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Book Review: Moser, K. (2022). *Contemporary French Environmental Thought in the Post-COVID-19 Era*. Palgrave Macmillan

Dan Manolescu (Corresponding author)
Freelance ESL Instructor and Award-Winning Author, USA
Email: dan.manolescu@att.net

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In the global Covid-19 pandemic aftermath comes Keith Moser's transdisciplinary project in which the author calls for a reassessment of humanity's relationship with itself and the surrounding world by resorting to a careful analysis of bioethics. Organized in seven chapters, including an introduction and a conclusion, and using a plethora of fact-based references, the book provides a valuable lesson in the obvious public health crisis that might help us in understanding what science and philosophy could teach us about our place in the biosphere. To do so, the author of *Contemporary French Environmental Thought in the Post-Covid-19 Era* draws on ecological theories developed in conjunction with biosemiotic principles purported by the French philosophers Michel Serres, Edgar Morin, Jacques Derrida, Dominic Lestel, and Michel Onfray. The obvious purpose of the book, based on the human understanding of the communication (i.e., semiosis) throughout the universe, is to make us aware of the possible future pandemics and, at the same time, provide a unique biosemiotic perspective of the world.

Chapter One, *Introduction*, clarifies the purpose of the study in the ever-developing analysis of how we view the importance of communication from biosemiotic perspectives. Along these lines, the author's research is focused on a process known as "quorum sensing," which can explain "the importance of other-than-human semiosis." Specifically, "instead of being robotic automatons that operate according to an internal machinery, as much of mainstream Western philosophy suggests, other species engage in deliberate semiosis that enables them to make informed, collective decisions and to anticipate future outcomes." (p. 2) The recent discovery of resistant bacteria has led the author to suggest that "the surprising frequency and complexity of the information being intentionally transmitted by bacteria also encourage a radical paradigm shift in our thinking concerning the essence of life." (p. 3) When looking at the possibility of a return to pre-Covid-19 era, a logical assumption, in the authors' view, would be to consider, besides more traditional methods, the biosemiosic capabilities of the virus that we are trying to counteract.

In sharp contrast to the Cartesian philosophy and Renaissance humanism, the new approach coming from philosophers like Serres, Morin, Derrida, Onfray, and Lestel resorts to biosemiotics logic, which, in their opinion, is to be found throughout the cosmos. In this context, the most sophisticated and complex form of semiosis on our planet is thought to be "language." To which the author adds and then quotes from Barbieri (2007, p. 108) and Morin (1980, p. 50): "We can go further and consider that all forms of living organization contain a cognitive dimension." (p. 9). Starting from Descartes's famous quote "Dubito ergo cogito; cogito ergo sum" limited to human beings, the first step in treating other-than-non-human beings is "to dismiss the preposterous notion that other organisms are robotic automatons." (ibid.)

After celebrating the creation of vaccines that have saved millions of human lives, the author estimates that it is quite difficult to analyze how bacteria participate in intentional semiosis but at the same time argues that viruses have a quorum-sensing gene. "In this vein, biosemiotic theory represents an important contribution to moral dilemmas concerning the limits

that should not be crossed with other-than-human experimentation in scientific laboratories." (p. 12) We further read that, while environmental debates are taking place in the French-Francophone Literary Criticism and Philosophy, the ecological theory is gaining considerable ground among the literary establishment. Regarding the post-Covid-19 era, the research presented in this book shows irrefutable proof "that meaningful and purposeful semiosis is a criterial feature of life in all its divergent forms." (p. 16)

A complete reworking of communication is the focus of Chapter 2, *Michel Serres's Biosemiotic Thought: Writing the "Immense Rhapsody" or "Great Story" of Life."* When referring to a similarity of ideas coming from the minds of Jakob von Uexküll and Michel Serres, the author reappraises the value of life in general, but adds the metaphor of music "to demonstrate that the biosphere is teeming with purposeful and meaningful semiosis at all biological levels of organization." (p. 21) The metaphor of music in particular, and in general the beauty of the cosmos, as mentioned by Serres (2006), are meant to invite us "to rediscover the splendor of the cosmos by reinvigorating our dulled senses and (re-)attuning ourselves to the "immense rhapsody" of the universe. (p. 22) A smooth transition takes us to Christopher Watkin (2015) and his article entitled *Michel Serres' great story: From biosemiotics to econarratology*, in which the reader is encouraged "to listen to this strange dialogue emanating from a 'musical' universe that is replete with the sounds of other-than-human semiosis." (p. 23)

One of the key concepts found in Serres is that his Great Story of Knowledge clearly demonstrates that "semiosis is the criterial attribute of life" (Petrilli & Ponzio, 2008, p. 25). Furthermore, and in more details, we go back to language and communication, a "theory of meaning," and the revelation that "the objects of the world know […] how to emit, stock, receive, and process information." (Serres, 2014, p. 43) When referring to a section of *Hominescence* entitled "Without communication, no life," the French philosopher argues that semiosis "is a hallmark of life in all of its divergent forms." (pp. 24-25) The obvious criticism of Western philosophy and its anthropocentric bias is followed by his support of "a general theory of signals" (or signs) that might help us to better comprehend what other-than-non-human semiotics means by "music." (p. 25)

Serres's idea of "premusical noise" originating in the Big Bang well deserves a trip to our very beginning, "when life and semiosis simultaneously sprang forth "from non-living matter" as "premusic" or protosemiosis. As Sharov et al. (2016, p. 5) pointed out, we thus come to the realization that there is a unique connection between existence and the creation, transmission, and interpretation of signs. In this frame of reference, Serres is also indebted to several Greek atomists like Democritus, Lucretius, Leucippus, and Epicurus when, according to Tucker (2011, p. 150), Serres discusses his other-than-non-human semiosis, and consequently hypothesizes "that there is only one substance (i.e., matter) that temporarily manifest itself in a given shape before it is transformed and recycled to generate new life." (p. 27)

While re-iterating the idea that we are not different from other material beings because we are made of the same substance, Serres also emphasizes his materialistic ethos that "information builds the universe" and that "language" is "part of a vast, interconnected biosemiotic realm in which information flows in all directions." (p. 28) A special touch is added when Serres dissects the word "angels" and its implication that they are "messengers that announce important news or deliver information." (ibid.) The blending of language and science becomes the center point in *Darwin, Bonaparte et le Samaritain: Une philosophie de l'histoire* (2016), where Keith Moser finds Serres at his best when he says that "humans constitute the exclusive or central subject of history […] all living things has a history as well […] we have recently learned that the human body carries more bacteria than its own cells, worse, more viruses than bacteria." (p. 30) Moreover, research reveals that even the most "humble" organisms "including microscopic bacteria and viruses have a long history that deserves to be recognized." (ibid.)

Semantics continues to be used when the word "composed" turns out to have a double meaning in these contexts. In one of his works, Serres (2014, p. 27) asserts:

> A thousand substances exchange millions of bits of information […] *composed*, in a network or labyrinth, of mediums and messages, or mirrors and rays, of things and reflections, matter and information, hard and soft, like us and the living […] the things of the world have their own vision of the things of the world, like each of us. (Quoted on p. 24, with the author's emphasis)

When Serres further uses the word "composed," he relates the concept of the "hard" and "soft" as used in his *Yeux* "to describe the 'musical' composition of the universe that he outlines in *Musique*." (p. 34) From language and composition, the reader is then presented with another relevant and well-founded opinion in the philosophical discussion which Serres (around 1960) postulates in sharp contrast with the pro-Marxist vision of a "global village" reshaped by production. As related by Webb (2003, p. 230), Serres is quoted to say: "I said no, the society of tomorrow will be a society of communication and not a society of production." (p. 36) Unlike bacteria, humans possess a unique ability made possible through semiosis and ingenuity, which is part of a process that Michel Serres calls "hominization" and "Exo-Darwinism evolution." According to Keith Moser (2016, p. 15), these two concepts "explain how we have 'morphed into a very different sort of animal,' albeit an animal nonetheless." (p. 38)

A quick but necessary incursion into the phenomenon of hyper-reality finds Serres asserting that it is not new but highly "exacerbated." His research leads him to believe that media and advertising have a seducing effect on millions of people who find themselves enmeshed into an "information matrix" that has the power to replace reality and provide instead a drift "towards illusion, drugs, or enchantment." (p. 40) The alternative basically create another reality, or in other words, a new ideology, another type of education, another kind of politics." (p. 41) However, while acknowledging flagrant misuses of the Internet that may sometimes lead to acts of violence, Serres still defends the relevance of the information superhighway, arguing that it "allows us to share invaluable knowledge with a greater percentage of the population than ever before." (p 44)

As mentioned in the book, the loss of biodiversity is intricately connected to the human abilities to self-destroy, which leads to parasitism and self-destruction. Serres (1990, p. 67) decries their negative impact: "The parasite – our actual status – condemns that which he pillages and he lives without realizing that in turn he is condemning himself to disappear. The parasite takes everything and gives nothing." (Quoted on p. 47) Human control of the world around us in the Cartesian point of view might easily lead us to what Serres calls "ultimate defeat." By the same token, Serres pleas for a new pact, and, while resorting to Rousseau's vision of a social contract, he "argues that this human-centered framework is no longer enough, because of the unrivaled power that modern technology has put into our hands." (p. 49) The "natural contract" envisioned by Serres, a little bit too abstract as it may sound, has been somehow validated by the Kyoto Protocol, Paris Climate Accords, and the Green New Deal.

Owing to changes in demographics caused by the overexpansion of big cities, Serres is partly optimistic when faced with findings of research studies conducted by scientists like Yu-Jie Zhang et al. (2015, p. 7493) confirming the author's "hypotheses related to the evolution of bacteria within the human body." Gut bacteria, for example, have been found to "play an important role in human health, such as supplying essential nutrients, synthesizing vitamin K, aiding in the digestion of cellulose, and promoting angiogenesis and enteric nerve function." (Quoted on p. 50) The author also offers examples of certain species of bacteria and follow their example in our fight for survival. Aware that people have already depopulated the countryside and overpopulated the urban areas, Serres asserts that such events have "transformed nearly every parcel of matter" and redefined the notion of urban atmosphere where "the noise of human 'progress' […] is not conducive to life." (p. 51)

In the aftermath of the Covid-19 pandemic we find ourselves unprepared to face the likelihood of more pandemics in the future. The dire situations that have already been evident in the "rising sea levels, reduced air quality, extreme draughts, wildfires, and an increase in infectious diseases" compel us to follow a "sensorial journey" as defined by Serres (1993, p. 60) when he theorized that "the only revolt will come to us from the Five Senses." (Quoted on page 53) In short, we are invited "to taste, touch, hear, smell, and see everything that life has to offer." (ibid.) These sensorial faculties are treated by Serres as indispensable if we want to reconnect with the rest of the universe. After mentioning our "spiritual eye," Serres brings his pantheistic views when he urges us to listen to "Pan's shrill flute" when in 1980 (p. 25) he praises Pan as the 'Mother of all things.'" The summary of the chapter reminds us that we need to be prepared to confront todays' unexpected challenges when Serres "proposes a multifaceted solution to climate change that involves a new relationship with the rest of them planet that he terms a natural contract, the recognition of other-than-human rights, and a form of comic matrimony that reinvigorates our diminished senses." (p. 56)

A minute dissection of Edgar Morin's "ecologized" thought is masterfully explained in the *Introduction* to Chapter 3. We follow Morin (1980, p. 10) and his plea for a "mutual cross-fertilization" between sciences and humanities. The disconnection between the animal world and the human realm is decried on the basis of empirical proof coming from a revised approach to the biosphere and our place in it. According to Moser, "Morin posits that life is an informational battlefield in which every species strategically and deliberately conceives, disseminates, and interprets signs as a temporary solution for staving off the internal and external forces of death that threaten our ephemeral existence on this planet." (pp. 65-66) The concept of communication is explored when Morin reminds us that bacteria, viruses, archaea, protozoa, algae, and parasites like helminths "exchange meaningful messages with other members of their community," and therefore affecting their surrounding world.

Simultaneously, in the same chapter, we find similarities between Morin and Serres in their view regarding climate change as part of the biocentric *weltanschauung* postulated when environmental crises are exposed in Morin's six-volume *La Méthode*, as well as several other books on the same subject. In the mainstream biosemiotic view, living beings are "goal seeking machines," and bacteria are" solving problems machines." Moreover, the ubiquitous and meaningful other-than-non-human semiosis is further explained when Morin (1977, p. 166) "describes the plethora of signs in '[c]ertain insect societies (termites, ants, bees) reaching an unheard degree of machine organization.' " (Quoted on p. 70)

When Morin (1980, p. 199) promulgates his concept of *computo* as a kind of machine that computes or interprets the world from a given vantage point, the philosopher challenges us to think harder about other-than-non-human semiosis: "We see at the same time that the notion of the subject is of a biological nature […] We have to return the subject to life. We have to conceive the substance of the subject. The subject is a fundamental quality of every living individual, beginning with E. Coli bacteria." (Quoted on p. 71) As a corollary, we might encapsulate Morin's argument in a few words when we understand that through *computo* we are brought back to the humblest form of life which was previously destroyed.

Morin's biosemiotic description of DNA becomes the focal point when the author resorts to James Watson and Francis Crick's findings which he calls a "great discovery of the chemical and informative structure" and which led him to affirm that "life and semiosis are the same thing." (p. 74) The hypothesis that closely follows this train of thought is that, in the process of deciphering the genetic code, "a language much older than hieroglyphics" was revealed with its invisible letters and "its words […] buried in the cells of our bodies." Barbieri (2008, p. 59; p. 75) goes one step further when he paraphrases Morin, who demonstrated that "the cell is a semiotic system made of genes, proteins, and codes." (Quoted on p. 75) In this vein, different as they are from artificial machines, individual cells are treated as semiotic "machines," the reason being, in the authors' view, that "even the most sophisticated robot […] is deprived of *computo*, since it cannot reproduce or maintain itself by (re-)creating its own parts or components." (p. 76) While recognizing that cybernetic theory is essential in understanding the relevance of human and other-then-non-human semiosis, Morin thinks that these individual cells he calls "living machines" should be thoroughly analyzed so that we can find "a modified version of the cybersemiotic approach that highlights the previously mentioned personality variations that occur at all biological levels of [their] organization." (p. 77)

Intricately fused into endosemiotic principles, we find Morin's notion of the "Informational Battlefield." If we want to survive, according to the philosopher, "we must play the delicate game of disseminating signs without giving up too much information, conceiving misleading or false messages, and covering up the signals of those who wish to inflict harm upon us." (p. 79) The whole process also entails a purposeful dialogue not only between the living semiotic system and its environment, but also internally with itself. Looking at the fact that "the human body consist of 25 trillion cells" and that there is direct or indirect contact with each other, Morin (2015, p. 104) is convinced that humans nowadays have become aware of a "silent revolution in our thinking on the body in health and disease," and that the body is "a self-regulating communication system which is integrated into larger systems." In this context, Morin also asserts that we need a careful re-examination if we want to survive, since bacteria and viruses "will find tricks, ruses to continue thwarting the progress of medicine." (Quoted on p. 81)

To support this point of view, the author supplies Morin's factual observations regarding the role of bacterial semiosis in their struggle for survival. The philosopher's reflections about SARS (severe acute respiratory syndrome) and MERS (Middle East respiratory syndrome) clearly explain why such bacterial infections have deprived us "of about 16 million human lives." As stated in the book, Morin (1977, p. 81) argues that "it is through semiosis that all species try to stave off the internal and external forces of death." (Quoted on p. 83) In a scathing critique of the anthropocentric theory, Morin suggests we humbly recognize "the extraordinary diversity of the universe of machines." (p. 85)

The same chapter also presents Morin's idea of a "formidable *megamachine*" of language linked to what he calls the "social megamachine." As such, language is thought to foster "cultural stability and cultural innovation" in places where "urban life has reduced the intrinsic worth of each individual to a heterogeneous mass." (p. 89) With environmental crises in various parts of our planet, Morin sustains the idea that all forms of "progress" and "development" are thought to be positive. His solution comes from what he promulgates as a "New Form of Historiography and Conception of the Divine." This historical method acknowledges the agency of other-than-non-human entities and re-asserts that human beings are included "into the definition of life." When religion comes into the foreground, "Morin speculates that only a new type of religion could enable global society to formulate a collective response to the daunting challenges posed by climate change." (p. 94) Besides predicting an apocalyptic ending to our humanity as it is right now, the philosopher also pleas for "ecological solidarity across transnational borders." (p. 97)

In Chapter 4 we switch to "The Biosemiosic Gaze and the 'wholly other' and the Philosophical Exercise of 'limitrophy' in Jacques Derrida's Philosophy." To begin the conversation, the author introduces Dominique Lestel and his "bio-constructivist" method for a reappraisal of "other-than-non-human semiosis and interspecies communication within so-called *hybrid communities* or *mixed societies*." Derrida's ideas about living beings and their degree of semiosic ability and moral considerability are then discussed in detail. Unlike Michel Serres and Edgar Morin, Derrida is found "unable to write a book that included all of his ecological theories before his death." (pp. 105-106) However, his written speeches and lectures were published posthumously as *The Animal That Therefore I Am* and *The Beast and the Sovereign.* The former is a humorous retelling of "his daily encounter with his companion cat" that made him realize that he sees and is being seen through "the eyes of a non-human being." (Simma, 2011, p. 84; quoted on p. 106) Therefore, it is quite obvious for Derrida to contend that animals can communicate, although we might never be able to comprehend the "wholly other." In the author's opinion, "Derrida steadfastly maintains that other species are moral and semiotic agents." (p. 109)

Scientific research is used to re-evaluate our understanding of other-than-human communication, which brings Iveson (2014, p. 103) to conclude, like Derrida, that semiosis "is a community shared by *all* living beings." (p. 110) Two concepts are mentioned in this context: firstly, animal cheating or "deceiving with their eyes, paws, and face in addition to a plethora of divergent vocalizations like whining, howling, or barking." (p. 110) Secondly, the claim that many other organisms dream. Scientific studies are used by Derrida to support his argument, with recent discoveries in the field of Sleep Science proving that "the act of dreaming appears to be prevalent all throughout the 'animal kingdom' of which we are a part." (p. 112)

Derrida's deconstruction of outmoded Cartesian dualities presents a major contribution to the current project. The philosopher "points out that the mental category of the 'animal' represents an impoverished way of thinking that is reductionist and simplistic to the point of being absurd." (p. 114) This can easily be explained by the fact that the *Homo Sapiens* concept, for Simma (2011, p. 85), does not take into account "the plurality of life." Furthermore, when referring to the word 'animal,' Derrida claims that this term was invented "to designate all other forms of life forms." (p. 116) There are many other places in his posthumous works where the philosopher defends the rights of an organism with no communication abilities, but *The Beast and Sovereign* is one of his best.

According to Derrida (2008, p. 28), the conversation about other-than-non-humans and semiosis would also include the realization that animals have feelings and suffer. "No one can deny the suffering, fear, or panic, the terror or fright that can seize certain animals and that we humans can witness." (Quoted on p. 124) Along the same lines, as Nash (2011) pointed out, Derrida "fosters a "cross-species sympathy." (p. 125) Such arguments also prompt Derrida to promote the *limitrophy* term, whereby he refuses to accept that there is a clear limit between the human and the animal. (Llored, 2014, p. 115) This approach gives the philosopher a chance to support the idea that, unless bacteria and viruses are treated appropriately, it might be quite impossible to deal with infectious diseases as they become more frequent and more intense. (Hopster, 2019, p. 1) Relevant contemporary research studies have determined that viruses are alive, a fact which gives them the ability to communicate and exchange messages with their relatives, thus enabling scientists like Villareal (2008) to acknowledge that viruses are organisms "exist on the boundary between the living and inanimate worlds." (p. 81)

When reflecting about "the war without mercy against the animal," Derrida (2009) is quoted to decry the unacceptable acts of violence against "the beast" that was "subjected, dominated, domesticated, mastered." Consequently, we are reminded that millions of people fell victims of the two world wars, and that, if we continue along the same path, humanity might be threatened with its own disappearance. As a matter of self-preservation, the reader is invited to seriously consider the obvious differences between "capital beings" and other known forms of life. And, as opposed to the Judeo-Christian ideology and Cartesian dualities, Derrida offers his own *animot* "as a sentient being endowed with species-specific semiosis faculties." (p. 138). At the end of the chapter, it is the author's opinion that Derrida's *Of Grammatology* defined his rightful place among the most prominent environmental philosophers in the French-Francophone tradition.

In Chapter 5, Keith Moser explores the concept of semiosis as promulgated by Michel Onfray, especially in books like *Le ventre des philosophes*, *La Raison gourmande*, and *Manifeste hédoniste,* to which, he later adds, among others, *Cosmos*. What makes this sensualist philosopher so controversial, as stated in the book, is that, when talking about the principles of philosophical materialism, "Onfray describes matter itself as a communicative tissue that enables many other organisms including plants to conceive, exchange, and interpret signs in an effort to stave off the omnipresent internal and external forces of death for as long as possible on what Morin terms the informational battlefield of life." (p. 146) Following similar arguments supported by scientists and researchers who strongly believe in a semioethical point of view, Onfray derides the "human somiosic pollution" that impacts the post-pandemic aftermath with irreversible effects. While being described as "the most prolific of French philosophers (Portevin, 2016), Onfray is also recognized for his contribution to "the so-called animal and plant kingdoms," in which he refuses to confirm to previous approaches and recommends a thorough examination. In this regard, we find Onfray to be a "professor troublemaker" who "means every heated word he says." (Heinegg, 2007, p. 457) The twenty-first century is hereby criticized for pressing issues like "the nefarious effects of globalization, the unprecedented economic disparities generated by trickle-down economics, the disappearance of indigenous cultures and languages, and climate change." (p. 148)

In Keith Moser's overall picture of the biosemiotic realm, we find Onfray's metaphor of "music," which offers an obvious invitation to re-examine Serres and his "immense rhapsody" of life already mentioned in a previous chapter. In the author's view, "the elemental music of the biosphere is synonymous with existence in all of its divergent forms." (p. 150) This "world of things" also includes language, which Onfray opines, is used by animals to communicate with each other. At some point, Onfray agrees with Morris (2020, p. 184) when he makes *language* synonymous with *communication*. Although plants are not considered "animals," we find Onfray (2015a) revealing that "Plant neurobiology hypothesizes that the brain of plants is to be found in the root system." As the author clearly indicates throughout the chapter, many species have been discovered to possess "astonishing semiosic capabilities," with evidence provided by the honeybee waggle dance and "mechanisms of communication in social insects" including ants. The complexity of other-than-non-human semiosis is additionally misunderstood when scientific and objective analysis is disregarded in favor of what Onfray (2005) calls "religions of the Book," including the Talmud, the Bible, and the Coran, which, in Onfray's words, "have created a filtered (hyper-)reality or symbolic universe that is disconnected from the concrete realities of the cosmos to which we belong." (p. 154) The religious aspect also leads the philosopher to acknowledge "the erroneous logic undergirding our outdated philosophical and moral paradigms." As such, *Imago dei* and Cartesian binaries are then presented as pretexts for "covering up sadistic pleasures and absolving oneself of any moral responsibility for the scandalous mistreatment of other sentient, semiotic entities." (p. 158)

Onfray (1989) is also perceived as a supporter of a "philosophical exercise" who brings to the fore what the author claims to be rediscovery of "the ubiquity of biosemiosic music throughout the plant by reinvigorating our dulled senses." (p. 21) His controversial outlook is better understood when we realize that a direct, sensorial connection with all the members of the surrounding biosphere is absolutely necessary if we consider the scientific material evidence. Negative as he may sound, Onfray is also noted to "embrace everything that life has to offer through hedonistic, somatic encounters with the material sublime. (p. 181)

As Chapter 6 opens, the Introduction offers a quick glimpse into Dominique Lestel's biosemiotic vision of "the Enchanted Space of Trans-Specific Communication" as seen in his *Hybrid Societies*. His pioneering work largely focuses on what he refers to as *hybrid communities* or *mixed societies*. Lestel dissociates himself from much of the Western thought when he maintains that "the semiotic dimension" provides clear evidence of communication of other species with themselves and with us. Some of his convictions are similar to Derrida's, especially when we are reminded "to take the biosemiosic gaze of the non-human Other with whom we share all of the ecstasy and anguish that existence entails seriously." (p. 190) The philosopher underlines the crucial role played by semiotic devices "that could even further strengthen human-animal relations" and which led him to the concept of "fully mixed" societies. In his opinion, this interaction with other species would bring a "deeper knowledge" of our universe.

As stated in this chapter, unlike Serres, Morin, Derrida, and even Onfray, Lestel has not been fully recognized in both Francophone and Anglophone communities. Much of Lestel's transdisciplinary method remains famous "for (re-) examining human and other-than-non-human societies, cultures, and semiosis *together.*" (p. 193) A careful analysis of his work will show that "Lestel highlights the reality of other-than-non-human suffering as confirmed by modern science in addition to offering concrete examples of deliberate and strategic signs emitted by other species in an effort to discredit anthropocentric linguistic paradigms and metanarratives that are now contradicted by a litany of evidence." (p. 194)

The fruitful incorporation of Lestel's ideas into the body of the current research is based on several publications, such as *Les Origines animales de la culture* (2001), *L'Animal singulier* (2004), *Les Amis de mes amis* (2007), *L'Animal est l'avenir de*

l'homme (2010), *Apologie du carnivore* (2011), and *Nous sommes les autres animaux* (2019). Various research frameworks are taken into consideration where we find the philosopher examining "the signs created, transmitted, and decoded by ants, honey bees, chimpanzees, baboons, monkeys, dolphins, whales, and birds." (p. 196) Albeit different from human language, the semiosic abilities will enable other species to conceive, exchange, and interpret signs if they are observed in a more natural setting. (p. 197) When culture becomes the central focus, Lestel is quoted to posit that "core cultural values are transmitted from one generation to the next through semiosis in many other-than-non-human societies." (p. 198) The logical conclusion is that other species not only slowly emerge in scientific studies as "fellow semiotic beings," but they "also reveal themselves to be cultural animals in their own right." (p. 199)

The obvious impetus behind Lestel's philosophy stems from the idea that we live in "hybrid societies," or "mixed communities." In this respect, although humans are outnumbered by other animals, this is a sign that "close relationships with other animals allow us to reach a higher stage of emotional maturity by helping us to overcome our innate moral deficiencies." (p. 202) Besides, probably the most remarkable aspect of living in mixed communities is referenced by empirical studies which find certain primates and birds socializing and "humanizing" in contact with humans. On the basis of evidence, the social behavior noticed in semiotic animals gives Lestel a chance to declare that "living in close proximity with humans enables other species to achieve their full linguistic and cognitive potential, thereby becoming true members of our families." (p. 206)

Furthermore, it is relevant to note that, when Lestel subscribed to the theory of "paralinguistic cues" essential in understanding the semiotic networks of other species, he was incorporating ideas from scholars like Thorpe (1961), Hockett (1960), and Trager (1958), who had already planted the seeds of what he calls the "real meaning of communication between humans." (p. 207) Moreover, borrowing from Scheider et al., (2011, p. 1), the author resorts to recent scientific experiments in which the "human's tone of voice" may help our other-than-non-human allies to decode clear messages from the "acoustic" or "musical" properties of our language. (p. 208) Reworking the already mentioned concept of "mixed communities," the philosopher finds it is very important to "contend that neither bacteria nor viruses are non-human people whose semiotic and cognitive capabilities have been enhanced through contact with humans." (p. 211)

By the same token, the author is convinced that there are possibilities for re-conceptualizing our hybrid communities simply by looking at "ways to develop our semiosis and emotional connection to other animals more fully." (p. 214) Consideration is then given to other ways we can communicate without speaking. The author finds it is necessary to insist on careful observation of body language, because it may shed light on the many ways we can "forge even closer bonds with the non-human inhabitants." (p. 215) To summarize Lestel's semiotic vision, the author postulates that readiness to understand our role in the flow of knowledge and to use semiotic devices as a "bridge" will "allow us to conceive effective strategies for the creation, dissemination, and interpretation of signs with other-then-non-human subjects." (p. 221) If we want to win the debate and finally the battle, Keith Moser argues that we need to look at all the huge volume of facts, interpret them carefully, and then use our imagination to find the best solutions.

There is, then, much research to be done, both in science and in philosophy, before we can rest assured that the biosemiotic approach is fully understood not only among researchers around the globe, but also wherever and whenever we revisit our close relationship with the surrounding world. To conclude, and to keep it French, Keith Moser's remarkable work is a *tour de force*, with no respite, but with obvious implications in our understanding of what might happen if we disregard the hard lessons taught by the Covid-19 pandemic and its aftermath. One way or another, Keith Moser's cogent and persuasive argument for awareness will enthuse the philosophers and the scientists, and enthrall the information-seeking creatures also called avid readers.

References

Barbieri, M. (2007). Has biosemiotics come of age? And postscript. In M. Barbieri (Ed.), *Introduction to biosemiotics: The new biological synthesis* (pp. 101–113). Springer.

Derrida, J. (2008). *The animal that therefore I am* (D. Wills, Trans.). Fordham University Press.

Derrida, J. (2009). *The beast and the sovereign* (Vol. 1, G. Bennington, Trans.). Chicago University Press.

Heinegg, P. (2007). Rev. of *Atheist Manifesto: The Case Against Christianity*. *Judaism, and Islam. CrossCurrents, 57*(3), 467–470.

Hockett, C. (1960). The origin of speech. *Scientific American, 203*, 88–111.

Hopster, J. (2019). The speciesism debate: Intuition, method, and empirical advances. *Animals, 12*, 1–15.

Lestel, D. (2001). *Les origines animales de la culture*. Flammarion.

Lestel, D. (2004). *L'animal singulier*. Seuil.

Lestel, D. (2007). *Les amis de mes amis*. Seuil.

Lestel, D. (2010). *L'animal est l'avenir de l'homme*. Fayard.

Lestel, D. (2011a). *Apologie du carnivore*. Fayard.

Lestel, D. (2014b). Hybrid communities. *Angelaki, 19*(3), 61–73.

Llored, P. (2014). Zoopolitics. *SubStance, 43*(2), 115–123.

Morin, E. (1977). *La méthode 1. La nature de la nature*. Seuil.

Morin, E. (1980). *La méthode 2. La vie de la vie*. Seuil.

Moser, K. (2016). *The encyclopedic philosophy of Michel Serres: Writing the modern world and anticipating the future*. Anaphora Literary Press.
Nash, R. (2011). Joy and pity: Reading animal bodies in late eighteenth-century culture. *The Eighteenth Century, 52*(1), 47–67.
Onfray, M. (1989). *Le ventre des philosophes*. Grasset.
Onfray, M. (2015a). *Cosmos*. Flammarion.
Portevin, C. (2016, May 19). Rev. of *Cosmos: une ontologie matérialiste*. *Philosophie Magazine*. https://www.fremeaux.com/Distributeurs/index.php?page=shop.product_details&category_id=77&flypage=shop.flypage&product_id=1642&option=com_virtuemart
Petrilli, S., & Ponzio, A. (2008). A tribute to Thomas A. Sebeok. *Biosemiotics, 1*, 25–39.
Scheider, L., et al. (2011). Domestic dogs use contextual information and tone of voice when following a human pointing gesture. *PLoS One, 6*(7), 1–6.
Serres, M. (1990). *Le contrat naturel*. Flammarion.
Serres, M. (1993). *La Légende des anges*. Flammarion.
Serres, M. (2006). *Récits d'humanisme*. Editions Le Pommier.
Serres, M. (2014). *Yeux*. Editions Le Pommier.
Sharov, A., Maran, T., & Tønnessen, M. (2016). Comprehending the semiosis of evolution. *Biosemiotics, 9*(1), 1–6.
Simma, C. (2011). Ver(s): Toward a spirituality of one's own. *Demenageries,35*, 73–96.
Thorpe, W. H. (1961). *Bird-song: The biology of vocal communication and expression in birds*. Cambridge University Press.
Trager, G. (1958). Paralanguage: A first approximation. *Studies in Linguistics, 13*, 1–12.
Tucker, I. (2011). Sense and the limits of knowledge: Bodily connections in the work of Serres. *Theory Culture Society, 28*(1), 149–160.
Villarreal, L. (2008, August 8). Are viruses alive? *Scientific American*. https://www.scientificamerican.com/article/are-viruses-alive-2004/
Watkin, C. (2015). Michel Serres' great story: From biosemiotics to econarratology. *SubStance, 44*(3), 171–187.
Webb, D. (2003). The science of relations: An interview. *Angelaki, 8*(2), 227–238.
Zhang, Y. J., et al. (2015). Impacts of gut bacteria on human health and diseases. *International Journal of Molecular Science, 16*(4), 7493–7519.