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Review of Keith Moser. *Contemporary French Environmental Thought in the Post-COVID-19 Era* (Palgrave Macmillan/Springer Nature, 2022)

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The publisher Springer Nature presents a book series entitled “The Sustainable Development Goals Series” dedicated to works that aim to address the challenges that humanity will have to face in the near future, from climate change to health crises, from the sustainability of economic development to social and political equality. The volumes of this book series are inspired by the “Seventeen Sustainable Development Goals” (SDGs) promoted by the United Nations, which invite academic scholars with different approaches to jointly propose a shared interpretative framework to rethink both the scientific and cultural paradigms dominant in our contemporary global society.¹

Besides works written by physicians, economists, biologists, and engineers, the series includes books that aim not only to fight against social injustice or to reconsider pedagogical practices, but also to reconceptualize ethics. In the aftermath of the COVID-19 pandemic, reflection on ethics has to be a reflection on bioethics: the emergence of a viral agent that has radically forced a reconsideration of individual and collective habits brings questions not only about human *being-in-the-world* but also the agency of all other non-human life forms. Moreover, contemporary biology claims that animals, plants, and even viruses and bacteria are not mere mechanical machines but possess a form of subjectivity, what remains of human exceptionalism? And how do these new biological understandings help us reformulate our ability to relate to the non-human inhabitants of the cosmos in the face of climate changes and health and social crises? Keith Moser, professor of French and Francophone Studies at Mississippi State University, tries to answer these crucial questions in his new book *Contemporary French Environmental Thought in the Post-COVID-19 Era* (2022) published by Palgrave Macmillan/Springer Nature.²

Although we learn from the cover of the book that the work is intended to follow the United Nations’ SDG 13 (“Climate Action”), Moser’s volume attempts to highlight the strategic role played by the dialogue between the hard sciences and the humanities in our complex society. Indeed, the author of *Contemporary French Environmental Thought* manifests a relevant theoretical ambition: exploring a possible link between French environmental philosophy and biosemiotics. What is the latter? Biosemiotics –influenced by Jakob Von Uexküll’s theoretical biology –is a field of the science of signs closely related to biology which studies non-linguistic semiosis processes present in all levels of the biosphere. In this volume, drawing on his extensive knowledge of French Theory, Moser reconsiders courageously the philosophical thinking

¹ See www.sdg.un.org/goals.

² Allow me to refer to my book review of *Imagination and Art: Explorations in Contemporary Theory* (2020), a recent volume edited by Keith Moser and Ananta Ch. Sukla with contributions from various scholars who examine the faculty of imagination through aesthetics, anthropology, philosophy, literature, and science, see Moser and Sukla; Caccia.

Review of Keith Moser. *Contemporary French Environmental Thought*
Carlo Caccia

of five great contemporary French philosophers – Michel Serres, Edgar Morin, Jacques Derrida, Michel Onfray, and Dominique Lestel – in light of the theories of numerous scientists and biosemiotics scholars – Thomas Sebeok, Thure Von Uexküll, Giorgio Prodi, Marcello Barbieri, Charles Cockell, Anton Markoš, Niels Jerne, Marcello Søren Brier, Jesper Hoffmeyer, Wendy Wheeler, Timo Maran, Donald Favareau, Augusto Ponzio and Susan Petrilli.

In the “Introduction” to the work, Moser claims that it is time to overcome the current anthropocentric paradigms. French philosophy, in this sense, played a pioneering role in the last century, since it radically questioned the notion of human subjectivity defended by traditional humanism and Cartesianism through, for example, the theoretical tools of psychoanalysis, Marxism, and epistemology. However, rather than an abolition of subjectivity as mythologized by the most extremist currents of post-structuralism or deconstructionism, a different idea seems to have prevailed in the French environmental philosophy: the human subject has as many identities as there are different ways in which he or she relates to his or her *Umwelt* (the phenomenal world experienced by the inner subjectivity) and, consequently, to other non-human life forms. At the same time, in another disciplinary field, biology has started attributing semiotic and cognitive features, which had been previously considered as human prerogatives only, to other kinds of life, from animals to plants, from viruses to bacteria. For example, especially after the outbreak of the COVID-19 pandemic, the semiotic-like notion of “quorum sensing” has sparked the interest of the scientific community:

Instead of being robotic automatons that operate according to an internal machinery, [...] other species engage in deliberate semiosis that enables them to make informed, collective decisions and to anticipate future outcomes. On the informational battlefield that we call life, the concept of “quorum sensing” sheds light on how miniscule bacteria skillfully communicate through the secretion of tiny molecules or peptides. Owing to the strength of their semiotic faculties that even allow different species of bacteria to communicate among each other, an ability referred to by numerous researchers as “bacterial Esperanto.” (2-3)

If even forms of life so different from ours possess semiotic abilities, the key question for Moser is how to think about climate change in strictly biosemiotic and, consequently, (bio)ethical terms.

Avoiding a naive and romantic idealization of the Cosmo as a place of universal peace and harmony, Moser considers the biosphere as pervaded by conflict, intended specifically as a semiotic battlefield between humans and non-human life forms.³ Human semiosis is “ubiquitous” since “we have exponentially extended the confines of the human *Umwelt* through modern technology in an increasingly urbanized world [...] that interferes with the ability of other organisms to communicate effectively” (5). In other words, we need to start thinking of ecocide caused by Anthropocene activity as a possible semiocide. The fight against climate change and environmental crisis can therefore be declined in biosemiotic and ethical terms as the preservation of “types of other-than-human semiosis that are disappearing” (6).

³ The idea of immanent conflict in the biosphere also seems to be central to the various Darwinian theoreticians of literature who consider the production of stories as an adaptive stratagem of living beings (Boyd; Carroll; Gottschall). Agonism and conflictuality are, among other things, fundamental paradigms of Russian formalism’s theory of literature, in particular at the centre of Boris Eikhenbaum and Yury Tynianov’s reflections on the nature of the literary work and the literary system, see Sini, “Di nuovo sul formalismo russo.” I also point out the theoretical and philosophical work of Giovanni Bottirolì, for whom conflictuality and the concept of “strategy” are considered the sources of a “style of thought” indispensable for understanding literature and language, see Bottirolì, *La ragione flessibile; La prova non-ontologica*. In light of this, Bottirolì has made pertinent criticisms of traditional semiotics, which is unable to sustain a theory of conflict as suggested by Freudian and Lacanian psychoanalysis.

Review of Keith Moser. *Contemporary French Environmental Thought*
Carlo Caccia

The first step in moving in this ethical direction must be a radical rethinking of the Cartesian notion of the *bête-machine* theory which “has removed other creatures from the realm of moral consideration entirely in Western society” (7). For this reason, Moser examines the thought of philosophers from different backgrounds united by radical criticism of the ‘machinic’ idea of a living being: Michel Serres, Edgar Morin, Jacques Derrida, Michel Onfray, and Dominique Lestel. In this regard, Moser notes:

Although Serres, Morin, Derrida, Onfray, and Lestel all appear to adopt the mainstream biosemiotic view that the human primary modeling device of “language” is the most sophisticated and complex form of semiosis on this planet, they deconstruct the sharp ontological gap between *Homo sapiens* and other animals created by the animal-machine hypothesis in their transdisciplinary reflections concerning the significance of other-than-human semiosis. (9)

However, Moser warns us that overthrowing the *bête-machine* paradigm can be extremely perilous as it opens up a series of problems that are difficult to solve (11-12). For example, if we accept that plants are also endowed with semiotic intentionality, are not the moral reasons for vegetarianism and veganism put to test? Another instance: if bacteria and viruses possess a subjective semiotic capability, is the legitimacy of the laboratory experiments carried out during the pandemic always granted? (11-12). These ethical paradoxes, which only the biosemiotic approach can objectively highlight, seem to oblige us to ascertain that we do not live in a world of Disney’s fairy tales but in one governed by a “law of universal predation” where the existence is a violent act and selfish in itself (12). Consequently, once confronted by the problems brought by biosemiotic approach, we need to accept the “contradictions, paradoxes, and aporias” of biological life itself (12).

The second chapter of Moser’s book is dedicated to a survey of the philosophy of one of the most influential French epistemologists of our times: Michel Serres. Rejecting the Bachelardian and Canguilhemian epistemologies, which focused mainly on the level of autonomy of scientific concepts, Michel Serres closely studies the problem of communication and semiosis not only in the relationships between different fields of scientific and humanistic knowledge, but also across the different forms of life in the cosmos.

Making specific use of musical metaphors, Serres states that there is no life without semiotic activity: “biosphere is a semiosphere” (26). In this regard, the French epistemologist even proposes a cosmogenetic vision of material existence which, drawing inspiration from Greek-Roman Epicureanism, postulates the idea that we can enter into communication with non-human organisms by listening to the “immense rhapsody” of Cosmo because we are made of the same life substance (27).

A key aspect of Serres’s thought is that non-human life forms possess, like us, their history and worldview. They are part of what the French epistemologist calls “The Great Story” of life that began with the Big Bang. Moser notes that the “Cosmic Historiography” proposed by Serres is not a highly original project since it is comparable to the methodological proposals of Fernand Braudel, Eric Baratay, and Dipesh Chakrabarty (32). However, Serres seems to be more willing to transgress the genre conventions of narrative and historiographical writing, as he does with the experimental book *Yeux* (2014):⁴

In this “experimental text [...] which mingles prose, calligraphy, 3D simulations, and annotated photographs,” Serres implies that modern technology may provide a sneak peek into the inner semiotic worlds of other organisms. Alongside a photo of him wearing 3D glasses supplied by “Dassault Systèmes, a company specializing in drawing, computer simulations and the mapping out of the most sophisticated industrial projects,” Serres reveals in the accompanying text that

⁴ Moser reviewed Serres’ *Yeux*, see Moser, “*Yeux*.”

Review of Keith Moser. *Contemporary French Environmental Thought*
Carlo Caccia

he entered into a “cave-laboratory” for a few minutes in which realistic simulations enabled him to perceive the world from the vantage point of another organism, at least to the greatest extent possible. Inspired by this glimpse of other-than-human semiosis and perception, Serres speaks directly to the reader: “Help me write a picture book in which thousands of animals would show the thousands of things that their eyes see and that we men do not see! Help me to open a museum, necessary and yet absent, where every living being could finally describe and exhibit his singular world, of which ours is only one particular case.” (32-33)

Having created an experimental work that enhances new simulative technologies, Serres is therefore not skeptical of high-tech progress. Nevertheless, the French epistemologist frequently challenges the hyper-reality dimension of publicity, new media, and political fake news that anesthetizes our ability to listen to and interpret the surrounding Cosmo (36-45). In fact, in the actualities of our techno-scientific society, humans seem to be irresponsible parasites because they declare a semiotic “world war” on other life forms (47). For this reason, Serres advocates a new “natural contract” that implies “another way of living and being that is far less parasitic as highly semiotic animals” (50). To defeat our parasitic nature, Serres’ philosophy, even embracing a pantheistic spirituality, proposes therefore a rehabilitation of sensualism and embodied knowledge banned by the Cartesian *vulgata* (53-55).

In the third chapter of *Contemporary French Environmental Thought*, Moser focuses on the fundamental work of Edgar Morin. Promoting a profound convergence between hard sciences and humanities and sharing with Serres the idea that semiosis is immanent in the biosphere, Morin considers life as “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” (65-66). Morin focuses on the biosemiotic study of infinitely small organisms such as bacteria and viruses and in particular on the latter’s polysystemic relationship with the endocrine, nervous, and immune systems of humans.⁵ For instance, Morin claims that bacteria and viruses possess the great ability to form communities among themselves to “interfere with the ability of potential predators to engage in semiosis by blocking or masking the signs of those who represent a perceived risk to the integrity of their biosemiotic Self” (66).

Nevertheless, it is the re-conceptualization of Descartes’ *bête-machine* notions that plays a central role in Morin’s thought. Firstly, Moser observes that by “reworking the Cartesian *cogito* entirely, Morin presents a litany of evidence compiled by scientists around the world to “rethink the idea of a living machine” from a more biocentric frame of reference that is in keeping with recent scientific discoveries. [...] it is our impoverished “conception of the machine” that needs to evolve” (69). In this regard, secondly, Moser notes that the French philosopher replaces the notion of *cogito* with that of *computo* inspired by cybernetics: “Morin is referring to a very different kind of machine that computes or interprets the world from a given vantage point corresponding to its species-specific primary modeling device” (69). If Cartesian *cogito* placed the subject outside any biological roots, the notion of *computo* links the subjectivity to its living body and material substance (71). Consequentially,

the “Morinian idea of the subject,” most clearly articulated through Morin’s biosemiotic notion of *computo*, removes *Homo sapiens* from the ontological pedestal on which we have placed ourselves as members of a supposedly superior species. [...], all species are able to *compute* in a meaningful way by anticipating future outcomes, responding to new unforeseen challenges, and making informed decisions [...]. (73)

⁵ In this regard, it would be very interesting to compare Edgar Morin’s concept of system with that proposed by different literary theorists: from Yuri Lotman (mentioned by Moser in passing once, *French* 74) to Yuri Tynyanov, from Claudio Guillén to Itamar Even-Zohar.

Review of Keith Moser. *Contemporary French Environmental Thought*
Carlo Caccia

Promulgating the slogan “computo ergo sum” instead of “cogito ergo sum,” Morin’s philosophy theorizes that not only “all organisms possess semiotic faculties that enable them to survive and sometimes thrive on the battlefield of life,” but also conceives that “the information capital” acquired by the organisms during their experience “is synonymous with genetic capital” (74). In light of this, Morin’s research moves to the analysis of the DNA, conceived not as a result of a mechanical process but as a semiotic and interpretative system produced by the active elaboration of living organisms (74-75). Crucially, this leads Morin to consider all kinds of organisms as autopoietic subjects. Autopoiesis becomes for the French philosopher the concept allowing a clear distinction between cellular organisms and artificial machines:

Although Morin contends that individual cells are powerful semiotic “machines,” he differentiates them from artificial machines. According to Morin, it is autopoiesis that distinguishes what he calls the “Machin family” from “cybernetic machines, such as computers and robots (that are not truly semiotic, but quasi or proto-semiotic” because they “lack autopoiesis.” (76)

Another very interesting aspect of Morin’s idea of autopoiesis is the fact that, according to endosemioticians like Thure von Uexküll, even organisms such as bacteria and viruses, driven by the need to survive in their ambience (for instance, our human body), possess the ability to intentionally create short circuits in information transmission systems, as well as to assume a mimetic and fictional attitude:

In order to survive, 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. This universal logic applies to even the most rudimentary life forms whose continued survival hinges upon their ability to respond to unexpected problems, anticipate future scenarios, and to make informed decisions. (79)

Similarly to Serres, Morin often reflects on how his theories can outline a new ethical perspective on our reality. Morin, therefore, tries to understand the origins of the Anthropocene/Technocene epoch by considering all forms of life as historical agents. In this regard, he highlights how the semiotic process of “hominization” of the environment through language, wild urbanization, and the rhetoric of progress allowed *Homo sapiens* to become, unbeknownst to him, the most dangerous parasite for other forms of life (86-91). Morin’s ethics propose a new type of spirituality capable of reconnecting us to “our cosmic roots from which we have become estranged in the Anthropocene /Technocene” (94). For Moser, the secular and anti-dogmatic new religion proposed by Morin, which also seems to look at the system of Eastern religions, can be a solution for building a sense of community capable of balancing the ineffective contemporary solipsism and responding to collective challenges: “in a sociopolitical climate in which many people appear to be more isolated and atomized than ever, 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.” (94)

In the fourth chapter, Moser explores the thought of Jacques Derrida and, in particular, the interest of the father of deconstruction for questions concerning the relationship between human beings and animals. In the posthumous books *L’Animal que donc je suis* (2006) and *La bête et le souverain* (2008-2010), Derrida addresses the question of animality because it represents a key outcome of his reflection on ontological (and ethical) interrogations and critique against all forms of dualism.

While animals are not able to speak, humans grant them the possibility to respond to the Other:

Review of Keith Moser. *Contemporary French Environmental Thought*
Carlo Caccia

Derrida is cognizant that we can only catch a tiny, fragmented glimpse of the inner, semiotic worlds of other life forms. We must acknowledge our epistemological limitations [...]. We cannot let ourselves off the hook through the reductionistic oversimplification of the complexity of issues connected to environmental ethics by pretending that we are the only semiotic animals who possess “such and such a capability” at all in the face of overwhelming evidence that suggests otherwise. It is in this sense in which Derrida pushes back against any philosophical presupposition that is predicated upon the outmoded idea that all other organisms are “poor in the world” owing to their supposed lack of “such and such a faculty.” (Moser 107-108)

As a consequence, for Derrida, the other non-human species are moral and semiotic agents who form communities with us. The French philosopher seems particularly interested in investigating the three of many similarities present in all forms of life which science and biosemiotics recognize: the somatics of emotions, the ability to lie (*dépister*), and the capacity to dream (108-113).

Nevertheless, it is more important to note that Derrida promotes the deconstruction of the concept of animal, obviously starting from the critique of Cartesian dualism:

[Derrida] reminds us that the notion of an animal is an artificial, “catch-all concept” that human beings have created in our fragmented environmental imagination. First of all, Derrida points out that the mental category of the “animal” represents an impoverished way of thinking that is reductionistic and simplistic to the point of being absurd. . . . Derrida . . . suggests that the first step to conceiving a better cognitive structure for framing our relationship with the non-human Other is to reject the general singular category of the animal. . . . Evidently, this suggestion is merely the point of departure for transcending the limitations of the human-animal binary and the general singular category that has lumped all organisms together as one homogeneous entity without any reflection whatsoever about the striking differences and similarities between them. Not only does the oppositional thinking that undergirds our deeply flawed concept of the animal create a sharp ontological gap between *Homo sapiens* and other living beings to whom we are linked by a common evolutionary history, but it also does not take into account “the plurality of non-human life.” (114)

In light of this, Derrida creates the neologism *animot* which is a “counter-hegemonic mental structure that discredits the human-animal duality and the category of the animal itself” (115). The word *Animot*, which has to be pronounced “in the same fashion compared to the singular and plural forms of the word “animal” in French (i.e., *animal*, *animaux*),” emphasizes the fact that the term *animal* is only a “cognitive construction” created by the Judeo-Christian tradition and Cartesian thought (115-125). Moreover, like Morin’s concept of *computo*, Derrida’s neologism *animot* refers to sentient and living beings generally endowed with the faculties of species-specific semiosis.

Another point to highlight is Derrida’s concept of *limitrophy* (125). Limitrophy is an important cognitive frame and epistemological tool because it denies accepting the clear distinction not only between humans and animals but also, with reference to bacteria and viruses, between life and non-life. However, Moser observes that Derrida’s concept of limitrophy does not intend to erase the differences between man and other living species:

The exercise of limitrophy recognizes that there are differences of degree and not of kind from a biosemiotic perspective. . . . Without succumbing to the dangers of binary thought that can lead to ludicrous assertions about other-than-human semiosis, the notion of limitrophy creates

Review of Keith Moser. *Contemporary French Environmental Thought*
Carlo Caccia

a dialogic space for (re-) conceptualizing “the essential or structural differences among animal species.” (126)⁶

In this regard, Moser notes that “Derrida distinguishes between what he terms “capital beings” who appear to possess superior semiotic ability and “sufficiently developed cognitive capacities” and organisms with less semiotic freedom” (127). Consequently, for Derrida, whereas it is impossible to fully achieve the anti-speciesism ideal, it is possible to renegotiate these borders between different species “somewhere,” according to historical needs and legal contingencies (127-132). In this sense, Derrida’s concept of limitrophy is much more malleable and negotiable than that of the “natural contract” proposed by Michel Serres (132). However, Derrida, like Serres and also Morin, insists on the fact that the boundaries between the different species must in any case always be problematized to put an end to the arbitrary and parasitic violence that we perpetrate against animals (133-138).

The fifth chapter of *Contemporary French Environmental Thought* is dedicated to the thesis of the controversial pop-philosopher Michel Onfray. Like Serres, Onfray is a radical materialist who pays particular attention to the Greek-Roman tradition of Epicureanism (Lucretius, Democritus, Leucippus, and Epicurus) to rehabilitate our five senses as epistemological vectors that permit us “to catch a glimpse of the semiotic nature of existence” (146) and to recognize that all organisms can conceive, exchange and interpret signs. Moreover, like Serres, Onfray describes matter itself as the basis of semiosis capacity and uses musical metaphors to describe a post-Monotheistic way of relating to Cosmo (150).

Furthermore, like Derrida, Onfray is critical of the Judeo-Christian tradition which, in addition to being the basis of Cartesianism, has imposed the *topos* of the *imago dei* on Western culture. For instance, Onfray claims that the mythical narratives present in the three great monotheisms legitimize ecocide against other living beings because they introduce an artificial hierarchization into the biosphere:

According to Onfray, Derrida, and Serres, the notion that we have been granted the divine right to play the role of masters of the universe is linked to our myopic and *evocidal* aggression against the hand that feeds. Onfray insists that the genesis myth must be uprooted at its source, since it is an unsustainable way of thinking that prevents us from taking action in defense of an imperiled planet. In this regard, the philosopher promotes “a true secularism, an atheist secularism” in an attempt to “provoke global reflection” about the *stories-we-live-by*. . . . From an ecological perspective, the philosopher argues that many core Judeo-Christian concepts including the genesis myth are so problematic and potentially lethal to all of the world’s human and other-than-human inhabitants that they must be challenged. (149)

In this regard, we can observe that the philosophical and scientific sources used by Onfray to deconstruct the myth of the *imago dei* and to promote radical secularism are extremely eclectic: from the Greek paganism and anti-clerical tradition (Celsus) to Michel De Montaigne’s *Essais*, from the ethnologist Karl von Frisch to the most recent contributions of the scientific community (149-152).

However, whereas Derrida thinks from an epistemological point of view, Onfray’s militant and hedonistic atheism offers a direct attack against the concept of God as intended by the monotheistic religions. Judaism, Christianity, and Islam use abstract concepts that distance man from the embodied concreteness of existence:

⁶ It might be interesting, in this sense, to compare Derrida’s *limitrophy* with the concepts of *boundary (granicy)* and *threshold (porog)* in Mikhail Bakhtin’s thought, see Sini, “Soglie e Confini.” Also interesting in this regard are Bakhtin’s unpublished writings concerning a planned but never completed monograph on Gustave Flaubert in which the Russian philosopher reflects precisely on animals. These notes were translated into Italian by Stefania Sini (Sini, “Su Flaubert”).

Review of Keith Moser. *Contemporary French Environmental Thought*
Carlo Caccia

Onfray argues that the Talmud, the Bible, and the Coran have created a filtered (hyper-) reality or symbolic universe that is disconnected from the concrete realities of the cosmos to which we belong. . . . Instead of observing the universe directly like Montaigne or pondering the philosophical implications of scientific knowledge, Onfray avers that many people cling to magical thinking, pure concepts, and absurd fictions [...]. From a biosemiotic perspective, this debatable claim is Onfray's explanation for the inability of many individuals to see beyond the dominant cultural metanarrative of the genesis myth . . . (154-155)

In other words: the abstractness of religious beliefs has led humans to take no responsibility for themselves and the surrounding cosmos. Consequently, the French polemicist believes that the abstractness of religions has prefigured capitalist and globalist ideology as well as the simulative dimension of hyper-reality (169-173).

However, Onfray notes that humans need to make ethical or ontological distinctions between themselves and other semiotic organisms. Indeed, if we did not make such distinctions, we would have a difficult time surviving owing, due to the law of universal predation. In light of this, Moser notes that

Onfray affirms that there are no demons or angels on this biosphere, given that every species must kill another living organism in order to survive on a regular basis. . . . Despite the horrors and systematic abuses of medical experimentation with other animals that Onfray deplors, the philosopher contends that all other-than-human suffering in research labs cannot be banned if we wish to survive on the informational battlefield of life. (178)

The fifth chapter of Moser's work is devoted to a thinker relatively little known outside the philosophy of ethology and biosemiotics: Dominique Lestel. Like Donna Haraway, Lestel proposes to consider our world as pervaded by "hybrid communities" or "mixed societies." These concepts denote semiotic systems involving the profound interrelation between humans and non-humans. In fact, in hybrid communities, "we continually renegotiate the spaces in which we live with many other-than-human companions through meaningful and purposeful semiosis" (190). Lestel noted that all living beings possess semiotic capacities that enable them not only to communicate with other species but also to pass on information from generation to generation. For the French philosopher, therefore, animals possess a specific form of culture: "As opposed to being the only cultural animals that exist on an island of exception far away from the supposed animal-machines, Lestel presents compelling evidence from the hard sciences in support of his claim that culture is a "natural and evolutionary" phenomenon that is found throughout the universe" (198).

Lestel then notes that we and our domesticated animals build a complex system of relationships. In fact, we have the impression that animals humanize themselves to communicate with us: "Lestel hypothesizes that humans are "universal talkers" whose exceptional semiotic prowess is like a "cognitive prosthesis" that allows other animals who spend time with us in our mixed communities to sharpen their own species-specific linguistic faculties" (205). In light of this, the French philosopher highlights the crucial role played by human voice intonation that can improve the communicative relationship between us and animals:

Our pets may not be able to discuss Shakespeare or wax poetic with us about the human condition, but Lestel warns us to not draw hasty or unfounded conclusions. When we interact with our other-than-human family members, we often change our pitch, intonation, or inflection that is correctly decoded by our pets as a sign. On a scientific level, recent experiments have uncovered that the "human's tone of voice" is indeed laden with semiotic value These studies have confirmed that our other-than-human companions "are very skillful in understanding some

Review of Keith Moser. *Contemporary French Environmental Thought*
Carlo Caccia

forms of human communication” that Lestel identifies as the “acoustic” or “musical” properties of our language(s). (208)

We humans, for this reason, will have to use our technological capacity to try to establish a channel of communication with the animals around us. Moser notes that Lestel speculates on the fact that, in the future, new technologies will be able to bridge the communication gap between us and animals. In other words, the development of new technology will make hybrid and mixed communities more evident: “Lestel asserts that we can catch a glimpse of how other animals communicate within their respective *Umwelten* through technology” (213). Lestel, therefore, approves the creation of technological devices and artistic installations that help to expand the communication possibilities between humans and animals with material interfaces. In particular, Lestel studied the avant-garde works of Louis Bec and Eduardo Kac which incorporate 3D technology and virtual reality devices (213-214). For instance, Kac's *Darker than Night* (1999) allows us humans to virtually enter the sensory reality of bats while emitting ultrasounds that virtually interact with the animals' *Umwelten*.⁷ In this regard, Moser notes that these new kinds of artistic installations permit for a re-thinking of the faculty of imagination from an aesthetic perspective:

According to Lestel, digital “experience projection” involves “not really seeing yourself as a member of another species but able to see yourself other than in your own species” Lestel’s interpretation of Bec and Kac’s artwork is part of a recent trend in academic circles where we “have witnessed a groundswell of philosophical interest in imagination.” Compared to Descartes for whom our imagination was little more than an unreliable epistemological vector that could lead us astray, Lestel seems to subscribe to David Hume’s “gap-filling model” that rehabilitates our imagination as a vital pathway to knowledge acquisition In this vein, Lestel implies that virtual devices could play a pivotal role in the re-imagining of the shared spaces that we co-inhabit with other species potentially resulting in the creation of “fully mixed” societies. (213)

Although Lestel, therefore, extols the human imaginative and technological capabilities to create devices in the future to increasingly interact with animals, the French philosopher also admits that existence is an inherently violent act because it forces us to dominate the lives of non-humans. In other words: eliminating all manifestations of cosmic aggression is impossible because we do not live in a Walt Disney’s reality but in one that pits predator against prey (212).

Nevertheless, the cruelty of existence does not dispense Lestel from proposing a new theory of human intimacy. For him, in fact, not only our body but also our private and emotional life is in constant relation with the surrounding biological reality. Therefore, the annihilation of non-human species profoundly alters our idea of humanity because it erodes our relational and inner self: “The anthropogenic erosion of the foundation of collective life actuates a crisis of meaning in this sense, because we are no longer the same humans that we once were when the biosemiotics web that we co-inhabit has been ripped apart” (216). Finally, Moser notes that the great merit of Lestel’s philosophy is the expansion of “von Uexküll’s *Umwelt* theory in order to illustrate how we co-construct a stable sense of Self and identity with both human and other-than-human subjects in our polyspecific families” (221).

In the conclusion of *Contemporary French Environmental Thought*, Moser strongly reiterates the close link between French philosophy, science, and biosemiotics. The interdisciplinary approach proposed by the author is certainly able to contribute to a radical paradigm shift for imagining a sustainable future and a methodological tactic to study the essence of communication and of life itself.

⁷ <https://ekac.org/darker-info.html>.

Review of Keith Moser. *Contemporary French Environmental Thought*
Carlo Caccia

Moser's book is a well-documented and rigorous analysis that has the great merit of disseminating information placed outside the specific interests of the community of literary scholars. Another certainly commendable aspect of the volume is that it conveys an ethical point of view worth sharing and discussing from the perspective of the global challenges faced by humanity. Moreover, I would also like to point out some theoretical cues from Moser's book that might inspire further interrogations whitening the field of literary theory. For example, I believe that the discovery of the semiotic capacity of non-human life forms can allow us to elaborate a non-anthropocentric but no less pragmatically founded theory of fiction. At the same time, experimental works such as *Yeux* by Michel Serres or those mentioned by Dominique Lestel invite us to reflect even more on aesthetics and transmediality. I hope that, in the future, Moser intends to return to these topics, only touched upon in this book.

However, I would also like to point out some aspects of the work, which are, in my opinion, revisable but which I hope will stimulate a discussion or clarifications from the author.

I believe that a divulgation book should balance both persuasive and informative intentions. However, it seems to me that sometimes the desire to persuade the reader rather than to inform prevails in Moser's work because the author's style and argumentation are tendentially monological. For instance: Cartesian dualism and the *bête-machine* paradigm are presented throughout the book either through the perspectives of the five French philosophers or through Moser's as unsuitable for interpreting our world. I believe, like the author, that this judgment is correct, but at the same time, I think that it would have been more appropriate to quote also Descartes' original texts to give the reader a piece of even more complete information. Moreover, it is not clear to me who are supporters of Cartesianism and anthropocentric ideology today: Moser states that the biosemiotic paradigm serves to overcome the position of the unspecified "mainstream philosophy" or "Western philosophy" without ever going into details of this designation or explaining us the thesis of the (neo)Cartesians. From this lack, a question arises: how exactly can ideological positions like Cartesianism or anthropocentrism be mainstream while they are opposed by the United Nation's worldview and the scientific and philosophical community today? And yet another question: is Cartesianism a mainstream philosophy? It seems to me that since Descartes' thought appeared in the 17th century it has suffered more criticism than praise from philosophers and scientists (from Thomas Hobbes to Giambattista Vico, from Friedrich Nietzsche to Antonio Damasio).

In short, I would have been more persuaded and informed by *Contemporary French Environmental Thought* if the author had clarified for us paradigms and institutions opposed to the principles defended by contemporary French philosophy and biosemiotics. I highlight this need for further study because I believe that the debate on environmental crises, climate change, pandemics, and bioethics needs to bring together all the polarizing positions in a comprehensive philosophical discussion. In light of this, I believe that it is possible to distinguish epistemological and philosophical issues (the Cartesian idea of *cogito*) from material problems that manifest themselves in everyday and social life, admitting, for example, that it is not the fault of Cartesian philosophy that human beings do not recognize the agency of non-human life forms.

I think that the absence of 'enemy' thinking in Moser's prose lies in the fact that *Contemporary French Environmental Thought* never questions the nature of the values that it professes. Although Moser recognizes that the paradigms of biosemiotics environmental philosophy can create problems in jurisprudence and ethics, he does not seem to admit that the values embodied in ecological thinking are autotelic, absolute, and non-negotiable like all the values that arise in an institutional context. Our point is not to deny the scientific theories presented in the volume (we have absolutely no competence in such matters) but to claim that, after all, their statements refer to values and not to facts. The values promoted by the French philosophy and the exponents of biosemiotics do not automatically delegitimize the values based on

Review of Keith Moser. *Contemporary French Environmental Thought*
Carlo Caccia

the Cartesian or Jewish-Christian tradition because even science, parallel to its objective and laboratory examination of epistemological concepts, constructs value judgments that must be defended rhetorically in an extra-scientific *agorà* (Cavazzini 35-40).

If Moser's work does not aim to philosophically reconstruct a polarising debate, one might wonder what the book's target audience is. Here is the answer of the author at the end of chapter one ("Introduction"):

For scholars working in the hard sciences, this book demonstrates the utility of biosemiotic approaches to organizing knowledge as part of the scientific method. [...] Not only does the interdisciplinary of biosemiotics appear to be here to stay in the hard sciences, but it has also cemented its place within the many subfields that comprise the Environmental Humanities. [...] In the context of French-Francophone Literary Criticism and Philosophy, this project also seeks to expand ongoing environmental discussions in these circles. (14-15)

I claim that this target is too broad and, for this reason, the book risks disappointing the expectations of both scientists and humanists.

Firstly, I think it is not clear what are the strictly conceptual reasons why a scientist should reorganize their specialized method through biosemiotics. Scientists may surely gain ethical considerations from reading this volume, but these do not, in my opinion, overlap with practical explanations. In other words: how does the knowledge that viruses and bacteria have capabilities change laboratory practices or the processing of concepts? If anything, Moser's book could be interesting for epistemologists who deal with the concept of biological life. However, I wonder how much biosemiotics and epistemology (that of Canguilhemian inspiration, for example, which rejects the equivalence between life and cybernetic system) can enter into dialogue with each other or agree on the need (or not) for a distinction between the concepts of biology and the practices of medicine (Cesaroni 186-191). In light of this, the biosemiotics approach, being a branch of science "of everything" (semiotics), seems in this sense to bypass the conceptual and practical differences between the different typologies of sciences.

Secondly, Moser states that his work is also addressed to scholars who are already interested in Environmental Humanities. Maybe, the stylistic monologism adopted by the author finds justification in the fact that the audience of humanists uncritically accepts the values discussed in *Contemporary French Environmental Thought*. However, in the Environmental Humanities community, there are certainly literature scholars. Although Moser in the introduction refers to the essays written by Timo Maran and Hubert Zapf in which it is stated that "biosemiotic theory has a lot to contribute to the study of World Literature, Literary Criticism, and Ecocriticism" (14; Maran; Zapf), in my opinion *Contemporary French Environmental Thought* contains no considerations directly relevant to literary studies. Precisely because the author is also a literary scholar, I would have expected more space for literature and attention to the interests of those concerned with analyzing literary texts within the Environmental Humanities.⁸ In fact, in Moser's book, there are no novels or poetry analyses nor considerations in the field of philosophy and theory of literature. In light of this, it is not clear whether biosemiotics can provide a paradigm for the analysis of literary narrativity and forms. In short, it seems to me that Moser sacrificed far too much the autonomy of literary studies in *Contemporary French Environmental Thought*.

I believe that the absence of discussion of purely literary topics in this book lies in the fact that this volume is also intended for an audience of scientists, politicians, or, in general, non-

⁸ Moser is a renowned Nobel prize-winning writer J.M.G. Le Clézio expert (Moser, *Le Clézio*). *Enthymema* published two brilliant papers by Moser concerning contemporary French literature, see Moser, "J.M.G. Le Clézio"; "Reviving the Nuanced."

Review of Keith Moser. *Contemporary French Environmental Thought*
Carlo Caccia

specialists. Moser's volume, therefore, respects the intention clearly manifested in the introduction: this book serves the whole of humanity (otherwise it would not have the United Nations' SDG tag). Debating around literary texts would probably have alienated scientists and politicians because they do not possess our hermeneutical or narratological categories (for example the ones suggested by econarratology, see Morel and James). However, we also have to admit the sad possibility that scientists and politicians are not interested in literature at all. In light of this, a question may arise spontaneously: why do we humanists necessarily have to adapt to an audience that does not understand our objects of study and our specialized skills? And why do humanists always have to chase after the scientific community and political institutions without the latter reciprocating their interest in literary objects? The study of literature plays a marginal role if we consider the economic-political interests of our elites. For these reasons, I think that literature specialists nowadays are in danger of being socially regarded only as specialists in cultural dissemination, ethics, or storytelling and not in the analysis of literary works.

In light of this, I believe that the time has also come to question closely the relationship between the literary/humanistic institution and the scientific/political community and, consequently, the value of interdisciplinarity in academic research. Let it be clear that I am not against interdisciplinarity. However, interdisciplinarity, if it is chosen as an indisputable value or if it forces literary scholars not to focus on literary texts anymore because their task in this society is to disseminate and persuade rather than analyze novels and poetry, shows a more contestable aspect.

In conclusion, *Contemporary French Environmental Thought*, as well as proposing a valuable ethical reflection, has the great merit of arousing more questions than answers outside the author's direct intention.

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Carlo Caccia

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