

An Ecolinguistic, Scientific, and Serresian Interpretation of Communication: The Importance of (Re)-Conceptualizing Language From a More Ecocentric Perspective

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I. Introduction

Recent scientific discoveries suggest that ‘animal’ communication might be much more complicated than many proponents of human exceptionalism would like to believe. Moreover, numerous contemporary researchers from several divergent disciplines have also documented that non-human languages, or the vocalizations of some other species themselves, are extremely sophisticated. The purpose of this interdisciplinary essay is to (re)-examine anthropocentric linguistic paradigms from the lens of modern science, the budding field of ecolinguistics, and the complex philosophy of Michel Serres. In the spirit of Serres, this exploration will unapologetically transcend traditional disciplinary boundaries in an effort to think more deeply about language and communication. Additionally, despite its inherent limitations, this project endeavors to foster a meaningful academic dialogue which will encourage scholars from various fields to contribute to this conversation. Furthermore, this investigation will underscore why the controversial subject of non-human languages matters in an era increasingly defined by an ecological calamity of epic proportions that intensifies with each passing day on a global scale.

II. Brief Overview of Ecolinguistics and Contemporary Scientific Research Related to Non-Human Communication

The emerging discipline of ecolinguistics is “not a mere branch of applied linguistics” (Do Couto 127). This “relatively new” and promising field is also closely related to ecocriticism and environmental philosophy (De Couto 127). Similar to the aforementioned research areas, the scientific affinities of ecolinguists are clearly evident. Contemporary scientific studies which probe the nuances of non-human communication undergird the theoretical frameworks that

ecolinguists have applied to language itself. Based on empirical data obtained from the hard sciences, ecolinguists hypothesize that “the suggested gulf” between human languages and the linguistic systems of other organisms “may not be as wide as often assumed” (Townsend & Manser 6; 6). However, although “There are exciting times ahead in animal communication,” both ecolinguists and scientists readily admit that there is a lot more work to be done in order to have a more complete picture of exactly how much symbolic information is truly being exchanged by other life forms on this planet (Higham & Hebets 1388).

In spite of the fact that many lingering questions still have yet to be definitively answered by the scientific and linguistic community regarding non-human communication, preliminary findings have already started to debunk certain assumptions related to human language. Specifically, studies related to numerous species including dolphins (e.g. Flack, Ryabko & Reznikova, Janik & Sayigh), manatees (O’Sheah & Poché), marmosets (e.g. Wilson et al.), ants (e.g. Reznikova), chimpanzees (e.g. Zuberbühler, Yerkes), baboons (e.g. Maciej et al.), chickadees (e.g. Freeberg, Harvey) squirrel monkeys (e.g. McCowan, Doyle, Hanser) tree shrews (e.g. Sschehka & Zimmerman), honeybees (e.g. Reznikova), and sciurid rodents (e.g. Pollard & Blumstein) have rather unequivocally proven that other organisms are capable of ‘language-like’ behavior that was previously only attributed to *Homo sapiens*. As Jessica Flack explains, “A hallmark of human communication is vocal turn taking. Until recently, turn taking was thought to be unique to humans but new data indicate that marmosets, a New World monkey, takes turns when vocalizing, too” (R967). Citing earlier studies such as the one conducted by Takahashi, Narayanan, and Ghazanfar, Flack reveals that some communicative characteristics which have traditionally been theorized to exist only in human languages have now been identified in the elaborate linguistic systems of other organisms. These discoveries lead Flack to question if

human beings are really that exceptional at all in comparison to the remainder of the universe from both a linguistic and evolutionary perspective.

In addition to turn taking, several empirical investigations also appear to disprove the notion that syntax is only found in human languages. Numerous studies imply that other species are capable of respecting grammatical rules and understanding their function in human communication. Moreover, mounting evidence also suggests that grammar plays an important role in the linguistic systems of other life forms (e.g. Berwick et al, Honda & Okanoya). In addition to noting that marmoset monkeys are extremely adept at deciphering artificial grammar (AG) paradigms derived from human utterances and applying this knowledge to a given context, Wilson et al. discuss the “syntax-like” structure which is emblematic of songbird communication (18825). The aforementioned researchers assert that certain songbirds have an extensive vocal repertoire which allows them to produce a plethora of different sounds. Additionally, these vocalizations are combined in such complex and systematic ways that they seem to suggest a recognizable syntactical pattern.

Even though the empirical data obtained from marmosets and songbirds is striking, perhaps the sizeable body of research dedicated to dolphin communication is the most compelling example which urges us to reconsider homocentric linguistic paradigms. Dolphins are highly intelligent and social creatures living in an aquatic environment in which the symbolic exchange of messages through vocalizations is very advantageous. Given their advanced cognitive abilities and vocal flexibility, which allows them to produce a wide array of phonemic units of sound, dolphins are an ideal subject for studies that investigate the depths of animal communication. Summarizing the results of nearly half a century of research which examines the intricacies of dolphin communication, Vincent Janik affirms, “Vocal learning has three

distinct forms: production, comprehension, and usage learning, and all three can be found in bottlenose dolphins” (“cognitive skills” 157). For Janik, these studies provide further evidence that certain cognitive and linguistic capabilities, which supposedly only exist in *Homo sapiens* according to a traditional view of linguistics, might not be unique to the human population at all. If Janik is right, then perhaps it is time to remove our species from the ontological pedestal upon which we have placed ourselves as the great miracle of existence.

In a separate article, Vincent Janik and Laela Sayigh explain, “delphinid communication is complex, with animals using large repertoires of whistles, clicks and pulsed sounds that are influenced by vocal learning” (481). This observation, supported by scientific inquiry, leads Janik to ponder whether vocal communication in all species including humans has more to do with environmental, evolutionary, and social factors rather than cognitive and linguistic abilities. Living in aquatic societies that are epitomized by a high degree of social cooperation and interaction, Janik hypothesizes that these mammals “require a finely tuned communication system [...] to keep track of individuals¹ and their relationships” (157).

Janik and Sayigh’s interpretations of decades of research about dolphin communication could be applied to two different human languages. For those who are familiar with Silbo Gomero² and the Hadza click language,³ the implications of Janik and Sayigh’s studies cannot be overstated. Is the elaborate system of whistles and clicks used by dolphins really that different from the linguistic discourse of these two minority languages? Furthermore, several researchers have speculated that Silbo Gomero is comprised of whistling sounds because of the terrain in

¹ It should be noted that every bottlenose dolphin creates its own unique “signature whistle” early in life which identifies it as an individual living within the confines of a larger community (Janik & Sayigh 489). This novel

² For a more detailed analysis of this language which transcends the pragmatic scope of this essay, see Busnel, R.G., and A. Classe. *Whistled Languages*. New York: Springer, 1976.

³ See Edenmyr, Niklas. “The Semantics of Hadza Gender Assignment: A Few Notes from the Field.” *Africa & Asia* 4: 3-19.

which this language is spoken. In the environment in which they live, these indigenous peoples from the Canary Islands originally needed to create a complex form of communication that was capable of traveling great distances.

In the same vein, dolphins have constructed a linguistic system over time that reflects the limitations of effectively transmitting symbolic information underwater. Dolphin communication also takes advantage of the vocal versatility that this species possesses. When examined through the lens of dolphin research, Silbo Gomero and the Hadza click language implore us to reflect upon what early human languages might have been like. Instead of being the product of superior cognitive and linguistic prowess, modern human languages could have gradually evolved in a different direction from the linguistic systems of other organisms due to environmental and social factors.⁴

The social complexity hypothesis, developed by scientists and researchers from multiple disciplines that examine information theory, could also help to shed light on the evolutionary origins of human language. In addition to the aforementioned environmental considerations that cast doubts upon anthropocentric explanations regarding the uniqueness of communication between *Homo sapiens*, social factors appear to play a key role as well. Recent empirical studies which explore how numerous species communicate amongst themselves suggest that social animals like dolphins and humans exchange more ‘language-like’ information than solitary organisms. As Kimberly Pollard and Daniel Blumstein explain, “Complexity in communication can be defined analogously to complexity in sociality” (1869). Pollard and Blumstein further clarify, “Attributes of social complexity may thus generate a need for animals to exhibit different

⁴ It is surprising that Janik and Sayigh’s research has yet to generate comparative studies between these two autochthonous languages and the sophisticated linguistic systems of dolphins. Such comparative studies could enrich our knowledge of both human and non-human languages. Although information theory correctly notes that cracking the linguistic codes of other organisms is problematic at best, invaluable inferences could be made regarding the quantity of information that is exchanged in one system versus another.

types of communicative complexity” (1871). According to the social complexity theory, perhaps communication, linguistic and paralinguistic, is fairly limited in certain life forms that do not need to interact with each other on a regular basis for rather pragmatic reasons. Conversely, species that exhibit a significant amount of cooperation must have more intricate and efficient ways of communicating in order for their respective societies to function.

Based on large amounts of empirical data from his studies involving Carolina chickadees, Todd Freeberg has become a proponent of the social complexity hypothesis. After underscoring that “the social-complexity hypothesis is a major component in arguments regarding the origins of human language,” Freeberg concludes, “The current results provide the first experimental support for the social-complexity hypothesis for communication in animal species and may help inform hypotheses regarding language origins” (557; 560). If additional research continues to replicate Freeberg’s results in other social organisms, these studies could be the final *coup de grâce* that disproves human exceptionalism once and for all. The social complexity hypothesis unequivocally posits that human languages gradually became more complex when our evolutionary ancestors started living in larger groups which necessitated greater communicative collaboration. Given that modern humans are not the only species that live in intricate societies, the social complexity hypothesis beckons us to (re)-envision what animal communication might entail.

III. Brief Overview of the Interdisciplinary Philosophy of Michel Serres

The philosophy of Michel Serres is extremely diverse because this unorthodox philosopher incessantly transgresses disciplinary demarcations seamlessly blending philosophy, literature, religion, mythology, and history. Due to his unwavering conviction that knowledge should not be over-compartmentalized or placed into a little box, Serres often refuses to respect disciplinary

divisions (Zembylas 477). Similar to the aforementioned ecolinguists whose linguistic theories are informed by recent discoveries, Serres incorporates scientific erudition into a larger philosophical framework that endeavors to understand the specific place of humanity in an interconnected and interdependent universe to which every species is inextricably linked. This unconventional thinker has yet to receive the same accolades as other philosophers such as Derrida, Foucault, and Lacan (Brown “The Theatre” 215). Numerous scholars have noted that this provocative philosopher has never quite been able to penetrate the mainstream (Tucker 149).

Although it is difficult to summarize Serres’s myriad of contributions to multiple disciplines, the complex nature of communication is a salient theme that permeates his unified philosophical project. For instance, Serres probes the nuances and paradoxes of communication in several works like *Hermès*,⁵ *Le Parasite*, and *La Légende des anges*. This particular aspect of Serres’s philosophy is also the most relevant to the present investigation. Throughout his prolific career from 1968 to the present, Serres maintains that communication is not limited to *Homo sapiens*. Based on his deep understanding of chaos theory, quantum physics, and ecology, Serres deconstructs any simplistic theory of communication that fails to take into account “le bruit de fond” or the vocalizations of other life forms with which we share this common space (*Biogée* 98). Serres’s epistemological quest intersects with the efforts of the aforementioned scientists and ecolinguists who strive to (re)-conceptualize language itself by applying principles derived from modern science.

IV. Reading Serres’s Philosophy from an Ecolinguistic and Scientific Lens The Omnipresence of Other Cosmic Languages

Questioning the pervasive notion that language is a uniquely human trait, Serres declares in a speech related to technology, “Je ne connais pas d’être vivant dont on ne puisse pas dire qu’il

⁵ It should be noted that there are five different volumes entitled *Hermès*, the first of which was published in 1968.

stocke, traite, émet et reçoit de l'information" / 'I don't know of any living being that doesn't also stockpile, negotiate, emit and receive information' (Zimmerman n.p.; my trans.). Offering a concrete example that non-human communication is much more complicated than it might initially seem, Serres explains, "Le rouge-gorge dispose d'un répertoire énorme: plus de mille chant divers [...] Les mâles de certaines espèces variant à chaque saison le chant de leur cour d'amour; je connais peu de vils dragueurs capables de tels renouvellements" / 'Robins have an enormous repertoire at their disposal: more than a thousand different songs [...] Males of certain species vary the songs of their courting rituals each season; I know very few pick-up artists who are capable of doing this' (*Musique* 57-58; my trans.). In spite of the evident humor intentionally designed to soften the tone, Serres is asking serious questions in this passage. Evidently familiar with the aforementioned research related to songbirds, Serres affirms that the diversity of the sounds produced by certain bird species runs counter to homocentric ideologies that promote human exceptionalism. According to Serres, the sheer amount of distinct phonemes produced by songbirds implies that many non-human linguistic paradigms are very elaborate depending on the environment in which the given organism lives. Although we will never be able to decipher the code of these linguistic systems in order to know exactly what these other animals are saying to each other, Serres asserts that listening to these astonishing phonemic variations allows us to catch a small glimpse of the veritable complexity of various types of animal communication.

In *La Légende des anges*, Serres directly takes aim at human exceptionalism. After revealing that "les Anges ne prennent pas toujours la forme humaine, mais se dissimulent dans les flux de la nature," the narrator asserts, "Quelle prétention! Les dauphins et les abeilles communiquent, ainsi que les fourmis, les vents et les courant de la mer" / 'What pretentiousness! Dolphins and bees communicate, in addition to ants, the wind and sea currents' (25; my trans.). First, in *La*

Légende des anges, the ‘angels’ to which the narrator refers are messengers. In this experimental and lyrical text which mixes several genres, Serres affirms that anthropocentric definitions of language and communication draw their force from wishful thinking rather than empirical evidence. For this reason, it is not by chance that Serres mentions the very same species including birds, dolphins, ants, and bees⁶ which have compelled scientists to take a closer look at how other animals communicate.

This passage from *La Légende des anges* is reminiscent of the section of *Le Parasite* entitled “Le travail” / ‘Work.’ Although the author does not specifically focus on language in this particular part of this work, Serres’s comments about bees in *Le Parasite* help us to understand his later reflections in *La Légende des anges*. When these two distinct passages are placed together, they seem to mirror the basic tenets of the social complexity hypothesis. In reference to the high degree of social cooperation which is essential for bees to thrive as a collective group, the author muses, “les hommes ne sont pas les seuls à travailler. Nous ne sommes jamais si exceptionnels [...] Je ne vois plus la différence entre l’abeille et l’architecte” / ‘Humans are not the only ones that work. We are never this exceptional [...] I no longer see the difference between a bee and an architect’ (117-118; my trans.). When examined as part of a cohesive philosophical project, Serres’s fascination with bees in *La Légende des anges* and *Le Parasite* deconstructs anthropocentrism from two different but complimentary angles. After reading *Le Parasite* which highlights the ingenuity and collaboration required to create such extremely elaborate edifices, the reader understands why the author asserts that bees endlessly exchange symbolic messages in *La Légende des anges*. Similar to human languages, bee communication

⁶ Ryabko and Reznikova note that the ‘honeybee dance language’ is extremely complex.

is a byproduct of the social complexity which is indicative of the environment in which these organisms live.

For Serres, languages, human and otherwise, are inseparable from the “world in its complex coils” (Polizzi & Marmarelli 264). In *Biogée*, Serres not only attempts to make the voice of the imperiled planet heard through the medium of human languages, but the philosopher also encourages the modern subject to listen to the world of things to which everything is connected. In other words, Serres endeavors to speak for other organisms that cannot defend themselves in an effort to protect all of the intricate threads that comprise the delicate web of life into which our saga is also woven. While simultaneously trying to articulate the nefarious effects of human-induced cosmic suffering, Serres theorizes that we can learn a lot about the biosphere (i.e. *Biogée*) and our small place in it by listening.

Underscoring the importance of being attentive to the ubiquitous messages of non-human languages, Serres affirms, “toutes choses [...] stockent et traitent de l’information, et, codantes, en reçoivent d’autres et la transmettent à d’autres. D’une oreille toute rationnelle, j’intercepte-en langue dendre-le dialogue chêne-tilleul” / ‘everything stockpiles and negotiates information through codes, receiving them and transmitting them to others. With my completely rational ear, I am intercepting in the Dender (river) language a dialogue between an oak tree and a lime tree’ (*Biogée* 115; my trans.). The author reiterates, “Qui jase de concert ? Les choses du monde. Qui parle au total? La Biogée soi-meme” / ‘Who is causing this chatter? The things of the world. Who is talking? Biogea herself’ (*Biogée* 116; my trans.). In *Biogée*, Serres asserts that the primordial sounds of the earth, which have existed since the big bang set various cycles into motion approximately four and a half billion years ago, should not be dismissed as insignificant background noise.

Similar to ecolinguists, the philosopher insists that these other subjects are communicating with each other by exchanging extremely sophisticated symbolic codes. Like humans, other life forms engage in ‘language-like’ activity in order to make sense out of the world into which their species was randomly tossed by indifferent cosmic forces long ago.⁷ Our comprehension of the linguistic codes of other organisms is destined to be fragmented. However, this inability to decipher the precise content of these omnipresent messages does not mean that *Homo sapiens* are the only life forms that possess the necessary cognitive and linguistic skills to send and receive symbolic information. In *Biogée*, Serres appears to embrace the same linguistic principles as the aforementioned researchers who use information theory as a theoretical tool for understanding the complexity of animal communication in its natural environment. The narrator of *Biogée* does not claim to know exactly what various species are attempting to convey to each other or to those around them. Yet, he realizes that the astounding quantity of information exchanged by other sentient beings, in addition to their extended vocal repertoires, refutes homocentric linguistic logic. As a later section of this essay will address, the narrator invites the reader to speculate about what these other heteroglossic voices *might be* trying to tell us. In this regard, *Biogée* is a multi-faceted philosophical text written by an author with both strong scientific and poetic sensibilities.

The Deleterious Effects of Parasitic Noise

In numerous works, Serres contends that too much parasitic noise is what prevents the modern subject from hearing other cosmic languages and realizing just how complex these symbolic forms of communication truly are. Decrying the devastating effects of rapid industrialization, globalization, excessive consumption, and the modern lifestyle, Serres explains

⁷ This point will be further addressed in a later section of the essay.

in an interview, “I mention silence in the common or garden sense, and I argue that it in our world it no longer exists. It no longer exists because in the open spaces of the country or the sea, where silence once reigned, motors and the media have filled it with noise. We have to fight against the power of noise, which is immense and frightening” (Mortley 56). In this conversation with Raoul Mortley, Serres asserts that the pervasiveness of parasitic static noise has rendered authentic communication difficult in the modern world. Serres theorizes that modern man is incessantly bombarded by artificial simulacra disseminated to us by the mainstream media through a plethora of digital screens. Despite their evident utility, Serres maintains that our addiction to these devices has left us vulnerable to the imposition of a filtered hyper-reality which is quite divorced from the fundamental material realities which bind us to the universe.

In *La Légende des anges*, Serres expresses his disquieting anxiety related to the ubiquitous noise of media saturation and its consumerist messages which are void of any real meaning outside of a banal, exploitative code conceived to manipulate the masses into acquiring the latest products. Wondering if it is even still possible to find a space that has not been tainted by the ‘bad angels’ who endlessly disseminate their simplistic ideology on a global scale, the narrator declares, “Nos messageries touchent désormais de grandes populations [...] Le globe tend à devenir une seule ville messagère” / ‘Our information networks have now affected large populations [...] the whole globe is headed in the direction of becoming a single (global) village’ (*La Légende des anges* 50-51; my trans.). Similar to Baudrillard, Serres argues that both meaning and reality are on the verge of disappearing because nothing seems to exist outside of the operational logic of seductive simulations that inundate us from all sides.

As the narrator of *La Légende des anges* explains, “Bientôt, Villeneuve des anges ne produira qu’un seul spectacle [...] Nul ne quitte l’intérieur: de l’hôtel, du bus, de la gare, de l’avion ni de l’hermétisme qui protège les messages: comme tout à l’heure pour les représentations, Villeneuve n’a pas d’extérieur” / ‘Soon, Villeneuve des anges will produce only one spectacle [...] Nothing will leave the inside: from the hotel, the bus, the train station, the plane nor the hermeticism that protects the messages: just like we were saying a little while ago about representations, Villeneuve has no outside’ (55-56; my trans.). Serres’s profound apprehension concerning the advent of hyper-reality in *La Légende des anges* adds another layer to his theories about communication. The philosopher unequivocally implies that symbolic forms of communication in consumer society have become distorted by the omnipresence of simulations which are grounded in hyper-reality. Given that these artificial simulacra have transcended the real and deeply embedded themselves in the linguistic codes that we regularly exchange, Serres asserts that it is becoming increasingly difficult to exchange anything of real significance in human languages. If verbal communication amongst human beings is indeed as problematic as Serres suggests in consumer republics, then the reader must ponder how it is possible to listen to other languages when our own voice has been stifled to such an extent by the realm of simulacra.

Highlighting his concerns that there appears to be no escape from the empty, hegemonic, consumerist signs which now concretize our very existence, Serres laments, “Il n’existe plus un seul recoin du monde [...] sous la terre ou dans les eaux, parmi les forêts primitives ou au centre du désert, qui ne s’étouffe, englouti, sous l’ordure du bruit [...] Il ne reste plus une place, un rocher, un coin [...] que les médias ne contrôlent de leur noise” / ‘There no longer exists a single corner in the world [...] underneath the earth or in the waters, amongst the primitive forests or in the middle of the desert, that is not suffocating and engulfed underneath the trash of this noise

[...] There is no longer a place, a rock, a corner [...] that the media does not control with its noise' (*Les Cinq Sens* 127; 132; my trans.). In this passage, Serres posits that the emergence of hyper-reality rendered possible by the corporate media has radically altered the dynamics of symbolic exchange in contemporary human civilizations. Due to the ubiquity of enticing simulacra which conceal a narcissistic, anthropocentric fantasy structure with no basis in concrete reality whatsoever, Serres affirms that all of our representational systems including language itself are on the brink of collapsing entirely.

This failure further exacerbates the problem of attempting to understand the complexities of other forms of animal communication. For Serres, human communication has never been perfect by any stretch of the imagination.⁸ As the philosopher underscores in *Le Parasite*, "Il n'y a pas de système sans parasite [...] Je veux penser sans erreur, communiquer sans parasite [...]. Pourtant, nous ne connaissons pas de système qui fonctionne à la perfection [...] ça marche parce que ça ne marche pas" / 'There is no system without a parasite [...] I would like to think that I can communicate without a parasite [...] However, we do not know any system that works to perfection [...] it works precisely because it doesn't work' (21; 22; my trans.). In *Le Parasite*, it is evident that Serres does not "posit the existence of some ideal form of communication where the signal would be entirely transparent subject to no form of mediation or transformation" (Brown "Science, Translation, and the Logic of the Parasite" 7). Nonetheless, despite the imperfections of linguistic systems that paradoxically make them work, Serres theorizes that

⁸ Numerous scholars have noted that although Serres often asserts that too much noise prevents symbolic messages from being successfully exchanged, the philosopher also maintains that what he calls static noise is a necessary component of communication. According to Serres, without a certain amount of parasitic noise, there would be no communication at all. For a more comprehensive explanation of Serres's nuanced metaphor of the parasite as it relates to language, see Brown, Steve. "Michel Serres: Science, Translation and the Logic of the Parasite." *Theory, Culture & Society* 19(3): 1-27.; and Brian O'Keefe. "Of Lice and Men: A Review of *The Parasite*." *American Book Review* Jan.-Feb. 2009 9-10; 28.

symbolic exchange seems to have been eroded to such an alarming level that it might serve little purpose at all with the exception of indoctrinating consumer citizens.

The Importance of Listening to Other Cosmic Voices

After outlining how modern society has numbed our senses by filling our lives with meaningless static noise thereby preventing us from recognizing the complexity of animal communication, Serres explains why it is vital to listen to other cosmic voices. In several different works, it becomes apparent that this effort to (re)-establish a type of rudimentary dialogue with the rest of the material universe is linked to an epistemological quest. Serres is a harsh critic of “philosophies that close their eyes to the sensible world and listen only to (human) language” because he steadfastly maintains that the origin of true knowledge is exploring “the complex threads that unite the local and the global”⁹ (Salisbury 43; Polizzi & Marmarelli 253). For Serres, understanding how the universe operates including our connection to the larger cosmic whole leads to a greater sense of self-actualization. As Niran Abbas highlights, Serres’s ecocentric philosophy stresses the importance of “knowing who and what we are in relation to the world” (2). In *Les Cinq Sens*, it is only after (re)-connecting himself to the cosmic forces of which he realizes that his species is a minute part that the narrator is able to find possible answers to the existential question “Qui suis-je?” / ‘Who am I?’ (283; my trans.).

In *Musique*, Serres urges the modern subject to remove all of the physical, ideological, and hyper-real barriers that prevent us from having a direct, sensorial communion with the biosphere. As the title of this eclectic work implies, the philosopher lauds musicality in all of its divergent forms. In addition to exploring the beauty of traditional genres, Serres probes the ‘musical’

⁹ Confessing that his goal is to create a radically different type of philosophy that explores these interlinkages which sustain all abundant life on this planet, Serres explains, “La philosophie à venir du mélange connecte le global et le local, iréniquement, et suppose une autre ontologie” / ‘The philosophy resulting from this mixture connects the global and the local irenicly and it implies another ontology’ (*Les Cinq Sens* 283; my trans.).

sonorities of the organic cycles which have been endlessly (re)-creating life from recycled, material particles for billions of years. Openly revealing the philosophical implications of this interdisciplinary project which compels us to listen attentively to the natural rhythms and vibrations of the cosmos, Serres affirms, “J’évoque le rêve, poétique encore, d’une épistémologie. Puis-je construire la connaissance à partir de cette entente. Comment l’oreille connaît-elle? Et comment connaît notre peau, vibrant des autres et du Monde, elle aussi” / ‘I am evoking a poetic dream of another epistemology. Can I construct knowledge starting from this harmony? How does the ear understand? And how does our skin, vibrating along with others and the world, understand as well?’ (*Musique* 89; my trans.). For Serres, our sensorial faculties are vital organs that allow us to have a more intimate rapport with the greater Chain of Being to which everything is linked. For this reason, the philosopher implores the reader to taste, touch, feel, hear, and see unfiltered, material reality.

Underscoring that the sensorial ecstasy triggered by these cosmic nuptials¹⁰ should be interpreted as a spiritual and philosophical exercise, the narrator explains, “Ainsi convient-il de se faire musicien pour mieux habiter son corps, pour mieux vivre sa vie, pour prétendre enfin au statut d’être-au-monde [...] Universelle, la Musique entraîne la vie et les corps aux rythmes des choses du monde” / ‘Thus, we should agree that one must be a musician in order to better live inside of one’s body, to better live one’s life, in order to finally attain a way of being in the world [...] Universally, music trains us for life and puts bodies into rhythm with the world of things’ (68; my trans.). A close reading of *Musique* reveals that this recent text is not really about music at all. In *Musique*, the narrator recounts the universal story of existence starting with the

¹⁰ I am using this expression in the same sense that Albert Camus employs it in his lyrical collection of essays entitled *Noces*. In *Les Cinq Sens*, the Serresian narrator describes his efforts to fuse with the material universe as a union or a marriage. Specifically, see the passages in which Serres (re)-appropriates the metaphor of the Eucharist to explain what such an elemental communion entails (82-83).

elemental forces that emerged from the primordial soup to generate all life. Without the cyclical musical refrains to which the narrator refers, which are part of the ‘grand récit’¹¹ that initially propelled everything into existence, life as we know it would not exist on this planet. For Serres, a crucial element of the epistemological search for knowledge and meaning is to rediscover one’s place in the larger entity to which we belong. This epistemological quest often induces a type of cosmogonic reverie which explores the ecological laws that govern the existence of every creature that has ever roamed this biosphere including *Homo sapiens*.

In *Musique*, Serres adamantly maintains that this universal narrative, which predates the appearance of humankind by eons, is the beginning of wisdom itself. Moreover, the narrator also identifies the melodic noises made by all of the earth’s sentient and non-sentient beings as languages. After highlighting the complexity and diversity of these non-human vocalizations in the world of things to which we have become utterly detached in the modern world, Serres interrogates the reader as follows: “Des bruits de la terre [...] du rugissement des animaux à la Musique, à la langue et au savoir, une chaîne épistémologique s’annonce, commence et se casse, manquée. Nous n’entendons plus le Monde, ni la foule, ni le corps. Frères philosophes, pourquoi n’écoutez-vous plus les choses? Pourquoi n’entendez-vous pas la Musique de la Biogée” / ‘The sounds of the earth [...] from the howling of animals to music, to language and knowledge, an epistemological chain reveals itself, starts and breaks up, lost. We no longer hear the world, nor the crowd, nor the body. Brothers of philosophy, why do you no longer listen to things? Why don’t you listen to Biogea’s music’ (*Musique* 96; my trans.). As in *Biogée* and *La Légende des anges*, Serres recognizes the presence of other languages in *Musique*.

¹¹ An expression often employed by Serres in numerous works.

Instead of turning our back on these other cosmic voices assuming that these non-human utterances are inconsequential background noise that have nothing to offer human societies, Serres emphasizes the epistemological value of this “bruit de fond” / ‘background noise’ (*Musique* 13; my trans.). According to Serres, the earth is replete with many different sorts of languages that must be valorized. Even if we are unable to crack the linguistic codes of non-human languages for obvious reasons in order to know precisely what other animals are saying to each other, Serres hypothesizes that these communicative systems are extremely sophisticated. Additionally, the philosopher asserts that listening to this ‘music’ leads to a way of being in the world which reflects deep feelings of ontological awareness and purpose. Furthermore, Serres’s exploration of musicality in *Musique* forces us to reexamine anthropocentric preconceived notions related to language. Given that the aforementioned researchers have demonstrated that the ‘syntax-like’ discourse of songbirds is more complex than we originally thought, *Musique* is also a book about the nature of language. The surprising variety of phonemic units that certain bird species are able to produce in their ‘songs’ illustrates that listening to the primordial musicality of the cosmos could help us to understand the evolution of human languages more fully.

From an epistemological perspective, Serres affirms that reopening our ears to the splendor of the material world, which the modern lifestyle attempts to keep at bay, permits us to internalize an intuitive type of knowledge. Whether we understand the exact meaning of the symbolic messages that other life forms are continuously exchanging around us is a rather moot point for the philosopher. Serres posits that a subject can become instinctively aware of the intricate nature of the delicate strands that link the biotic community of life together through sensual encounters with the earth. In *La Légende des anges*, Serres asserts that listening to non-human

languages results in epiphanies which allow the subject to understand himself or herself more fully in relation to everything else that exists in a deterministic, chaotic universe. As the narrator states, “J’entends cela, donc je pense” / ‘I hear this, therefore I think’ (70; my trans.). The litany of cosmic voices, or the angels to which the narrator is referring, represents a clear rejection of anthropocentric logic which stipulates that only human beings are capable of ‘language-like’ behavior.

Although the narrator of *La Légende des anges* is unable to decipher the actual content being transmitted by the messengers in question, the simple act of listening to non-human languages fosters profound sentiments of humility. After intercepting these signals being exchanged by other life forms, the narrator of *La Légende des anges* adopts a more ecocentric worldview. Numerous scholars including Steven Connor, Marcel Hénaff, William Johnsen, Gaspare Polizzi, and Trina Marmarelli have noted the importance of humility in Serres’s prolific *œuvre*. In *La Légende des anges* and many other works, Serres suggests that achieving a state of ecological humility might be an invaluable point of departure for creating a more sustainable global roadmap for the future. In addition to liberating us from an anthropocentric, “outmoded world view of reality” which threatens the continued existence of every species on this planet, this ecocentric *weltanschauung* reminds the alienated modern subject that the universal physical laws of the biosphere transcend the needs and desires of a single species (Johnsen 39).

Due to the fact that the earth is a self-regulating entity which will probably continue its indifferent trajectory long after the last human beings disappear from a scientific point of view, existential hierarchies are an illusory product of the human imagination. In Serres’s immense body of work, listening to other cosmic voices or languages is an exercise in humility which actuates the ontological realization that the earth has no vested interest in assuring the survival of

our species. If we continue to destroy the planet without reflecting upon the ramifications of our myopic actions, then *Homo sapiens* will soon vanish like countless other beings that used to inhabit this ecosphere. By highlighting the “initial absurdity of fate that has thrown us in a given spot on earth,” which is a reflection of the gratuitous nature of existence in general, Serres hopes that the reader will realize that protecting the fragile equilibrium that sustains all life is a pressing matter of life and death (Hénaff 181). For Serres, listening to the fragile cosmic voices that we are systematically eradicating in the name of progress serves as an essential reminder that ecological cycles upon which our species depends cannot continue if too many links are removed from the Chain of Being. Hence, the disappearance of any non-human language is a potentially lethal catastrophe that affects the entire circle of life.

It is in the context of the exacerbating environmental crisis in which certain lyrical passages of *Biogée* related to animal communication should be understood. Although it is apparent that Serres is astutely aware of the epistemological limitations of trying to comprehend other cosmic languages, the philosopher rather poetically poses the question “what if” in *Biogée*. This recent text could be described as a “sensual journey” during which Serres appeals to our imagination in addition to highlighting rudimentary scientific principles (Tucker 158). In *Biogée*, the philosopher wonders if these voices, many of which are now threatened or endangered because of unfettered human greed, are trying to reach out to us before it is too late.

In the opening pages of the narrative, the narrator expresses his mounting frustration concerning his incapacity to crack the linguistic codes of the other life forms around him. The narrator feels as if other cosmic voices are not only communicating amongst each other, but that they are also attempting to dialogue with the human race. Regardless of his intimate relationship with the earth, the precise meaning of these vocalizations continues to elude him. As the narrator

reveals, “Que dit-il? A-t-il quelque sens? Qui parle? Peut-on comprendre l’avertissement? Pourrai-je un jour déchiffrer cet appel de la Terre? Ecoute sa voix. Notre terre parle, tu le sens, elle nous raconte quelque chose [...] Quoi? A qui s’adresse-t-elle” / ‘What does it say? Does it have a meaning? Who is talking? Can we understand the warning? Could I one day decipher the earth’s call? Listen to its voice. Our earth is speaking, you can feel it, it is telling us something [...] What? To whom is it speaking?’ (*Biogée* 12; my trans.). Although the narrator clearly does not understand the symbolic information that is being exchanged by other species, which he is witnessing first-hand, he assumes that these messages are a warning designed to wake up the human race.

Later in the text, the narrator evokes the increasing frequency of environmental disasters as an example of the earth despondently trying to heal itself from the devastating effects of centuries of industrial expansion, pollution, deforestation, and carbon dioxide emissions. Moreover, the narrator also speculates that we should listen to these voices during these moments of fury. Imagining that other planetary voices are desperately longing to communicate with humans through the communicative filter of ecological catastrophes, the narrator explains, “Le vent appelle désormais au secours. Je ne peux plus entendre ressac ni ouragan sans y déchiffrer ces appels canoniques: Mayday, m’aidez, venez m’aider” / ‘The wind is now asking for help. I can no longer hear a backwash or a hurricane with deciphering these canonical calls: Mayday, help me, come help me’ (79; my trans.). In this passage, which is reminiscent of the provocative work *Le Mal Propre* in which the author probes the etymological origins of the expression ‘mayday,’ the narrator contends that the elements are trying to convey a message to human civilization. Even if we are unable to decode all of the phonemic units of cosmic languages, Serres ponders if these complex vocalizations are distress calls. Throughout this apocalyptic

œuvre, the following question continues to haunt the reader: Are other life forms attempting to communicate with us in their respective languages? The narrator of *Biogée* wonders if natural disasters represent a last-ditch, communicative effort of other voices from the biosphere urging humanity to deviate from its current ecocidal path.

Offering a concrete reason which illustrates why animal communication should be taken seriously despite the aforementioned epistemological limitations, the narrator muses, “mais les abeilles jouent ce rôle pour la pollinisation des plantes, sans laquelle nous mourrions de faim; sans dix catalyseurs, parfaitement inertes, milles réactions chimiques ne pourraient se produire [...] Les humains ne sont donc pas les seuls à se rencontrer pour le meilleur ou le pire, ni à se faire messagers” / ‘but bees play this role by pollinating plants, without which we would die of hunger, without ten catalysts, perfectly inert, a thousand chemical reactions could not take place [...] Humans are not the only ones to meet each other for better or worse, nor to exchange messages’ (*Biogée* 141; my trans.). This example is purposeful since many researchers have recently expressed concerns related to dwindling bee populations worldwide. Although it is improbable that scientists and ecolinguists will ever be able to understand the complexity of the honeybee dance language fully, studying other cosmic languages in their natural environment could offer invaluable insights about the evolution of the human language in addition to helping us save the planet.

Serres’s reflections regarding the intricate nature of other cosmic linguistic systems are emblematic of a greater, all-encompassing philosophical project which strives to find a more sustainable “parasitic chain” or “modality that will not turn deadly” (Yates 205). Serres often asserts that every organism is a parasite given that each life form must take from the earth in order to survive. However, the philosopher cautions the reader that the parasite must have a

symbiotic relationship with its host or they will both eventually die. For Serres, preserving the cosmos for future generations and other species is a question of finding the proper balance.

In order to rediscover our lost sense of ecological equilibrium, Serres compels the subject to listen to the larger object, to which everything is connected, which renders his continued existence possible. Previously mentioned research from the hard sciences and the field of ecolinguistics suggests that it is scientifically erroneous and narcissistic to presume that humans are the only life forms endowed with certain linguistic abilities. Additionally, studies related to the tree shrew and particular species of trees actually give credence to the poetic elements of *Biogée* outlined above. When applied to Serres's philosophy, this new empirical evidence reveals that the aforementioned lyrical reverie might not be as outlandish as it initially appears to be.

Summarizing the results of numerous studies in addition to their own, Simone Schehka and Elke Zimmermann note that tree shrews have a difficult time dealing with "environmental disturbances" (636). Schehka and Zimmerman highlight that these creatures express their distress related to the destruction of their natural habitat through both linguistic and paralinguistic means. Furthermore, "it was recently discovered that when a tree feels threatened by a disease, it sends chemical signals to other trees to warn them" ("Making the sound of the world heard" 3). Although this secretion of chemicals is not an example of the diversity and complexity of the ubiquitous 'bruit de fond' underscored by Serres in several works, this communicative behavior proves that humans are not the only organisms that engage in symbolic exchange. As Serres theorizes in *Biogée*, perhaps other beings are attempting to communicate with us and anything else that is willing to listen to their resounding alarms. If this is indeed the case, as modern science also hypothesizes, then our ability to interpret as many non-human linguistic fragments as possible could be our best chance for survival.

V. Conclusion

Although our knowledge of non-human linguistic paradigms will never be complete, this interdisciplinary investigation of communication from a scientific, ecolinguistic, and Serresian lens has revealed that the growing field of animal communication is more important than ever. Many of Serres's theories related to communication have now been confirmed by scientists and ecolinguists. In fact, some of Serres's early works including *Hermès* and *Le Parasite* appear to be rather prophetic in the sense that they anticipated¹² the aforementioned empirical studies. In spite of his "strong scientific affinities" which are part and parcel of his cohesive worldview, Serres is first and foremost a philosopher (Tucker 155). Yet, perhaps a well-informed metaphysical thinker with a deep respect for the beauty, fragility, and complexity of the biosphere is the missing component that scientists and ecolinguists need in order to articulate all of the philosophical, ecological, and epistemological implications of modern linguistic research. In addition to more empirical studies which examine non-human vocalizations, Serres's philosophy could provide the essential theoretical framework for (re)-conceptualizing language itself from a more realistic and ecocentric perspective. At the beginning of a new millennium epitomized by widespread environmental degradation, the collective fate of every sentient and non-sentient being hangs in the balance of this interdisciplinary dialogue.

¹² Serres often asserts that the art of philosophy lies in anticipating future problems and possible solutions to these complex issues.

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