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The Posthuman Villa of architect Mario Coppola
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MAIN SECTION

Ecosemiotics of the City. Designing the Post-Anthropocene

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ABSTRACT
The city was thought as the place of culture, a boundary of separation from the wilderness. Recently, ecosemiotics has shown that every kind of space is a habitat for those who survive in it. Thanks to a semiotic reading of the city, especially the urban park, we will try to deconstruct the opposition between nature and culture. Moving beyond this dualism it means to intersect every form of life that make up the city. This essay will attempt to rethink our time in a multi-species project aimed at the post-Anthropocene. Along this path we will try to imagine a posthuman that can survive the catastrophe. In the proposal we will see what can be done to live together with non-humans. For this reason we must think a new space for a peacefully coexistence. The ultimate question is: is it possible project the city by the relation between human and non-human? In the conclusion we will ask: is it possible to live as a holobiont?

KEYWORDS
Anthropocene, Ecosemiotics, Holobiont, Nature/Culture, Posthuman

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What do you see?

Central Park was created in 1856 and after a hundred years, between the 1980s and 1990s, it was redeveloped by landscape architect Brice Kelly. The motivation for the redevelopment was born from the fact that the park was abandoned and degraded at the beginning of the 20th century. This means in some way that the citizens did not use this green area and did not carry out the functions of the park, creating a sort of abandoned place. Starting with the reclamation of the site and its redesign, the landscape architect has rethought the spaces for the citizens' use. Artificial lakes, skating rinks, playgrounds and sports trails have been designed to give new meaning to the city.

In the field of urban semiotics, when we think about the city, the question is not so much what a city is, but who makes the city. Because the object "city" is an object to be constructed. This object is precisely made up of those who inhabit it, i.e., the subjects who make up this urban space. In the same way, if it makes sense to ask who makes the city, when we think about a park it makes sense to ask, "who makes the park?" In the image below we see paths, margins, similar neighborhoods, nodes, and references.[1] Let us now imagine that we enter the park, sit on the grass, and write down in a notebook the subjects that make up the park. A couple running, a yoga group, children playing ball, and a girl lying down reading. We already begin to glimpse a kind of environmental image divided into: 1) identity; 2) structure; 3) meaning.

However, what the landscape architect cannot predetermine is the emergence of new actors in the park. Central Park, in fact, has become the place of settlement for different new actors. The Central Park Wildlife website states that there are now 303 species of birds, 10 different species of mammals (including the coyote), and 223 species of invertebrates, fish, and turtles. So, when we ask "who makes the park?", we have to take into account new actors who bring new meanings to the fore. These are meanings that modify the urban environment not only in the green area but also in the city's policies and social relations. The codes of the city are modified by other species. We can then ask ourselves in a certain sense: the urban park is significant, but in which sense? For whom? In what measure? What rhythms? A park is a place where events take place, a space from which lifestyles and forms of living are grafted. The park is an actant and actor capable of action programs, of producing meaning, proposals of values, alterations of people and animals, plants and things. The park can therefore be investigated in its "explosion of meaning."[2] This

1 Kevin Lynch, *The Image of the City* (Massachusetts: MIT Press, 1970).

2 Juri Lotman, *Culture and Explosion* (Berlin: De Gruyter Mouton, 2009). The term is taken from Lotman's concept of the "explosion of meaning". He questions the extent to which the world created by language, the cultural sphere, adequately corresponds to the world beyond its boundaries, the "world of nature".

FIG. 1 Central Park New York. Image Credit: © *Creative commons* [https://pixabay.com/it/photos/new-york-stati-uniti-d-america-nyc-4352072/]

process of investigation must take one thing into account: the very process of the signification of the park and its actants is characterized by unpredictability and unexpected changes in the course of the "explosion." Explosion and evolution in the cultural sphere, but also architectural and ecological in a broader sense, are not two phenomena that alternate. On the contrary, they coexist and interact synchronically in the same cultural space, which Lotman sees as a complex, multi-layered conglomerate of planes of human activity. In our semiotic reading of the urban park (identified in ecosemiotics), non-humans also constitute these planes of urban interaction and composition. Planes may be subject to momentary explosions while others develop according to the rules of gradual evolution, but explosions of meaning are also activated by non-humans living in the city. As we will see, non-humans are shrapnel that modifies the city and its meaning.

Maps of urban living: the city as phenomenological space

A very interesting case is birdwatching. There is in fact a mapping of New York City based on sightings of certain bird species. The map marks points of interest and hubs based on the species sighted, species that settle for a short time in New York during a route that takes them across the United States. So not only does a new mapping of the city emerge that has non-human habitats as landmarks, but the map is drawn by citizens themselves who can report sightings. The reference points, the meanings, and the signs with which to read the city change.

It is a well-known fact that most people, despite their subjective perception of a place, have a shared image of cities. However, we might ask ourselves, taking the question to its extreme: is there still a shared image between the New Yorker and the birdwatcher? Is there also a shared image of the city between humans and non-humans? It is about mapping the city according to one's own subjective experiences. So, if an architect and an entomologist walk around the city, do they have the same perception of the city? How will they describe it on their return? What particularity will emerge from their previous knowledge and experience? The city thus becomes a phenomenological space made up of different narratives. Human and non-human narratives. These narratives sometimes intersect, interweaving their plots into a single story yet to be written.

Urban green areas have a profile which, despite the planning, keeps alive a process of urban regeneration with unpredictable outcomes.[3] We could think of greenery, a wide-ranging concept, as the inverted image of the city; something that instead of polluting and complicating, makes urban texts breathe and smooth out. Green, then, is a place with different times and rhythms, places of encounter, and contemplation, and suspended from urban performativity. More than an "urban negative" it seems to be an "urban positive" that does not allow itself to be negatively integrated into the rest of the city, except by the flood of waste. Spaces that prefigure an alternative to a society in its tension are made up of paths, prohibitions, duties, rules, obligations, time gears and relational hypocrisies. In the paths of the parks, time is suspended, as in the beginning were the *passages* of Paris according to Walter Benjamin.

Green spaces are the positive side of the city. The negative side of the city is the *terrains vagues*, or "terrains with no definition," as territories of abandonment. Spaces where the citizen feels insecure because they are outside the system of power. As Ciuffi says, we need to look at these spaces from an inverted point of view to reveal their potential. A potential that rises in indetermination, possibility, and contamination. Something that threatens the citizen, child of the urban machine, slave to the marked-out paths without which he would be a disoriented animal. Ciuffi underlines that "these are spaces that ask for meaning, but they have a singular way of asking for meaning, they do not seem to invite us to attribute it in a stable way, rather they trigger a process of incessant resemantization, they invite us to endow them with a provisional meaning, ready to renew itself again, made to renew itself again [...]."[4]

In the same way the green spaces, despite the tracing of paths, margins for humans are always reinserted in a resemantization by the non-human. A non-human that takes its spaces, narrativizing green areas in

3 Martin Krampen, *Meaning in the urban environment* (London: Routledge, 1979).

4 Valentina Ciuffi, "*Terrains vagues*: il rovescio dei vuoti urbani", in *Linguaggi della città*, eds. Gianfranco Marrone, Isabella Pezzini (Milano: Meltemi, 2008), 182. (Our translation)

unthinkable ecological niches. Tracing footprints in places that are forbidden to domesticated animals, digging, and defecating in places sacred to humans, and trampling on territories that were not intended and designed for use. The local authority is established by non-humans who reinvent and reinterpret a space that has changed from a green area to a landscape. A landscape that is mapped according to their own needs, according to their own semantic categories.

The map is not the territory

"The map is not the territory" is a proposition by Alfred Korzybski that is now part of our shared knowledge. This phrase was taken up in the 1970s by Gregory Bateson, who offered a very lucid analysis in "Steps to an Ecology of Mind". Borrowing his thoughts on cybernetics, Bateson tells us that what is transferred onto the map is difference. The difference is an abstract entity that stands on a hiatus, a gap, an insurmountable void. The map, as a mental representation, differs from the territory, the terrain that one treads and experiences with the body, because there is an infinite filtering process. In fact, we could say that the difference is the "HS filter," that is, the view of *Homo Sapiens*. This filter is made up of the retina, spatial perceptions, and information collected and cognitively processed by a human brain. The tracing of the map is an attempt to objectively report

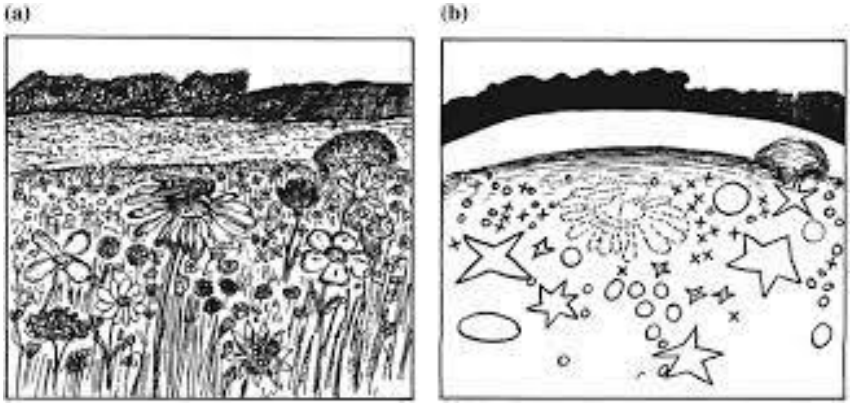

FIG. 2 Umwelt of a bee. Image Credit: © *Jacob von Uexküll* [https://www.researchgate.net/figure/The-Umwelt-of-a-bee-as-illustrated-in-Von-Uexkuell-1934-a-The-environment-of-a-bee-how_fig2_286444305]

an experience that is to all intents and purposes subjective and singular. For this reason, Bateson asserts that if one asks rigorously why the map is not the territory, one enters a regress to infinity on a series of filtrations that separate the two planes. "Territory never gets in at all,"[5] he states.

However, we must point out the existence of a metalanguage that allows us to get to talk in a shared way about the map and the territory to identify them. Nevertheless, this meta language is derived from the fact that we participate in the same kind of species; therefore, our species-specific and

5 Gregory Bateson, *Steps to an Ecology of Mind* (Chicago: University of Chicago Press, 1972), 454.

physiological capacities (despite the great diversity) are quite similar.

If we were to ask ourselves through a mental experiment how other animals map the same territory we tread together, we would have to imagine radically different maps. And, as Nietzsche stated, asking ourselves which of our perceptions is the fairest is utterly meaningless. Because we should measure rightness by a paradigm that does not exist. This was demonstrated by the studies of Jacob von Uexküll who clearly showed how every living person lives in a subjective ambient world.[6] Every *Umwelt* consists of perceptual marks, i.e., signs that are meaningful for the survival of the individual.[7] Thus, if we were to imagine how a bee sees a field of flowers, we would have to account for its perceptions according to what is relevant to its survival.

Every animal has its own world that is unthinkable for the rest of the living. But semiotics offers us tools to read these unknown and invisible worlds. One branch of biosemiotics, ecosemiotics,[8] helps us to read the interactions between an individual and its environment.

Ecosemiotics and cognitive landscape

Biosemiotics is an interdisciplinary research program that investigates the myriad forms of communication and signification found in and among living systems.[9] Ecosemiotics is a branch of biosemiotics and is concerned with the relationships that exist between organisms and the environment, nature, and culture.[10]

> Ecosemiotics is, in the broadest sense, a branch of semiotics that studies sign processes as responsible for ecological phenomena (relations between species, population patterns, and structures). In particular, it studies the role of environmental perception and conceptual categorization in the design, construction, and transformation of environmental structures.[11]

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6 Jacob von Uexküll, *Umwetl und Innerwelt der Tiere* (Berlin: Springer, 1921).

7 Jacob von Uexküll, "The Theory of Meaning", Semiotica, 42 (1) (1982): 1-87.

8 Timo Maran, "Deep Ecosemiotics: Forest as a Semiotic Model", *Semiotic Inquiry*, 38/39 (3) (2019): 287-303; Id., *Ecosemiotics* (Cambridge: Cambridge University Press, 2020).

9 Marcello Barbieri, "A Short History of Biosemiotics", *Biosemiotics*, 2 (2009): 221-245; Donald Favareau, *Essential Reading in Biosemiotics* (Cham: Springer, 2010); Kalevi Kull, "On the history of *bio* with *semio*: F. S. Rothschild and the biosemiotics rules", *Sign System Studies*, (27) (1999): 128-138; Kalevi, Kull, et. al., "A Biosemiotic Question", *Biosemiotics*, 1 (1) (2008): 41-55; Thomas Sebeok, "Communication in Animals and Men", *Language*, 39 (1963): 448-466; Nicola Zengiaro, "From Biosemiotics to Physiosemiotics. Towards a Speculative Semiotics of the Inorganic World", L*inguistic Frontiers*, 1 (2022): forthcoming.

10 Timo Maran, "The Ecosemiosphere is a Grounded Semiosphere. A Lotmanian Conceptualization of Cultural-Ecological Systems", *Biosemiotics*, 14 (2021): 519-530; Kalevi Kull, "Semiotic Ecology: Different Natures in the Semiosphere", *Sign Systems Studies*, 26 (1998): 344-371.

11 Timo Maran, Kalevi Kull, "Ecosemiotics: Main Principles and Current Developments", *Human Geography,* 96 (1) (2014): 41.

These relationships are essentially semiotic processes necessary for any form of life to survive in each environment. The organism from the semiotic processes is therefore able to adapt and modify its environment. The functions that connect individual/individual, individual/environment, environment/environment, are mediated by a semiotic component: the "ecofield interface".[12] The semiotic component is necessary for the organism to correctly interpret how to use a resource. Without semiosis, life would not be able to understand the environment and adapt effectively; in other words, without semiosis, life would perish because it would be inadequate to the context in which it is found.

For ecosemiotics, the landscape is interpreted as a semiotic interface between the resources that the surroundings offer and the organism with its species-specific qualities.[13] The notion of "cognition" linked to that of landscape is meant to indicate that each organism cognitively selects meaningful spatial configurations for the functions available to the organism to adapt to survive. By resources, we do not mean only food, but also shelters, other individuals, possibilities of camouflage, places to express one's fitness, etc.

The world of each organism is made of signs that are significant for the individual, while many phenomena and objects are insignificant and therefore are not immediately detected by the functions of the organism. Almo Farina[14] indicates three categories of landscapes:

Neutrally-based Landscape (NbL): the neutral landscape is a space in which the organism is completely immersed but it cannot receive any information either through the senses or through cognitive processes; it is an irrelevant landscape for the organism.

Individually-based Landscape (IbL): the landscape is subjectively perceived by the individual and is constructed from the set of signals that the organism can perceive through its sense organs. The organism collects signals from the outside world of the landscape that surrounds it. The landscape exists through the individual sense organs.

Observed-based Landscape (ObL): the landscape is formed by the potential of the organism that observes its surroundings through intentional cognitive processes. It emphasizes the activity of building the landscape by looking around.

To better understand the theoretical and empirical scope of these levels we pose an example. During an ecology lecture outside the classroom, there are multiple birds chirping. The professor asks the students what

12 Almo, Farina, Andrea Belgrano, "The Eco-Field: A New Paradigm for Landscape Ecology", *Ecological Restoration*, 19 (2004): 107-110.

13 Almo Farina, Ecosemiotic Landscape (Cambridge: Cambridge University Press, 2021); Almo Farina, Andrea Belgrano, "The eco-field hypothesis: Toward a cognitive landscape", *Landscape Ecology*, 21 (2006): 5-17.

14 Almo Farina, *Il paesaggio cognitivo* (Milano: Franco Angeli, 2006).

FIG. 3 Woman in the forest. Image Credit: © *Creative commons* [https://www.ifad.org/en/web/latest/-/regional-meetings-in-preparation-for-the-global-meeting-of-the-indigenous-peoples-forum-at-ifad]

they perceive about the world beyond the classroom. The first Subject X (participating in NbL) answers "nothing." What is happening is that Subject X is not aware of the birds in the garden, the sound of the chirping is an undifferentiated background (no mental image comes in his mind). Subject Y (IbL) hears that there are birds "singing." Birdsong triggers a universal image of generic birds. Subject Z (ObL), on the other hand, recognizes that there are fits in the garden. It means that thanks to its prior knowledge and cognitive recognition processes it can bring to mind the image of an individual of a certain species. The third answer is the one that is given to a lesser extent when some subjects are asked to recognize what they perceive of the environment. And this leads us to ask: why don't we "see" animals and plants (in the city)?

What do we see?

What do we see in the picture? Who's in it? We see a woman surrounded by greenery, probably belonging to an indigenous population. She is naked,

painted on her body. An anthropologist could recognize her cultural signs, area of origin, age, somatic features, etc.

However, the life around her also has its own peculiarities. For example, some of those plants might be subjects of law, if they participate in some environmental protection; or be morally relevant if endangered, and so on. In short, we might ask: "a fly enters the room, is someone or something there?"[15] Every space and every lived landscape presuppose its "narrative," that is, a process of value transformation.

Cultural Removal and Blindness

Not "see" indicates a kind of removal such that we don't recognize both the existence of certain life forms and the identity of some of them. From a semiotic perspective, discursive configurations emerge that show fields of valuations and relationships. We restate a semiotics of forgetting, according to which "from a semiotic point of view, forgetting can be seen both as a moment of fading of meaning, a prelude to a cessation of semiosis, and as that which enables meaning. On the one hand, therefore, forgetfulness is anti-semiosis, i.e., the process that determines what is excluded from semiosis: it is the erased trace or no longer legible, unavailable. On the other hand, it is a "selection mechanism," a way of functioning of culture that decides in this way what must be preserved and what must be forgotten."[16] By simplifying, we could find two instances: the first derives from the functionality of human cognitive processes and the second is a cultural removal. However, we must point out that the two dynamics are not separable, as they occur together or imply each other. Every cognitive bias leads to a structural change in culture, also and especially because biases tend to be shared by individuals of the same species, society, community, ethnicity, or living place.

Let's start with what has been termed "plant blindness." Plant blindness is the inability to see or notice plants in one's environment.[17] It is also the inability to recognize the importance of plants in the biosphere and to the human world. The idea is that the visual system in the brain processes systematically ignore plants in the environment. In addition, culture also plays an important role in the establishment of this blindness. A major cause of blindness and subsequent cultural removal stems from the zoocentric perspective. In many societies, subjects are not educated to understand plants as complex living systems with autonomous behaviours, reactions, and movements. This also belongs to society's misconception of the theory of evolution, imagined as a linear mechanism in which humans are the

15 Roberto Marchesini, *Ospite*, in *A come animale*, eds. Leonardo Caffo, Felice Cimatti (Milano: Bompiani 2015).

16 Francesco Mazzucchelli, *Urbicidio* (Bologna: BUP, 2010), 33. (Our translation).

17 James Wandersee, Elisabeth Schussler, "Preventing Plant Blindness", *The American Biology Teacher*, 61 (2) (1999): 82-86; Stefano Mancuso. *La pianta del mondo* (Milano: Laterza, 2020).

tip. Moreover, it has been pointed out that the increase in urbanization has led to a cultural deficit towards nature and a decrease in the importance of plants in daily life, observing plant life as a mere aesthetic tool.[18]

Blindness to animals is far more subtle. This is because it is not true cognitive invisibility that does not make us see non-human animals. The problem lies that we cannot see animals for what they really are, as their presence has been reduced to pure symbolism. It is a principle that tends to identify animals by their differences from humans or by their usefulness to society. Animals are bearers of meaning only when they are identified as living beings different from humans or when they break into our reality and modify it.[19] The concept of "animal" is a metaphysical category, so the blindness towards the animal world is cultural. The animals thus become an undifferentiated mass,[20] an agglomeration positioned under

FIG. 4 (Image on left) Natural Environment. Image Credit: © *European Wilderness Society* [https://wilderness-society.org/active-no-active-management/]; (Image on right) Artificial Environment. Image Credit: © *Garry Knight* [https://www.flickr.com/photos/garryknight/6235357984]

a category that is identified from the opposition with the human. Beyond metaphysical and ontological contentions about what an animal is,[21] in the contemporary world the relationships humans establish with animals are primarily activated by domestication. We deal with the animals that are inside the house or in the plate. However, today we know very little about the lives of animals. Thus, we fail to notice the lives of animals in cities, where parks, subways, gardens, and basements teem with animals.

Both notions, *plant blindness* and what we might call *animal ideology*,[22] belong to a cultural removal or distortion. It is the human society that makes invisible these life forms that coexist in the city. Non-human plants

18 Mung Balding, Kathryn Williams, "Plant Blindness and the Implications for Plant Conservation", *Conservation Biology*, 30 (6) (2016): 1192-1199.

19 Felice Cimatti, "Quando entra in scena l'animale. Perché l'animalità, e perché proprio ora?", *Fata Morgana*, 14 (2011): 123-140.

20 Bruno Latour, "Where are the Missing Masses? The Sociology of a few Mundane Artefacts", in *Shaping Technology/Building Society: Studies in Sociotechnical Change*, eds. Wiebe Bijker and John Law (Cambridge: MIT Press, 2006).

21 Tim Ingold, *What is an Animal?* (London: Routledge, 1988).

22 The term "ideology" refers to Umberto Eco's analysis in Umberto Eco, *Trattato di semiotica generale* (Milano: Bompiani, 1975).

and animals are *indeterminate living things* because they are part of what has generally been called "Nature". However, the notion of "Nature" is a constructed object. Gianfranco Marrone[23] dealt with the deconstruction of the term, where he presented the difficulty and at the same time the arbitrariness of its use.

Natural vs. Artificial

In the image we see two different ecosystems. The first on the left is considered natural, and the second artificial. If we were to ask why, the answer would appear quite trivial. The space on the right is built and maintained by humans, so it is designed and determined. The lawn is mowed twice a week, the benches have been inserted for some social dynamics, and the sign indicates the way forward. Instead, the natural space seems to be dominated by chaos, a place where life explodes freely. Even the natural ecosystem is determined by a kind of planning and must respect certain conditions. These derive from a relational space that establishes rules. Plants closer to the ground depend on the physiology of taller trees and foliage that allows light to penetrate, there is a dependence on the presence of water, and on the passage of living things that then become fertile humus. This indicates that there are relational rules of coexistence

FIG. 5 Beaver dam above Lundy Lake, California © *Fred Moore* [https://theecologist.org/2015/mar/01/beavers-are-saving-californias-wild-salmon]

determined by the inhabitants of that place. In the same way, the artificial ecosystem too is determined by the passage or not of some non-humans that can modify the aesthetics and ruin the dynamics. The paths as well as the dimensions are provided by a relationship with human physiognomy (the body of the human-animal acts as a measure, but this body is determined by its evolution). In addition, the elements present in the

23 Gianfranco Marrone, *Addio alla natura* (Torino: Einaudi, 2011).

artificial ecosystem, from the bolts of the bench to the tint of the signboard belong to the organic and inorganic chemistry that is also present in the natural ecosystem. There are no chemical elements present in the artificial model that are separate from those existing on the planet and the universe in general. Therefore, this extraction of the artificial from a natural chaotic background is not so obvious nor so clear cut.

We can ask ourselves: are we sure of this clear division between artificial and natural? Can we indicate precisely where the natural ends and what we call the artificial begins? And this subsequently leads us to ask: why is what human do not natural?

The problem of sense and meaning

Let's look at these images of dams. Both are made by animals, by mammals: one is a primate, the other a rodent. Both are performing, at different levels of complexity, modifications on the environment. Both modifications are activated for the survival of a given species. Certainly, one is organized and worked on with technical tools, which are themselves part of a species-specific endowment, and the other with physiological tools of the species. However, even the rodent builds it with the community to which it belongs, activating design processes that contemplate the possibility of building the dam from environmental elements and ecosystem dynamics. It seems then that both species are determining a kind of design of the ecological niche. So, we might ask: are they both urbanistic forms? Do they belong in the plane of environmental design? These questions may be ridiculous, but they serve to question some of the semantic categories that determine the reading plane of an environmental text.

The semantic categories that emerge from this impossibility of equating the activities of two different animals, one of which is *Homo sapiens*, are the following:

1) Human/non-human.

2) Planned/spontaneous.

3) Artificial/natural.

More could be added, but these are the main ones. There is a hidden question: who decides this semiotic threshold? Sense is lost when we begin to blur the edges. When limits and boundaries become crossable and porous thresholds.

It is not only a problem of the plane of sense but also of meaning. If we retrieve the dictionary definition of "artificial" and "natural" we immediately see that the two terms are defined in opposition. The dictionary tells us that "artificial" means "made, obtained by art, as opposed to what is natural." While "natural" means "of nature, about nature or referring to nature, in its broadest and most inclusive meaning." The two meanings mean

nothing when taken separately. They exist only in opposition. This means that deconstructed one of the two terms, the other loses its meaning. Therefore, it seems that they are not simply contrary terms, but of a participatory opposition.[24]

Ecosemiotics can help us rethink the relationship between humans and their natural environment, as well as the relationship between nature and culture. However, there is one place that has embodied these dichotomies since the dawn of humanity: the city. The city seems to be the place par excellence of culture, as opposed to the wilderness. However, even in this place there seem to be dynamics that hybridize and mix the two instances. In the city, multiple forms of life have begun to coexist with humans, despite the continuous removal to cleanse the cities of animals. The idea is that in contrast to what is called Nature there is human Culture, a space that abstracts and extracts itself from naturalness and wilderness. It is thought that the moment cities expand, Nature disappears. And starting from this idea we can ask ourselves: is the city part of Nature?

Megacities

During the next ten years, it is estimated that 10 per cent of the world's population will live in just 41 megacities, located in eastern China, India, and West Africa. A "megacity" is defined as a city inhabited by more than 10 million people. In the past, the limit of city expansion was due to the ability to find resources nearby. With modernity, this problem has been resolved thanks to technological innovations in transport and global trade. The exponential migration from the countryside to urban centers was caused by the industrial revolution during the 19th century, especially in Europe, the United States and Japan. We find in this period the origins of the constitution of megacities.

Modern megacities are urban spaces that, with their expansion, interpenetrate neighboring centers, incorporating them through the phenomenon of the conurbation.[25] They are real urban agglomerations constantly connected with the urban surroundings of cities and smaller towns that are absorbed. The conurbation is a concept that fits into classical ecologism and sees the city as an ecosystem in balance that allows for the education and development of citizens in a heterogeneous space that nevertheless reinforces social cohesion with ecological awareness.

What we can observe in the macro-expansion of cities is that urban space does not take away habitat from fauna and flora but modifies it. In other words, the city has been seen to influence evolution.[26] The cohabitation

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24 Marrone (2008) reveals a similar participatory opposition between nature and culture in the essay entitled "Cultura/natura, città/campagna: il caso GNAC".

25 Patrick Geddes, *Cities in Evolution* (New York: Harper & Row, 1915).

26 Menno Schilthuizen, *Darwin Comes to Town* (New York: MacMillan, 2018).

of many animal and plant species has led to an adaptation of "anthropophilic" life forms. In this sense, it is not possible to separate the city from the rest of the natural environments, just as it is not possible to separate Nature from Culture. Cities are real habitats with the same dynamics as ecosystems considered "natural." The division between /Nature and Culture/, as well as the division between /natural and artificial/, does not exist in the ecological representation of the biosphere. It is an ideology to consider the city as something external to "wild" and "uncontaminated" Nature. There is no such Nature, except in the human imagination. Indeed, taking an ecological look at the entire animal world, one must observe that humans and non-humans alike are ultimately ecosystem engineers. There is a need to deconstruct any ideology about the Nature/Culture divide and re-establish a view of human cities as a natural phenomenon, speaking of urban ecosystems.

However, even if we believe that cities are part of a process of building an ecological niche for the human animal that harbors non-human anthropophilic, we must still confront the exponential devastation and pollution of the elements that sustain the biosphere. Indeed, there are disparate narratives about the "end of the world" caused by the human ecological footprint. These post-apocalyptic narratives, however, fail to focus on the real process that is taking place in the Anthropocene.[27] What may be coming to an end is the life on the planet of multiple species, including our own. But despite reflections that equate the end of our species with the end of the world, these are ideological narratives that bring us back to the center of any ecological dynamic. Beyond the devastation, there will always exist life forms that will subsist despite the catastrophe we are experiencing. Bacteria, viruses, fungi, plants, and small animals will survive and thrive beyond any ideological "end of the world." What will happen is the end of the human world, not the world in general. However, there is an inherent vital resilience that intersects Nature and Culture in cities.

The resilience of life: Co-Species Landscape

The Japanese term *hibakujumoku* indicates a tree that has been exposed to the atomic bombing of Hiroshima and Nagasaki. These are trees that despite the radioactive activity suffered have survived or have been able to regrow from the roots.[28] The resilience of plants derives not only from the need to survive predators but also from catastrophes. The trees that survived, including some that were 500 meters from the epicenter of the

27 James Bridle, *New Dark Age* (London: Verso, 2018); Matteo DeGiuli and Nicolò Porcelluzzi, Medusa (Roma: Nero, 2021); Morton, Timothy, *Humankind* (London: Verso, 2017); Matteo Oreggioni, *Filosofia tra i ghiacci* (Milano: Mimesis, 2021).

28 Database of Hibaku Jumoku Atomic-Bombed Trees of Hiroshima, Unitar.org, United Nations Institute for Training and Research:
https://web.archive.org/web/20170329060433/http://www.unitar.org/hiroshima/sites/unitar.org.hiroshima/files/A-bombed%20trees%20worddoc%20as%20of%20Dec.%202011_1.pdf

bombing, were reborn thanks to a modular subdivision in the hinterland, preserving just enough to be able to reborn.

Another fascinating example of resilience is that of those animals who were left to live after the explosion of reactor number 4 of the Chernobyl nuclear reactor. The "zone of alienation," a 30-kilometer area, became after the human ouster a refuge for multiple animal species that continued to live there.[29] Many animals survived the high levels of radiation, certainly being changed by it. In 2019, 30 researchers from England, Ireland, France, Belgium, Norway, Spain, and Ukraine presented the results of a specific study of the area. The survey included work on large mammals, birds, amphibians, fish, bumblebees, earthworms, bacteria, and soil decomposition. The result showed how the area was home to a great biodiversity. The animal and plant populations currently living in the area have not been greatly adversely affected by radiation. The populations are stable and healthy within the area.[30]

These two examples have a few things in common: in both cases, scientists predicted the impossibility for life to survive such catastrophes. There was an unexpected adaptive response of life to radiation. In fact, it was seen that there was a strong adaptive response that allowed animals to cope with the catastrophe. In the case of the bombed areas, it was predicted that nothing could be born within 75 years, while Chernobyl was considered an area with a deserted future.

The enthusiasm with which disaster-resilient lives have been greeted often leaves space for new relational interpretations between the human and the non-human. We often read about animals "invading" the city. One of the most emblematic cases is that of wild boars, which, despite having often walked through Italian cities, during the lockdown used the city as a habitat and refuge. It is the return of the removed as an unexpected and unforeseen event. When human loses control over other living things it seems that the construct of humanity is dangerously shaken. The wild, the inhuman, the animality, must be dominated.[31]

The question that arises is: are other life forms uncontrollable or do we simply not know how to live with them (without anthropomorphizing them)? The proposal for this analysis is that we should begin to move from an NbL and IbL to an increasingly accurate ObL through semiotics of the environment. By semiotics of the environment, we mean an activity of reading, interpreting, and understanding other forms of life. It is ultimately an education in coexistence that is lacking. It is an activity of reading,

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29 https://theconversation.com/chernobyl-has-become-a-refuge-for-wildlife-33-years-after-the-nuclear-accident-116303

30 TREE Project (Transfer-Exposure-Effects): https://tree.ceh.ac.uk/

31 A very relevant discourse could be activated about the uncontrollability of life and the power relations that are established from this resistance. A very profound reading of this dynamic was done by Foucault on the question of the cynics. Michel Foucault, *Le courage de la vérité* (Paris: Gallimard, 2009).

interpreting, and understanding the forms of life in the maintenance of the biosphere. Semiotics can reinterpret the relationships we have with other living beings in different ecological systems, such as the city, the forest, and the sea; but also, everything that can be interpreted as an ecological text: highways, bridges, gardens, and landfills.

We propose below a further proposal that follows the attempt to educate individuals in the recognition and understanding of other living beings. The aim is to form a Co-species Landscape (CsL). The "Co" in Co-species stands for coexistence-species, but also a cohabit-species understood as peaceful coexistence, a mutual adaptation and forbearance. "Co" understood as a prefix means "all" or "together", implying a simultaneous existence.[32] It is a mode of coexistence from an understanding of other species. It concerns respect for sovereignty and territorial integrity, as well as acceptance of the existence of the other. It is the activity by which it is possible to design a landscape that is hospitable to the multiple forms of life that emerge with their meanings.

As the ecosemiologist Timo Maran also argues:

> Using modelling and umwelt analysis, humans can contribute to this process by creating meaningful structures and resources for other species. Examples of such semiotic engagements could be growing different vegetation layers in gardens and parks, preferring natural soils and mulches, creating water bodies and open flyways, preserving wooden debris and fallen leaves, etc. All these activities raise the possibility that nonhuman species find meaningful engagements in our proximity.[33]

CsL is established through a life form ready for coexistence on a planet that is in ruins. It is a design of an intraspecific collaboration to overcome this historical moment called Anthropocene.[34] In this way we should begin to design a Co-Specific landscape, integrating the cohabitation of cities. As is now being pointed out, there is a growing need to learn to cohabit in the Anthropocene and to design a post-Anthropocene that reintegrates other life forms as active participants in human existence in the biosphere. A post-Anthropocene that provides for our survival will necessarily be a space of coexistence and re-engagement with other species.

Making naturalcultural communities

The notion of "naturcultural" indicates a synthesis of nature and culture

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32 The proposal takes inspiration from the Biennale of Architecture 2021, held in Venice, entitled "How will we live together?", where art installations represented Co-Habits spaces to imagine a new future together.

33 Timo Maran, "The *Ecosemiosphere* is a Grounded Semiophere", 527.

34 Nicola Zengiaro, "Eco-realism at the Time of Catastrophe: Imagining Multi-species Points of View to Photograph the History of the World", *International Journal of Anthropology*, 35 (2) (2020): 23-35.

FIG. 6 *Human Dam Theodore Roosevelt Dam* [https://commons.wikimedia.org/wiki/File:Theodore_Roosevelt_Dam_%288655562922%29.jpg]

that recognizes their inseparability in ecological relationships that are both biophysical and social. Introduced by feminist philosopher Donna Haraway to describe intertwined multispecies histories, the term illuminates new ways of thinking about the agency and power, difference, and sociality of life forms.[35] The term has no single definition. Rather, it represents a vibrant and unruly spectrum of transdisciplinary approaches that are unified by a common argument: participating in worlds that are more than human requires changing the methods of study. In other words, dissolving the boundary between nature and culture means radically remixing the arts, humanities, social sciences, and natural sciences. In this multidisciplinary context, we use semiotics to account for a reinterpretation of the relational meanings between human and non-human within cities as a complex ecosystem. We propose the following theoretical scenarios to reinterpret coexistence.

Making community build naturcultural cities:
1) Recasting these spaces abandoned by humans that become the refuge for many animal and plant species. The reference is the "Third Landscape"

35 Serenella, Iovino and Serpil, Opperamann, *Material Ecocriticism* (Bloomington: Indiana University Press, 2014).

proposed by Gilles Clément[36] in which places abandoned by man, places therefore invisible to the human eye, can generate a refuge.[37] These are parks, nature reserves, but also uninhabited areas, roadside weeds, brambles, brushwood, and large abandoned industrial areas. These are places where human presence has given way to the birth of ecological change. The human/nature relationship reveals in this context that it can be the human that is removed from a completely non-human living space. It is a culturally based urban regeneration for areas of margin. Places that, also thanks to human intervention, could host more life. It is a collaborative approach to leaving a space completely absent of humans. It is an activity by subtraction, a community based on the residue, derived from leaving space to the set of biological beings that make up the territory. A landscape that expresses neither power nor submission to power.

2) Creating bonds or the making of kinship (Donna Haraway's making kin) leads us to rethink the city from a posthuman perspective. The posthuman city is a hybrid space in which one's presence does not weigh on the surrounding space. It is the hybridization and crossbreeding of urban structures, treating each structure as a trajectory of coexistence. It is a practice of living radically different from how we have thought about it until now, based on welcoming, inclusiveness and multiplicity, thus decentralizing the position of Homo sapiens. In the centripetal movement offered by urbanism beyond the human, a shift of the signifier stands out.[38] This allows us to reconsider the coexistence of life without any hierarchical relationship.

Making community to build naturcultural populations:
1) Experiences of existential sharing made of a heterogeneous community are shown by Ecovillages. The attempt of such communities is to reduce their impact on the planet and to reintegrate their existence within extra-urban natural dynamics. The communities are organized and constituted according to models of sustainable living from ecological, spiritual, socio-cultural, and economic points of view. The lived spaces become laboratories of social and educational experimentation based on ethical perspectives related to social equity, spiritual harmony, and ecology. The space becomes a place of care, and awareness and anticipates a non-violent culture towards other forms of life. It is promoted in this sense the culture of peace in defense of nature and landscape in relation to the protection of primary common goods (water, air, soil, forests) and the protection of biodiversity in all its forms.

36 Gilles Clément, *Manifeste du Tier paysage* (Paris: Sujet/Objet, 2004).

37 Cal Flyn, *Island of Abandonment* (New York: Viking, 2021).

38 Homi K. Bhabha, *The Location of Culture* (London: Routledge, 1994).

2) Educating a natural gaming semiotics[39] in which people are educated to rediscover urban nature through play. A practical example is the City Nature Challenge that has taken off in the United States, an annual challenge in which citizens try for a week to document local biodiversity as a challenge. Or the group la *Belles de Bitume* that organizes an ecological street art in which you have to identify wild plants in city streets.

In these examples, the culture begins to change radically: from a naïve conception of ecology to a new model and project of life. In all cases, sustainability is sought on ecological, social, spiritual, and economic levels.

Anthropocene, Capitalocene, Plantationocene, Chthulucene, Novacene: is Holobiocene the next?

Is there such a radical form of coexistence? Which model should we take inspiration from to contemplate a complete coexistence among life forms? The theoretical proposal is for an existential redefinition. Is it possible to live as a holobiont?

A first definition of holobiont is "an organization formed by an ecosystem of biological agents that do not share the same DNA but interact symbiotically in order to maximize the fitness of the global unit."[40] In this sense, the idea would be to establish prolonged interactions that can make the different entities evolve as one. Existential mutuality should lead to a supportive relationship under changing ecological conditions. The important aspect is that coexistence can be established resulting from sharing by spatial and functional proximity, while each maintaining its own autonomy. The goal of this coexistence is to optimize overall fitness in the convergence of community spaces. The city as an ecological space can be read and interpreted through bio-psycho-social aspects and especially with respect to semiotic processes.

The notion of holobiont applied to the city shows how the different lives are linked by a constant precariousness.[41] Redefining this epoch as "Holobiocene", in a provocative way, we can integrate all together the various labels that have been given to this period we are living in. The idea is to hybridize them as if we were living in a "living period". Time is a strange chimaera that includes us as part of its monstrous form.[42] The

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39 This is my own definition under development. The idea is that through the use of gamification, the meaning and thus the value of various objects can be changed. In other words, by presenting typical elements of competitive games (i.e., prizes, levels, rewards, accumulation of points, rankings) applied to a semiotic analysis of the environment (ecosemiotics), a different awareness of the value of the environment can be established.

40 Lynn Margulis, René Fester, *Symbiosis as a Source of Evolutionary Innovation* (Cambridge: MIT Press, 1991).

41 Emanuele Coccia, *Metamorfosi* (Torino: Einaudi, 2022).

42 Donna Haraway, *Le promesse dei mostri* (Roma: Derive Approdi, 2019).

idea, already initiated by Haraway and other authors,[43] is to deconstruct the centrality of the human as the most significant agent.[44] We are precarious because we are dependent on one another, bound by ties to entities that compel us to care for them.[45] In the city and in communities there are paths, boundaries, borders, identities, in which, however, there are overlaps and encroachments. Latour[46] tells us that in this world we live and die as Earthlings, within shared critical zones.[47] The concept of environment is meaningless because it is impossible to demarcate the boundary that separates an organism from its surroundings.

Post-Anthropocene Life Forms

In conclusion, how do we envision a posthuman existence?[48] To prevent the catastrophic age in which we find ourselves, what form of life should we embody? A life form that has undergone evolutionary adaptation and cultural evolution at the same time. And, from the methodological tools of ecosemiotics, we can say that the posthuman is not an ecological being, but an ecosemiotics life form. What is the difference?

In general, ecologism is a political ideology based on the position that the non-human world is worthy of moral consideration and that this should be taken into account in social, economic and political systems. Ecosemiotics is the reading, interpreting, and understanding of the relationships between the components of an ecosystem (the city, the forest, the biosphere).

In this way, we can schematize the division between ecosemiologist and ecologist in a very general way. In this division, the perspectives concern how to act in accordance with a certain type of theoretical assumption.

1) Ecologist tends to act in accordance with a moral duty (I do it because I must: there is a climate and ecological crisis) transcendental → ethical level.

2) Ecosemiologist tends to modify one's behavior (pragmatism) in relation to situated interpretation (I do it because I recognize the need) → aesthetic level.

The posthuman is an ecosemiologist who interprets the world as a complex system made of overlaps. It will be a life form that protects

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43 Timothy LeCain, "Against the Anthropocene. A Neo-Materialist Perspective", *International Journal for History*, Culture and Modernity, 3 (1) (2015): 1-28.

44 I have argued this thesis in: Nicola Zengiaro, "The Time of Materials: Rethinking the Anthropocene from Stones", Versus, 134 (2022a).

45 Donna Haraway, *Staying with the Trouble* (Durham: Duke University Press, 2016); Anna Tsing, et. al., *Arts of Living on a Damage Planet* (Minnesota: University of Minnesota Press, 2017).

46 Bruno Latour, *After Lockdown: A Metamorphosis* (Cambridge: Polity Press, 2021).

47 Bruno Latour, *Facing Gaia* (Cambridge: Polity Press, 2015).

48 Rosi Braidotti, *The Posthuman* (Cambridge: Polity Press, 2013); Francesca Ferrando, *Philosophical Posthumanism* (New York: Bloomsbury, 2019).

and designs the world to come, a future where we will be called upon to understand otherness. In this sense, the global pandemic has shown us how fragile ecosystems are, from the human body to the forest, passing through the economy and politics. The virus has shown us once again how interconnected is everything and how we should know to solve catastrophes in a united way, in a global design that takes into account the aesthetic immersiveness that we are required to recognize and know how to interpret.

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