variations, repercussions, chaos, ruptures, and interconnectedness. These narratives enable literature to conjure up a model that can draw attention to the affective interrelations and even ruptures between the environment and its various facets (Peacock. 2002). Ecology, when presented as a subject of literary discourses, can certainly posit multifarious ways of expressing and examining the relationship between the complex territories of nature and culture (Cooke, 2016). From these relations, biocentric and anthropocentric issues emerged significantly affecting the biosphere as a whole (Smil, 2003).

As it attempts to underscore the manifold issues about the environment, one can see the fruition of how literature can function from a two-way perspective. Literature can become a contributor and referent in the explication of significant issues about the environment (Potter 1). From the ecocritical point of view, this becomes possible because nature and its concomitant issues are strikingly multifaceted. Dana Phillips, in explaining the truth of literary ecology, underlined the notion of the network that can further such teloses of literature and its attendant poetic consciousness. She affirmed that nature is systematically enmeshed in culture, and vice-versa (Phillips, 1999). Literature can convey potent uninhibited environmental landscapes and continents. Such paradigms serve as the springboard to understand and expose the intricacies of the nature-culture binary in postmodern discourse. Ecocriticism apprehends the nature-culture connection and disconnection as dynamic and transitory entities. Invoking Coupe's definition of ecocriticism, it is a critical theory that seeks to ensure that nature is given as much attention and rendered as a site of discourse within the humanities as is currently given to other anthropocentric concepts such as class, gender, and race

(Coupe, 2000). Nature and culture are strikingly presented as discursive categories sculpted by the complex ideologies of anthropocentrism and ecocentrism. The ecological imagination of literature can be seen as essentially lying on a mutualism-parasitism continuum (Sun, 2020).

Grounded on ecocriticism, biosemiotics also emphasize the intricacies of the environment and the micro and macro key players that shape it (Garrard, 2012). Founded by the linguist Thomas A. Sebeok, it veers away from the mechanistic, systematic, and reductionistic bents of the other fields in the sciences. As a theoretical lens, it espouses the fact that life can be shaped by the processes of semiotics taking place in the environment (Hoffmeyer, 2007). It emphasizes the intricacies of the sign system that exists and affects every living entity in the environment. This view posits that semiotic interactions among various organisms are part of the natural world, and that definite and purposeful structures and arrangements can be formed through a network of semiotic facts and occurrences. Hoffmeyer calls this formation of patterns "semiotic scaffolding devices" (Hoffmeyer, 2007). The creation of these semiotic interactions provides the essential specifications and conditions for various living systems to accomplish their tasks. It is also essential to note that these are based on the ability of the organisms to make sense of signs and spring into action based on the workings of these signs. There exist specific and complex sign systems in the environment concerning the different activities of species and organisms. This is a clear indication that the biosphere is teeming with various complexities that can form the composite foreground of biosemiosis. About this, the biosemiotician Jesper Hoffmeyer opines

> Cultural processes can be viewed as special instances of a more general and exhaustive biosemiosis that constantly unfolds and acts in the biosphere. Nature and culture, thus stem from a continuous, unified, and creative evolutionary process that is based and grounded on the interpretation of the sign (Hoffmeyer, 2008).

This can be seen as an affirmation of Barry Commoner's idea of interconnectivity opening and opposing the objective, conventional, and reductionist views that have been upheld in the biological systems posited by Neo-Darwinian Modern Synthesis. In support of this assumption, Emmeche affirms that small living entities viewed from mechanistic traditions can serve as a hindrance to understanding the intricate layers of life (Emmeche and Kull, 2011). This idea can be found at the core of biosemiotics. Thomas A. Sebeok capitalizes on this affirmation as he puts forward the notion that "life and semiosis are coextensive" (Kull, 2010). This idea of co-extensiveness is further validated by Jacob Van Uexkull's theory of the Umwelt. German biology is an area that remarkably expands the very vista of biosemiotics. The theories of Jakob von Uexkull on the Umwelt and the semiotics of Charles S. Peirce critically merge the study of signs and symbols with biological processes as they appear to the organism thereby treating biological factions as the totality of interrelated Umwelten (phenomenal world). The notion of the Umwelt pronounces the relationship of an organism with the environment as molded by the species-specific sensitive, discerning, and intellectual capacities. The meanings and

insights produced are structured and systematized by the emplacement of the organism which covers the manifold means of how the organism links to the natural and cultural entities in the environment. The Umwelt pertains to the capacities of living organisms to create their own incredible and unusual worlds. This also includes the capabilities of the organism to observe and identify with the signs, make sense of them, and then communicate how they had internalized these signs to other entities in the environment shaping their environments in return. The communication becomes reciprocal as the environment brings something back to the organism. As a result of this symbiotic interrelation, the organism learns to adapt to the environment and therefore can modify, evolve, and ultimately learn from the said transaction.

Biosemiotics also grounds its understanding of the sign on the semiotics of Charles Sanders Peirce who prominently posited that "the universe is perfused with signs, it is not composed exclusively of signs" (Simpson, n.d.). This provides the implication that all living organisms (humans, animals, plants, and microorganisms) can ingeniously engross their environments through a dynamic elucidation of the signs. In this regard, it is important to distinguish Charles Sanders Peirce's take on the sign. The Peircean sign is viewed to be triadic. It connects the representamen (the sign) to its object through the presence of the entity interpreting the said sign resulting in the creation of the signifier. Peirce sees this semiosis as active, ever-changing, and constantly developing animated by our experience of nature and culture. The semiotics of Peirce creates the groundwork that the biosemiotic conception of natural forms can be habituated by the sphere of culture itself, and vice-versa (Neubauer, 2016). Grounded on signs, biosemiotics can project verbal and non-verbal worlds relating to the unrestricted natures of various organisms leading to the creation of semiotic models by which we can view the environment from a more particular vista. The concept of the Umwelten conveys the environment as comprised of signs that are deemed meaningful for the survival of the organisms. In this regard, we recognize how the environment signifies itself in various ways. This is a way of saying that environments, in other words, are always semiotic environments (Wheeler, 2008).

As an offshoot of ecocriticism, biosemiotic literary criticism emphasizes contextual-ecocritical readings and interpretations of the manifestations of human culture and its environments. It is essential to note that biosemiotics is a recent literary critical development. This field could provide an alternate vantage point for understanding and examining literature. Timon Maran and Louise Westling argue that literary and human cultural undertakings should be interpreted by capitalizing on this wider context of semiotic processes. This is also a way of saying that identities and dispositions in literary studies are not just anchored on specific emplacements and positionings but also on ecological contexts. Ecological disposition becomes a result of the workings of situatedness, significations, referentiality, and emplacement of meanings. These ideas of emplacements are what augment the ecoliterate affinities of literature. It projects an ecocritical sphere that is conserved, maintained, and balanced, and to some extent, even upset and imbalanced. Implicit in these ideas are the ecocritical semiotic occurrences of connections and disconnections that can be further expanded in the ecoliterate affinities of poetry (Deitering, 1996).

Timo Maran, one of the main proponents of biosemiotic criticism, further explains its central earmarks and significance in the humanities. Taking his cue from the British semiotician and philosopher Andrew Staples who argued that the position of the author can be slowly obscured, Maran recognizes the fact that the author can also be obscured in the process providing the springboard for the text to be further expanded and incorporate in it the intricacies of natural phenomenon. It is from this inclusion that landscapes become a special kind of text. Recognizing the complexities of these texts, Maran also affirms the significance of this recognition of landscapes rendered as texts. According to Maran, with this acknowledgment, we also have to recognize how these texts can also be at par with all living beings and even the other forces of nature as creators and sharers in the creation of meanings. Simply put, all forces of nature and living beings are endowed with their agencies which have an impact when it comes to the endeavor of textually chronicling the issues about the environment. This can be manifested in the text or the descriptions created within these texts (Maran, 2016).

Recognizing the presence and living of beings and other forces that also animate the environment as well as the connections and disconnections that can transpire among them, biosemiotics provide an imaging of the environment based on the presence of semiotic binds. The signs that are subject to alteration can also affect the formation and presentation of the existing order of things in the environment. Living organisms' existence and emplacement in the environment can be semiotically altered (Maran, 2016). In biosemiotics thought, the presence of semiosis affects, controls, and synchronizes ecosystems. Meaning-making can potently stabilize and destabilize such a community of interrelating organisms. Biosemiotics also situate the environment as a spatial-progressive expression of the ecosystem or even the biosphere at large. This is the biosemiotic way of engaging the dynamic and transitory nature of the communicative and semiotic relations occurring in the environment.

In this paper, it is essential to note that the biosemiotic explication is made possible because of the three modes of representation that the selected poems employ particularly the biophiliac, anthropocentric, and ethological modes. In underscoring the biophiliac stances of the poems, the selected poems are cognizant of the workings of nature and its attendant turmoils. The strong stances and tones of the topographic about how the place is created and altered, hydrographic referring to water and the power of its fluidic nature, dendographic about trees, leaves, and the growth of plants, and Animalia underscoring ethological discourses. They serve as the validating drives in poetry that chronicles nature/environmental and cultural connections (Morton, 2007). As for the anthropocentric mode, the poems also show the entangled density of experience of anthropocentrism and how it ushers in the discourses regarding the sense of accountability and humanity's handling of the environment and the recognition of the instabilities, conflicts, and turbulences that upset nature and our environmental home ground. The settings in the poem are thoroughly familiar emphasizing the norm of daily experience with nature. The experiences conveyed by the anthropocene are seen to be drawn from the common, the representative, and the probable. The poems project these experiences as truthful experiences with verifiable consequences. Another notable mode is labeled in this paper as the ethological mode where the interactive and rhetorical consciousness of the

animals are examined looking at how they create their ecologies and networks of connections, disconnections, and ruptures concerning their environmental emplacements.

Method

In this paper, we capitalize on the descriptive-analytical research design. 10 poems in English from the anthologies *A Native Clearing* (1993) and *Man of Earth* (1989) were chosen thematically. Three poems were taken from *A Native Clearing* and seven from *Man of Earth*. We attempt to critically read the selected poems in the light of biosemiotic ecocritical theory. In disclosing the biosemiotic nature of the poems, we flesh out how the writers convey the logos vitalizing the natural world unveiling the ecoliterate tendencies of their poems. The selected poems can be viewed as giving form to the specific semiotic occurrences that living entities experience in the biosphere. This is a means of acknowledging that literary depictions and verbal knowledge can be grounded on the semiotic potentialities of the environment. As a means of expanding our view of ecocritical relationships in literary criticism, literature also requires the discourses from the non-verbal domains to delineate the discourses on culture-nature relationships. (Maran, 2016). In ecocriticism, this is a way of affirming that literature tries to represent the environment and the dichotomy of nature and culture in various ways. Loaded with semiotic scaffolds and various environmental codes, the selected poems can represent complex and multi-layered realities concerning the relationship between the realities of culture and nature. Taking the cue from Maran and Westling, a biosemiotic approach to literature can be a viable tool in reconceptualizing man's relations with his nature and environment by also including the biological vista from which one hails which can include evolutionary, cultural, and personal histories, environmental experiences and the human umwelt that essentially shapes one's environment where he or she is emplaced in (Maran & Westling, 2010).

We also posit that the selected poems can provide the area of biosemiotics with a rich comprehension of the ecological strategies employed by natural and cultural aspects of life in fashioning the environment. Biosemiotics is a means of modeling the environment through literature—a vista that underscores the relations between the environment and human culture with an amplified and specialized view of the individual entities that shape and affect life and the environment in general. In the selected poems, we also intend to highlight the biosemiotic landscape environment affecting the course by which human cultural forms and undertakings can be utilized in creating changes in the physical environment or the biosphere at large. Through the poems, we also intend to highlight the issues that biosemiotics can bring to the humanities through the ecocritical themes raised in this paper. Recognizing how the poems ecocritically chronicle the narratives of connections and disconnections, this paper also is an attempt to validate how the semiotic scaffolds of the poems can speak of how communicative and sign relations project the dealings and ruptures between human-cultural activities and other organisms and semiotic subjects; how human bodily sensations and perceptions and biological hierarchies affect the interrelations between environmental information, and how these are conveyed in literature. In line with this, this paper attempts to answer the following questions:

1. What are the semiotic interactions among the life forms that create the images and instances of connections and disconnections between nature and culture in the selected poems?
2. What are the tropes of ecocriticism that can be fleshed out from the selected ecoliterate poems supporting their biosemiotic foreground?

On biosemiotic theory and literature as an ecoliterate sensorium

Anchored on semiotics, biosemiotics underscores how semiotic exchanges among life forms create patterns that shape natural-cultural activities and their relationship with the environment. Firm behavioral patterns also materialize because of a network of semiotic relations (Hoffmeyer, 2007). These patterns are significantly perused in biosemiotics. Echoing these ideas, this is where we borrow Jesper Hoffmeyer's concept of "semiotic scaffolding" synonymous with the idea of "semiotic interactions." We focus on the interactions among life forms, how they enact their tasks, and how they interpret their environments through their semiotic undertakings and comprehensions. This is a way of showing how the communicative and sign relations between the human-cultural domain and the various life forms enable the semiotic nature of the environment creating the biosemiotic layers of cultural meanings that express memories, hierarchies, senses of engagement, and networking with life forms such as plants and animals, and even the representations of one's accountabilities towards the environment. Literature can be viewed as partaking in the discourses of giving form to biosemiotic occurences through the ecoliterate affinities of poetry. It was Hoffmeyer who said that cultural occurrences can be intellectualized in the light of a special and extensive kind of biosemiosis making us see that nature and culture can be grounded on sign interpretations (Hoffmeyer, 2007).

This avows the idea of "interconnectedness" as it attempts to make sense of the logos and possible occurrences shaping the organic world fashioning literature's discourse on human-nature relationships in different ways. From the biosemiotic theory of Jacob von Uexkull, the idea of the Umwelt becomes noteworthy referring to the particular ability of life forms to build a prodigious and remarkable domain projecting a purposeful cycle through a recursive semiotic reaction circlet (Neubauer, 2016). This is seen as a good means of examining how the environment is being modeled in literature through the exchanges between the natural and cultural domains of life from a more specific ecocritical perspective.

Hubert Zapf prominently posited the notion of literature acting as a special kind of sensorium. This sensorium is the one that can chronicle the dynamism and pluriform tendencies of the biocentric and anthropocentric spheres in ecoliterature. This is a way of saying that ecocritical knowledge can be fleshed out from literature. This is the reason why the concept of sensorium also augments the ecocritical side of literature. The said force possesses the potency to disclose the specific intricacies of nature and culture. This is what Zapf prominently affirmed in his book "Literature as Cultural Ecology (Zapf, 2016).

The strong ecological and ecocritical tendencies of literature can serve as a pliant springboard for interrogating the issues stemming from nature-culture duality. According to Zapf, with literature possessing its own ecological and ecoliterate potencies within the culture where it is emplaced, we see how it can loquaciously make sense of the contradictions, conflicts, traumas, and infective

structures of civilizations. It is from this sensorium that we can see the relentless rejuvenation of language, opinion, communication, linkages, thoughts, and imagination (Zapf, 2016).

It is from this pronouncement from Zapf that biosemiotics can be framed from a multidisciplinary and even transdisciplinary perspective. Literature can successfully come up with an avenue to address issues plaguing the environment from various perspectives. This is a perspective that can welcome scientific codes addressed in literature such as cognitive biophilia, mutualism, parasitism, fire ecology, ethologies of territoriality, tragic and perfect ecologies, anthropocentrism, systems thinking, and holism. These are the issues that the present study attempts to thoroughly explore capitalizing on the perspective of biosemiotics. The stance on literature possessing a certain ecological force can aid in framing the many semiotic scaffoldings that affect the semiosis of life. The ecological force of literature that can be projected by poetry underscores the dynamic nature of literature in chronicling culture and nature relationships. The foreground is to be noted for its ecological tendency. It is the tendency of the energy that can make us see the intricacies that can be found in the foreground of the nature-culture duality. These "textual energies" being affirmed by Zapf can crystallize into semotic codes that can specifically speak of the relations and ruptures in the natural and cultural spheres of life (Zapf, 2016).

We capitalize on the theories of Hoffmeyer, Uexkull, and Zapf to illustrate the assumptions of biosemiotics using the selected poems from *Man of Earth* and *A Native Clearing*. In positing an ecocritical interpretation of the poems, this paper analyzed the following themes namely the perils of the anthropocentric players with emphasis on their cultural-civilizational agendas, the hallowed character of nature ushering in tragic ecology, the evolutionary fitness and adaptability of animals, the concepts of ecosophy and speciesism and how these affect the biosphere and the formation of biospherical linkages and reciprocations. These themes can modestly expand the very scope of the sign processes in the biosemiosphere as well as into the inner milieu of various life forms providing the humanities, literary studies in particular, more corroborated and extended discussions concerning human cultural and natural processes (Maran, 2016).

Findings and Discussion

The perils of the anthropocentric players: Consumer-resource interactions and cultural-civilizational agendas

Fernando M. Maramag's *Cagayano Peasant Songs* is a poem that widens the sphere of subjects underscoring how the life forms in the poem namely that of the "jungle fowls" and "herons" act upon their environment. Rendering the exchange reciprocal, the poem shows how humans can decode the communication systems of the said life forms. Acting upon the sign of the "I" that becomes the symbol of the anthropocentric think tank in the poem—the one who hunts for these "bashful jungle fowls" and "heron's eggs", the animals in the poem are to be rendered as semiotically competent animals as they project the umwelt of "consumer-resource interactions" making them aware as they are emplaced in a victim-system exploiter system. It is also essential to note in the poem that the "I" is the one who conducts his quotidian affairs that become signification for the animals. With the animals' experimental study of the "self-producing syntax and

rule of existing and natural processes" (Manghi, 2002), the animals ascertain the signs and respond to them with a biological in-built inclination leading towards a specific complex behavior particularly that of nesting instinct (espousing parental care) and internal escape functions. Being exposed to the perils of the anthropocentric players, the animals communicate to it with the biological urge to protect their young making it an innate biological factor that shields them from the signs of danger and displacement. This innate escape function and innate behavior are best captured by stanzas I and III of the poem:

I
In the shady woods, I know
Where the bashful jungle fowls are keeping
Their helpless young. They are below
The trees by which the rill is weeping.

II
And if to me 'twere only known
Where the heron's eggs are laid
In the deep still river's bed,
They were treasures to own (Abad, 1989).

Complemented by the perilous sign brought by the "I" in the poem, the poem becomes scaffolded by the expression of innate biological factors particularly that of animal instinct—an invariant distinctive characteristic that shapes the "umwelt" of the animals in the poem. In this regard, the biosemiotic landscape in the poem becomes distinctly loquacious. It is seen projecting the signs in ethological interaction and together with semiotic regulations happening and shaping the ecosystem (Maran & Westling, qtd. in Favareau, 2010). With the animals' action of hiding "below the trees by which the rill is weeping" and how the anthropocentric "I" struggles to find where the "heron's eggs are laid", the poem encodes and validates the communication through the animal's "neural network"—the distinctive discharging mechanism that responds to an external sign stimulus. In the case of the poem and its ethological undertones, the displacing actions of the anthropocentric "I" stands as this stimulus.

The poem *Birds in the Church* by Cornelio F. Faigao is also scaffolded by the idea of ethology as it gives an image of birds moving from place to place searching for a home. With the birds standing "on sacred casements" and "searching for a home for peace unknown", the poem scaffolds two layers that affect the relationship between natural and cultural domains. In the poem, we can see how culture (the subject) shuns the potent ecosemiotic representations and dispositions of the birds. The result is that they are no longer respectful of the life and values of birds being part of the non-human domains of the environment. The action of the speaker is only typified by curiosity and mere questioning and the scaffold of how the birds react to this sightlessness by moving from areas of low diminishing assets to domains or regions with high or increasing resources. To quote this poem:

Fleet, nimble beings,
Birds in the church,
'Neath painted ceilings

Flying to perch

On sacred casements
Hallowed by prayer,
Solemnly soaring
Like hymns through air!

Airy-church goers,
Come you to pray?
To hear chants sweeter
Than woodland play?

Or come you here to
Seach for a home?
For peace unknown in
Glades where you roam?
(Abad, 1989)

The poem becomes scaffolded by the cognitive ethology of migration projecting it as a motivating factor seeking in nature primary resources such as food and nesting locations. The "supernatural intimacy and holism" (Devall and Sessions, 1985) can already be questioned as the "airy church-goers" search for a home. The inquisitive speaker in the poem is aware of these changes in the landscape as he declares "Through you, I know more myself and God." This can conceivably be read as a means of showing concern for the plight of these life forms and the destruction of their constructed environments and habitation structures such as wind farms, trees, and power lines. Cognizant of how the birds act upon their environment in this poem scaffolded by bird migration, the poem also can communicate, through the said scaffold, the high costs and perils of predation and the hunting of humans driven primarily by the accessibility of foods. The ethology that the signs in the poem stand as a language-like communication that speaks of the relationship between humans and birds. The migration of the birds implied by the poem can be read as made possible by the degrading methods and exercises of the people who are markedly armed with the anthropocentric mindset in ecological discourse.

Recognizing the effects of such practices, the migration of the birds becomes the communication as well of the threats that these animals are facing as they primarily strive for resources namely that of exhaustion brought by flying hundreds of miles during the sojourn, vulnerability to predators, pollution and exposure to lead poisoning and the destruction of crucial rest sites and food resources that they utilized for refueling their bodies in their journeys.

The hallowed character of nature and animals' evolutionary Fitness

In highlighting how life forms take on language-like communication of their own that can mold the environment, the biosemiotic landscape can assert the image of nature as powerfully loquacious. This representation of nature can be markedly and semiotically destructive. The behavior of the grasses in Cornelio F. Faigao's *Cogon Grass* vividly says that this entity is a complicated organism as it

is both a beauty and trouble for man and structures near large infestations. Looking at how these life forms act upon their environment in the poem, it becomes clear that the poem becomes supported by the scaffold of "fire ecology"—the discipline that looks at the interrelations between fire and various components in the ecosystem. The intense scaffold of "fire ecology" espousing "habitat loss" in this poem is evident in these lines:

> Tall cogon grass wind-swaying on a hill.
> It catches fire! Then quickly it invades
> The hills with burning feet and stabs the glades
> With daggers of vermilion flames that fill
> The ebon night, naught leaving but the lame
> Cold aspect of the hillsides cinder-scarred (Abad, 1989).

There is a clear insinuation in these lines of tragic ecology's notion of victimage leading to the statement of ecodisaster in this poem. Acting upon their environment creating destruction through fire, the language of these life forms affirms that these are fire-adapted species that allow the clampdown and eradication of natural vegetation. This is a validation of how the poem avers the tragic ecological images of plant and foliage reduction and the obliteration of ecological diversity and wildlife habitat. Be that as it may, the poem also discloses how the cogon grass participates in the formation of the biospherical imagination presenting nature as it guards itself against degradation. In the poem, the revered representation of nature also speaks of eco-consciousness made manifest as to how the grass spreads through rhizomes creating dense mats in pastures, forests, and ditches "reclothing the hills with magic greenery". In presenting this two-fold take in disclosing the biosemiotic landscape in the poem, the scaffold of "restoration" is also seen in the foreground of this poem whereby the cogon grass' "roots reflower"—a means of conversing that it can partake in the cycle of restoration embracing the idea of "biospherical cognizance." This is the awareness that places a strong premium on the safeguarding of the life force in the environment (Naess, 1973). Nature becomes a character on its own in this regard as nature itself is the one conserving such life force. This cogon grass in the poem conveys this claim:

> Yet cogon grass no red flames can devour;
> There is a sermon of submission sweet;
> Theirs is a tale of calm persistency;
> Ere a few suns have set, their roots reflower,
> Bring forth green song, and then with patient feet
> Reclothe the hills with magic greenery (Abad, 1989).

It becomes apparent that the scaffold of Faigao's *Cogon Grass* capitalized on the modeling of the environment from the perspective of fire ecology specifically that of destruction and restoration with an emphasis on revitalization affecting nature and culture relationships in the poem.

In further expanding the discourse on language-like communication of animal species, a different take on this communicative biosemiotic landscape is

espoused by Conrado V. Pedroche's *Spiders and Worms and* Jose Garcia Villa's *Bee? – Why, He's Roguery*. To cite Pedroche's poem:

> I saw two spiders spitting out long threads to the moon,
> but the moon was so high up in the sky
> that the silk threads fell to the ground.
> So the spiders wove a net on two slender twigs
> to catch the moon.
> In the evening, there were many dewdrops
> on the web, the spiders wove,
> and the spiders said We have caught many moons (Abad, 1989).

This is Villa's short poem:

> Bee?—why, he's Roguery!
> System—
> Author of Honey,
> Author of Buzz!
>
> A golden Drollery
> Over a stem—
> A camaraderie
> Of Petal and Fuzz!
>
> —A yellow Troubadour!
> A Romeo
> With scimitar—
> Just so! (Abad, 1989)

The clear imaging of Pedroche's spiders weaving "a net on two slender twigs", the worms "measuring off inches on the edge of the leaf" and Villa's bees being the "author of honey" creating "a golden drollery" strongly convey the scaffold or actions leaning towards evolutionary fitness—a significant means of highlighting how the environment of animals is shaped by the vista of survival and adaptation. This affirms the notion that emplacement is an essential factor to consider when speaking of survival. The immersed immensity of the animals in the poem establishes the umwelt of the ecopoetic process of establishing relations or familiarizing oneself with the environment (Zapf, 2016). In the poem *Spiders and Worms*, the behavior of the spiders resulting in the creation of web architectures, the worms gracefully feeding on organic matter and the production of nutrients by the sharp dealing of the bees in *Bees?* are the biological indications that they are well-fitted to their functions.

The flexible and modifying nature and disposition of animals markedly underscore the concept of mutualism. In biosemiotics, this is an iteration of the interactive consciousness created and transpiring between the environment and the disposition and philosophy of the human subjects. About this, we see the animals in the easily moving in concordance with their environment (Wheeler, 2006). This umwelt of fitness is also validated by the poem *Ants* with the titular

ants being projected as ecosystem engineers also highlighting the notion that they are semiotically competent organisms shown by a line from the poem: "a string of ebon marking the definite and pure industry". The poem conveys how these life-forms serve as ecosystem engineers who know how to partake in the discourse of ecological interrelations:

> A train, moving color of coal,
> Traverses the province of my room, here
> Where the day, abandoned, busily conceals
> Its calendar of hours collecting age (Abad, 1993).

Scaffolded by their remarkable self-organization, Carlos A. Angeles' *Ants* convey how they toil with their environment, structuring it to suit their needs, and as a result of this, there are remarkable effects on the manifestation and profusion of the spatial patterns of other species. As they work based on their "calendar of hours", they act upon their environment as they aerate the soils and interact with many other species. Their semiological interactions in the environment as asserted by the "whole race's antique hope" best achieve its valid destiny affirming the notion of biospherical egalitarianism (Naess, 1973). Armed with an "antenna of faith", the wholesome diligence becomes communicative of the influence of essential occurrences such as seed dispersal and nutrient cycling. The poem substantiates this by bringing into the picture the "honest toil" of the ants responsible for ensuring the aptness of their internal environment with the external ones thus ensuring the survival of their species. The way they act upon their environment, or their unique umwelt (one that is disclosed by soil engineering, creating avenues, and by being agents who toil for the reworking of soils), these ants can partake in modifying nature with their actions influencing soil nutrient cycling and biotic profiles affecting the anthropocentric and plant community which has a large portion of their bodies above-ground (Mayo, 2015).

The "honest toil" and "pure industry" of these ants become the umwelt that marks ecological health and function. Their "bioturbation" is the phenomenological experience of the animals that aid the Anthropocene in several important ways—the "honest toil" facilitating decomposition, aiding plants in the wild to thrive by harvesting seeds, and helping in circulating rainwater through the soul of the earth. The biosemiotic foreground of this poem extends the sphere of communication to smaller life forms disclosing the idea that their ethology, and not just human psyche and disposition, can essentially mold the environment through their semiological competence. In consonance with this, the poem also conveys regard for the environment. This idea affirms regard for the ants armed with their "antennae of faith" and "honest toil" worthy of "accolade and applause." The umwelt of these eusocial insects or cooperative broods can also clearly uphold the environmental ideology that upholds value and regard for the ecosystem as a way of establishing harmony between the Anthropocene and the environment (Yu and Lei, n.d.).

Expanding the discourse on Naess' "cognitive biophilia" with shades and scaffolds of anthrozoology, the poem by David Q. Quemada titled *To a Woman Saved from Drowning by a Tortoise* gives us shades of tragic ecology as it depicts the destructive capabilities of the environment leading the subject in the poem to

experience unprecedented wreckage. Capturing the tragic foreground, the poem captures the image of a woman drowning in the following lines:

> Sun and sea spray stung your back like angry bees.
> Salty thirst burned your lips, bacon-crisp.
> You swallowed the sea in spite of your willed silence
> And leaned to measure life with the breathing of the sea
> (Abad, 1993).

Acting upon the environment typified by the tremendous waves drowning the woman, the behavior pattern of the animal in the first stanza of the poem particularly that of adaptation, is further highlighted with the "solid" and "bravely green" shell becoming the symbol of "biophilia" connecting man with his environment. The tortoise's umwelt in this poem speaks of outrunning the dangers of the waters through the "scutes" or scales of the shells. This fitness with the environment becomes heightened when juxtaposed to the plight of the Anthropocene in the poem. The "moss-mantled but solid as land and as bravely green shell" of the tortoise projects the human-animal bond affirming the balance and correspondence between nature and culture. One can see how animals, or other life forms such as plants, birds, trees, and landscapes, create bonds to live in harmony (Mishra, 2016; Suresh, 2012). The language-like communication of adaptation or fitness of animal redeeming her from the "dark-green death" remarkably astounded the woman as she equates nature with God as "a burning bush" or as the "tortoise" who had saved her from drowning. This is a clear indication that the experience of disaster and the umwelt of adaptation has dualistically created layers of meaning that shape the biosemiotic landscape in the poem. The tortoise becomes the symbol of "perfect ecology" through behaviors of adaptation. In the poem, we see the connection of animals with human societies and the idea of "tragic ecology" conveying the central theme of the victimage of the woman through drowning "riding the waves of the like a roller coaster" and her ruminations on the density of the experience—an experience that oscillates between the seamless and the disastrous.

Ecosophy, speciesism, and the rhetoric of animality

When speaking of the connection between human and non-human domains, man's treatment and connection with animals also become a central trope to be underscored in the biosemiotic landscape. In ecocritical discourse, animals are seen to be vital elements and movers in human societies. Animals have remarkably influenced societies on micro and macro scales from the bacteria intricately working in our stomachs enabling the process of digestion to the large marauders that have hunted and preyed on humans (York and Mancus, 2013). The lives of people have been shaped by animals and their associated diversity. We recognize the importance of animals in ecocritical discourse. The hunter-gatherers, greatly sustain life as their very bodies become the material for the tools that can significantly nourish life. They are remarkable sites of material resources. They were the primary hub of energy before the prominence of fossil fuels. They were seen as the vital prime movers in an anthropocentric society resulting in the anthropocene raising and manipulating them in various ways possible.

Capitalizing on the ecocritical discourse, the way a man treats animals is a resilient springboard to highlight how their relationship molds the environment they are placed in. The ecocritical undertones of the poems take on a two-fold take underscoring the ecological concept of "ecosophy" (harmony or equilibrium) and "speciesism" (culture's thralldom of animals).

Maximo Ramos' *The Cobra* vividly captures an interloper's encounter with the titular snake. The anthropocentric interloper blinds himself to the "notion" that had troubled the snake in the knoll of knee-deep grass where they met in which the interloper declares that he was first citizen. Acting upon this troubling notion, the image of the snake in the poem becomes scaffolded by the ethology of territoriality resulting in the snake defending its territory from the meddling anthropocentric conspecific. These lines from the poem capture the aggressive encounter between the interloper (the "I" persona in the poem) and the cobra:

> I'd thought would make, since dry, a handy rod.
> He might have report that one this way
> Had come for treason, for when again I trod
> Across the grass, set up he was to slay:
> The hooded nape—the tongue and eyes afire—
> The oscillating diamonded crest—
> The coil about the grass that reared his ire
> To patterned height: his stern imperial best (Abad, 1989.

Recognizing the signifying danger of the "I" in the poem, the cobra concretely projects a graded series of behaviors typified by the aforementioned aggressive features. Acting upon its environment, the cobra's image is scaffolded by the very ethology of ritualized belligerence in defense of the sociographical area that he inhabits threatened by the busybody. The umwelt of the cobra in this poem becomes characterized by territoriality and defense—one that is deemed to be a working of the cobra's inherent characteristic. Placing the ecological equilibrium in disparity, the interloper mightily asserts his anthropocentric disposition and its concomitant speciesism as he "fought with flame" making the cobra "retire to his cool subterranean citadel." On the part of the interloper, the presentation of the environment in the poem also becomes imbued with anthropocentrism as the subject breaks the ideology of the stability of the coexistence of all organisms as he staunchly declares:

> I doubt he was entirely unaware
> That enemy as I could give him battle
> By distance shielded—maybe not a fair
> Arrangement, but his own attack was subtle (Abad, 1989)

In the poem, "speciesism" from the anthropocentric disposition is vividly asserted:

> I would reverse the rod and break his back
> With a single smash and white bolo chop him up
> Before he could unleash his coiled attack.
> (Some men were said on cobra soup to sup (Abad, 1989).

The disruption of the ecological balance is asserted in these lines. The ecosophy is no longer seen to be actualizing as anthropocentrism no longer permits the creation of a favorable ecosystem. There is the implication that human activities do not function to ensure the stability of life forms in the environment. The poem, scaffolded by the cobra's ethology, opens the discourse on how anthropocentrism shapes the ecological balance and existence of the world. *The Cobra* can also affirm the questioning of the state of dynamic equilibrium that is no longer remaining stable. "Breaking the snake's back with a single smash and with the bolo to chop him up" making the snake capitalize and project his bellicose ethology is an interrogation of this natural balance. In the study of ecosystems, the sudden death of species, the cobra in the case of the poem, affects the balance about the fixed balance in the numbers of species dispersed in a particular ecosystem.

In Jose Ma. In Sison's *The Woman and the Eagle*, the interaction between the human subjects and the strange eagle is rendered as a sensorium for the specific discourse on habitat loss posing a significant threat to various life forms in the environment. Human consumption is a resilient factor to consider as it perpetually ushers in other hallmarks of industrial development such as agriculture, roads, and housing (World Wide Fund for Nature, 2019). The dominance of the human subject is to be underscored in this poem. This is the domination that declares the anthropocentric ideology that nature is a revitalizing force, a groundwork for survival resulting in them not "to drift in darkness." Such dynamics form an essential part of the cultural project. We see here the degradation and reduction of nature, and culture itself is seen prevailing in the poem:

> But look, it has a wound of its own.
> Hurry up, aim the sharpened arrow
> And bend our strong narra bow.
> We despise the eagle's accursed shadow
> Cast on the woman and the boat.
>
> We shall not drift in darkness.
> We know our seas and islands well.
> Our will is firm and we know the way.
> We can prevail against this bird of prey,
> As our neighbors have done in the fray (Abad, 1993).

In modeling the environment in literature, biosemiotics looks at how the smallest life-forms affect the environment. Fidel D. de Castro's *House Mouse* zeroes in on what rats do in the ecosystem. Supported once again by the ethology of evolutionary fitness allowing them to easily adapt to their environments, this poem shows the role and disposition of rats in the ecosystem. Acting upon the environment where they are placed in, the poem attests to the fact that these are opportunistic eaters and foragers:

> First, a ball of cotton on
> The shelf; then, he begins to gnaw,

Gnaw the bindings off books,
Reducing Plato, Cervantes, or Gogol
To flint-ticking sounds.

Gum, I think, he likes and melon
Rind; and when the moon through
The window gets in, he nibbles at
A glint; he glints like a pebble (Abad, 1989).

The poem also projects the very idea that they are an essential part of the environment, or the ecosystem at large as reflected in how they can easily fit with their various environs as the speaker says:

He is no longer there; nothing stirs
But his shape it seems, and around it
Quivers the air, and then the house
With his muscle and nerve (Abad, 1989).

The scaffold of the mouse's easy adaptability and evolutionary fitness of the mouse affirms the idea of connectedness as it also shapes the environment for the presence of such a creature also plays a role in maintaining delicate stability. Recognizing the semiology of fitness in this poem, losing the mouse can be unfavorable to the entire system. With its "muscle and nerve", the mouse plays host and prey to the other life forms in the environment. This idea of connectedness espoused by House Mouse is a validation of the so-called "rhetoric of animality" as affirmed by *Picturing the Beast* (Baker, 1993). This is a concept that recognizes the worth of all elements of nature.

Making sense of the evolutionary landscape of the poems and the interrelation between natural and cultural elements, the poems usher in the discourses on ecological equilibrium (ecosophy) and disparity (speciesism). Looking at how the animals convey their respective ethologies (umwelt), we see how the animals perform their particular roles in the ecosystem defending their spaces and territories in the ecosystem from the anthropocentric conspecific and how this presence and intervention can shackle the stability of the co-existence of life-forms in the environment. Acting upon their environments and in displaying their umwelts, particularly that of ethology and the human social system, the connectedness and disconnectedness are made apparent unveiling how animals perform their roles that maintain the ecological equilibrium and how the cultural disposition of man affects this balance. Such are the forces that constantly waver in the evolutionary landscape of biosemiotic criticism.

Conclusion

In this paper, the tenets of biosemiotics in the selected poems are further highlighted capitalizing on the tenets of ecology. With these tenets, biosemiotics affirms the view that sign processes can transpire inside and outside of human culture at different levels. These can include the processes emerging inside an organism transpiring at the intra- and intercellular levels, the signals that animals emit in the communication process, and the semiotic regulations in the ecosystems

and nature upheld by both humans and animals. The poems generate and affirm the possible discourses of culture-nature connections, and with these, they become scaffolds for cultural meanings (Hoffmeyer, 2008). These also support the biosemiotic foregrounding of the poems. The notion of the Umwelt (experience and emplacement) in the selected poems, pronounces the relationship of an organism with the environment as molded by the species-specific sensitive, discerning, and intellectual capacities. The meanings and insights produced are structured and systematized by the emplacement of the organism which covers the manifold means of how the organism links to natural and cultural units in the environment.

Cognizant of these forces, the culture-nature relationships in the selected poems from *A Man of Earth* and *A Native Clearing*, shaped by various ecocritical forces, generate tropes that are grounded and contoured by the biophiliac, anthropocentric, and ethological modes of representation. The jeopardies of the anthropocentrism in the biosemiotic foreground of the poems show how the environment is semiotically regulated leading to the very questioning and collapse of the notion of holism and systems thinking affecting animal ethology and adaptability. However, the notion of the biophiliac counters such a downfall as it creates a network of semiotic relations that oscillate between the notions of perfect ecology and tragic ecology making possible how lower life connect with human and how man tries to make sense of this affinity operating on natural heights. With such polarity, the ecocritical undertones of the poems take on a two-fold take underscoring the ecological concepts of "ecosophy" and "speciesism." The former speaks of the idea of connectedness while the latter affirms disconnectedness. Expanding the discourse on relations and asseverations, the inner milieu and machinations of the human organism is also a factor to examine as one looks into how the environment in literature is modeled. The representations of the human body and its direct and indirect semiotic means of connecting to the environment serve as the foundations by which we can understand the intricacies of the ecocritical nexus laying down the groundwork for understanding the complexities of ecocentrism and anthropocentrism (Maran, 2016).

Grounded on the ethological, biosemiotics also give voice to animals as the poems show how lower life forms also contribute to the idea of ecological ecosophy or stability. This is achieved through the life forms' semiology of survivability whereby they consume decaying organic matter or become deterministic subjects as they fight for their survival. Finally, we recognize that biosemiotics outlooks, dispositions, and configurations become offshoots of the workings of environmental emplacement and situtatedness in biosemiotic criticism. These are the biosemiotic modes of representation in the selected poems that can convey the ecological principles of and regard for life practices, developments, alterations, and spatial awareness and sensibilities in the environment.

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