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Uexküll's *Kompositionslehre* and Leopold's "land ethic" in dialogue. On the concept of meaning

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Abstract. Uexküll's famous umwelt theory, which is simultaneously a theory of meaning, remains almost unknown in American environmental thought. The purpose of this article is to create a dialogue between the umwelt theory – a source of inspiration for biosemiotics – and one of the major figures of the environmental thought, namely Aldo Leopold. The interest of this dialogue lies in the fact that the environmental thought has much to gain by relying on Uexküll's theory of meaning and, conversely, that Leopold's land ethic is likely to extend Uexküll's thought in terms of ethics.

Keywords: land ethic, Leopold, Uexküll, umwelt

Introduction

The purpose of all sciences is to establish "facts" and falsify hypotheses; however, the limits of their legitimacy or theoretical authority, as well as their reason for being of concrete interest are often forgotten. Theoretically, these hypotheses fall within the scope of paradigms, which is to say that they also rely on presuppositions or *pre*judgements in the etymological sense of the term. Conveyed by concepts and metaphors – that of the book or reading for instance – these prejudgements are metaphysical, poetical, even political in nature. Contrary to scientism's common trend, Karl Popper thus reminded us:

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> The empirical basis of objective science has thus nothing 'absolute' about it. Science does not rest upon solid bedrock. The bold structure of its theories rises, as it were, above a swamp. It is like a building erected on piles. The piles are driven down from above into the swamp, but not down to any natural or 'given' base; and if we stop driving the piles deeper, it is not because we have reached firm ground. We simply stop when we are satisfied that the piles are firm enough to carry the structure, at least for the time being. (Popper 1992: 93–94)

In other words, hypotheses, theories and argumentations, and experimentations intended to justify them rely on a foundation of values, which – like, e.g., moral and political values – are a matter of convictions and beliefs. These convictions determine priorities in the field of scientific investigations and in the frame of mind in which they are undertaken. It is undeniably more comfortable to go no further than the level of falsifiable empirical researches; however, having dared to venture on the ground of the beliefs is precisely what is peculiar to those who, like Heisenberg in the field of physics, have opened new doors to research.

What then renders hypotheses and scientific theories, particularly their reason for being, serious? In other words, why is it more interesting to elaborate hypotheses regarding the causes of such and such diseases than to discover a rule that governs the statistical repartition of guests at a dinner party who prefer peas, and those who prefer cabbage? As put forward for instance by Nietzsche when he questions the usefulness of historical science in life, or by Husserl when he describes the crisis of European sciences, the reason for these researches becoming established depends on either the greater or less major significance they have in our life.

And yet what is now significant in our life is how we are to conceive our relationship with nature and, therefore, how we have to establish an environmental policy matching today's challenges. At this level, it would be naive to expect an answer from technosciences and, to be specific, from the environmental science, since the logic of their development is governed by contrary values and, in reality, most often by the sole logic of economic performance. As discrepancies between representations and values or ideologies related to nature determine the diversity of environmental policy, I set out to retrocede prior to the development of positive sciences to consider the biological thought of Jakob von Uexküll (1864–1944), and particularly his doctrine of meaning which constitutes one of the sources of inspiration for biosemiotics. The concept of meaning is indeed central in the definition of biosemiotics such as, for example, given by Jesper Hoffmeyer:

> According to the biosemiotic perspective, living nature is understood as essentially driven by, or actually consisting of, semiosis, that is to say, processes of sign relations and their signification – or function – in the biological processes of life. (Hoffmeyer 2008: 4).

However, my goal is above all to contribute to the implementation of a dialogue between traditional ways of thinking on either side of the Atlantic, which too often are oblivious of each other. I will therefore return to the doctrine on meaning within the scope of a confrontation between Uexküll and Aldo Leopold (1887–1948), two great figures who renewed the conception humanity had of nature. I will start by describing the general aspect of the thought of these two figures, and proceed to consider what each of them could learn from the other regarding the doctrine of signs and, finally, the ethics that stems from it; in other words, the invitation to "respect nature" as concerns the former, and the preservation of "the integrity, stability and beauty of the biotic community" (Leopold 1987: 224–225) as regards the latter.

Uexküll's umwelt and *Komposition* and Leopold's "land"

Uexküll and Leopold did not have a chance to get to know each other's work. Both published standard reference academic works: the first edition of *Theoretische Biologie* (1920) by Uexküll was quickly translated into English, but Thomas Sebeok does not hesitate to attribute its nearly non-existent impact to the appalling nature of the translation made by someone who either barely knew German or did not understand what he was translating (Sebeok 1991: 104). As for *Game Management* (1933), which was published the year the University of Wisconsin elected Leopold as the Chair of Game Management, it is a reference work that has not yet been translated into German even today. Moreover, the works that have made the thinkers famous were published or translated too late. Thus, Uexküll could not have read *A Sand County Almanac* from 1948, which is like Leopold's will; and, probably because of World War II, *A Foray into the Worlds of Animals and Humans* (1936) and the *Theory of Meaning* (1940) were transferred into English rather late. The former was only translated in 1957 in a collective work entitled *Instinctive Behavior*, and the latter appeared as late as in 1982, in a special issue of the review *Semiotica* devoted to Uexküll.

Although they refer to falsifiable experiences, these works are characterized by a descriptive or narrative style. *A Foray* invites us to take a walk, a stroll or a foray through gardens and the book is subtitled "a picture book of invisible worlds", while Leopold's book is an *Almanac* in the literary sense of the term, followed by a few essays. Thus, their purpose is very modest, yet simultaneously quite ambitious insofar as, instead of first discovering such or such "results" of scientific research, they support several theses by inviting us, each in their own way, to transform the frame in which we apprehend natural phenomena. As we will see further

on, Uexküll and Leopold also suggest that this transformation implies that a sense of nature overshadowed by today's urban way of life can be found again. However, their works differ on two points that should now be clarified.

If Uexküll experienced a certain familiarity with the Estonian countryside in his childhood, he elaborated his thought within the scope of his studies in laboratories of marine biology such as those in Roscoff, Biarritz or Naples. Leopold, on the contrary, had the opportunity to observe the repercussions of human life on nature first as a forest ranger working for the US Forest Service in national parks and then during his stays in his shack in Wisconsin; in this respect, Leopold's descriptions could be compared to those of Thoreau in *Walden*. This difference accounts for a more lyrical and metaphysical style in the *Almanac*, whereas Uexküll's is more conceptual. However, this difference is connected to yet another one which stems from one of Uexküll's major sources of inspiration.

His research led him to support the idea that the perception and activity of living organisms are eminently subjective, in other words, they depend on the specificity or singularity of each organism. Uexküll thus considers that he has completed the Copernican revolution of Kantian philosophy in the field of biology. This means that we cannot speak of "objects" of perception or action that would be independent from the subject to which they are attributed. This is also the meaning of the famous notion of umwelt, or surrounding world, on which Uexküll imposes a conceptual notion and which has recently and explicitly been taken up by certain cognitive ethologists or neurobiologists (Vauclair, Kreuzer 2004; Berthoz, Christen 2010): umwelt means an environment centred on one subject, an environment made up of what is significant for a given subject.

The idea of such subjectivity is, however, lacking, at least at first, in traditional American ecology, for example, in Leopold's works. This results in a first difference between Leopold's concept of "land" and that of umwelt. Indeed, in Uexküll's works the notion of *Komposition* is the one most closely akin to "land". This notion reveals the intertwining and interaction between several umwelten. However, in Leopold's *Almanac* the connotation of the American concept of "land", which also means a "community", is *wilderness* which – although the term is originally German – is a connotation umwelt lacks. However, to what extent is it possible to find echoes of Uexküll's biological thought in the ecological thought of Leopold whose knowledge first relies on his experience as a forest ranger?

Bedeutung and significance

A more implicit way of thinking of the subjectivity of "land" and, rarely, another singular concept of meaning can be found in Leopold's work. In other words, the

importance of the two notions of subjectivity and meaning is far from obvious, but fully stands out when contrasted with Uexküll's thought. Leopold indeed indicates another level of meaning which is different in nature from that which determines the perception and behaviour of living organisms: the more encompassing level of the community of a *Komposition* or "land". Although neither Uexküll nor Leopold create a terminological distinction between these two levels of meaning, this difference of perspective corresponds to the German distinction between *Bedeutung* and *Bedeutsamkeit*, that is to say, between meaning on the one hand and significance on the other hand.

Leopold's last *wildlife* class thus takes up the classic metaphor of reading the book of the world to distinguish these two levels of meaning:

> The object is to teach you how to read land. Land is soil and water, birds and beasts. Each of these 'organs' has meaning as a separate entity, just as finger, toes and teeth have. But each has a much larger meaning as the component parts of the organism. […] I am trying to teach you that this alphabet of 'natural objects' […] spells out a story, which he who runs may read – if he knows how. Once you learn to read the land, I have no fear of what you will do to it, or with it. (Leopold 1991: 336–337)

Therefore, the meaning is read at the level of a given organism on the one hand – this is its inherent meaning, its inherent value, value here being also understood in the pictorial sense of the term; and from a collective perspective on the other hand – this is its meaning as part of a totality. As far as the first level is concerned, Leopold's famous sketch "Thinking like a mountain" states in an amazingly Uexküllian style that the deer, the pine, the farmer… each understands the "deep chesty bawl" of a wolf from their own point of view:

> To the deer it [the wolf's howl] is a reminder of the way of all flesh, to the pine a forecast of midnight scuffles and of blood upon the snow, to the coyote a promise of gleanings to come, to the cowman a threat of red ink at the bank. (Leopold 1987: 129)

But only to add a little further on – and we thus reach the second level of meaning – that there is a deeper, hidden meaning to this deep chesty bawl from the more encompassing perspective of the land inhabited by the wolf: "Yet behind these obvious and immediate hopes and fears there lies a deeper meaning, known only to the mountain itself" (Leopold 1987: 129).

With this meaning of a land for the community in mind, Leopold regrets the extinction of the wolf which he witnessed at the time and which destroyed the ecological equilibrium of that land. It is indeed obviously no easy task to understand

the assertion at the end of that sketch which states that this hidden meaning of the wolf's "deep chesty bawl" is "long known among mountains" as if a mountain could "know" something.

However, the mountain here does not designate a geological reality: this term describes a community made up of organisms as well as their environment comprised of soil and the water that irrigates it; and this sketch insists on the need to take the point of view of the whole to consider the meaning of each of its parts. Leopold understands the meaning of "land" not only in terms of interactions between its constituent parts, which are likely to be objects of empirical research, but also in terms of subjective experiences of an aesthetic nature – experiences to which we, most of the time, deny the possibility of us having accessed knowledge. Even if the demarcation line between science and poetry is legitimate, we nonetheless know that beauty, "elegance", is a factor that determines the preference of a mathematical demonstration or a theory in physics over another. In this respect, Leopold uses irony regarding the prohibition that prevents the passing from one style of discourse to another, the "taboo which decrees that the construction of instruments is the domain of science, while the detection of harmony is the domain of poets" (Leopold 1987: 153) – which does not, however, imply that these could be confused.

In parallel with how Uexküll used the term "melody" to refer to the mobility, namely the allure and rhythm, of an organism interacting with its umwelt as well as to the life of a *Komposition*, Leopold moves to a poetical register aimed at having the subjective experience of the melody of the land's great orchestra shared:

> The song of a river ordinarily means the tune that waters play on rock, root, and rapid. The Rio Gavilan has such a song […] This song of the waters is audible to every ear, but there is other music in these hills, by no means audible at all. To hear even a few notes of it you must first live here for a long time, and you must know the speech of hills and rivers. […] you may hear it – a vast pulsing harmony – its score inscribed on a thousand hills, its notes the lives and deaths of plants and animals, its rhythms spanning the seconds and the centuries. (Leopold 1987: 149)

It seems to me that it is also this possibility of apprehending an umwelt or *Komposition* in a sensitive manner that Uexküll recognizes, for example, in Rilke's poetry when he writes to him: "You have proved your remarkable talent for biology in your poem 'The Panther', and particularly in comparative biology" (G. von Uexküll 1964: 132).

Within the scope of this sensitive approach to the unity and beauty of a place, Leopold uses the term "meaning" in a sense that has no equivalent in Uexküll's

work to refer to what constitutes the principle or essence of a "land" and is likely to be perceived by them who pay close enough attention to it:

> Everybody knows, for example, that the autumn landscape in the north woods is the land, plus a red maple, plus a ruffled grouse. In terms of conventional physics, the grouse represents only a millionth of either the mass or the energy of an acre. Yet substract the grouse and the whole thing is dead. An enormous amount of some kind of motive power has been lost. It is easy to say that the loss is all in our mind's eye, but is there any sober ecologist who will agree? He knows full well that there has been an ecological death, the significance of which is inexpressible in terms of contemporary science. (Leopold 1987: 137–138)

In other words, if the possibility to decipher the significance of "land" implies that we pay close enough attention to it and that we are sufficiently familiar with it, here the significance refers to what is commonly known as the "spirit of the place", and it is also in this sense that Uexküll speaks of the umwelt – which in reality is a *Komposition* – or the melody (Uexküll 1913: 57, 130) of the collective entity of the city of Naples. However, it is remarkable that Leopold expressed this apprehension of the meaning of a land in the language of Kant's philosophy: the spirit of the place embodied, for instance, by the grouse is indeed qualified as noumenon. Here, Leopold is appropriating, but in an indirect and unorthodox fashion, Kant's famous distinction between phenomenon and noumenon; namely, in Kant's language, the distinction between what we are permitted to know and what we are only allowed to think:

> A philosopher has called this imponderable essence the *numenon* (*sic*) of material things. […] The grouse is the *numenon* of the north woods, the blue jay of the hickory groves, the whisky-jack of the muskegs, the pinonero of the juniper foothills […] (Leopold 1987: 138)

In the 1920s, Leopold indeed discovered the American translation of the Russian philosopher Piotr D. Ouspensky's work entitled *Tertium Organon* which states in its Chapter 10:

> In the changing of season; in the yellow leaves of the autumn with their smell and the memories they bring; in the first snow dusting the fields and adding a peculiar freshness and sharpness to the air; in the waters of spring, in the warming sun and the awakening but still bare branches through which gleams the deep blue sky; in the white nights of the north and in the dark, humid and warm tropical nights spangled with stars – in all these are the thoughts, the feelings, the moods, or more correctly, the expression of feelings, thoughts and moods of that mysterious being. Nature. (Ouspensky 2004: 199)

From this, Ouspensky distinguishes the phenomenal and noumenonal levels of how we apprehend nature:

> [...] if we look/row *our* side, from the side of phenomena, we must admit that every phenomenon, every object has a mind. A mountain, a tree, a river, the fish in the river, drops of water, rain, a plant, fire – each separately must possess a mind of its own. Looking/row *the other side* – the side of noumena – one is forced to say that everything and every phenomenon of our world is a manifestation in our section of some incomprehensible thinking and feeling belonging to another section and possessing there functions which are incomprehensible for us. One intelligence there is such and its function is such that it manifests itself here in the form of a mountain, another in the form of a tree, a third in the form of a fish, and so on. Phenomena of our world are very different. (Ouspensky 2004: 199–200)

Independently from the fact that Leopold, and even less Uexküll, would not appropriate this use of the notion of "mind", Ouspensky then turns to the *noumenon*: "Every stone, every grain of sand, every planet has a *noumenon,* consisting of life and of mind and connecting them with certain *wholes* larger cosmoses incomprehensible to us" (Ouspensky 2004: 200).

Therefore, the *noumenon* as understood by Leopold constitutes so to speak the signature of a "land" or, in Uexküll's language, *Komposition*, in what is singular, unique about it. Therefore, the extinction of the grouse in the north woods means the loss of the very essence of these woods, their transformation into a place that has become insignificant, anonymous and reducible, for instance, to resources that the paper industry can exploit. The perception of the noumenonal meaning is not only a matter of intellectual process but also a matter of affect, and this is the reason why Leopold suggests that children are also capable of it. The *Almanac* thus states that "when school children vote on a state bird, flower or tree, they are not making a decision; they are merely ratifying history" (Leopold 1987: 26).

This brings me to my third and final point which is dedicated to the ethical implications linked to such a way of apprehending natural phenomena.

To take the point of view of a birch and to think like a mountain

The holism found in Uexküll's and Leopold's ideologies has a direct effect on the way they conceive the relationship linking humanity to nature. In accordance with the fact that people, like all living creatures, belong to an environment, which itself belongs to *Komposition* with which it interacts, Uexküll and Leopold demand that

our sense of belonging to communities be broadened. According to the Kantian distinction between understanding (*Verstand*) and reason (*Vernunft*), in *Das Sinn des Lebens* (1947) Uexküll thus suggests that we broaden our perspective beyond what he calls biology of understanding to adopt, for instance, the "point of view of the silver birch" (Uexküll 1947: 32), which is to say consider the world from the perspective of what is significant to the silver birch. This conversion of perspective which he may inappropriately qualify as a vision from "the inside" (Uexküll 1947: 63) opens up a new horizon for research. However, Leopold's conception of this broadening the community to which we belong is at first sight clearly different, as seen in the work of one of his commentators, John Baird Callicott.

Callicott indeed conceives this expansion in three phases corresponding to three spheres of belongingness. The first sphere is comprised of family, friends, neighbours and compatriots; domestic animals, pets and animals for slaughter which do not belong to natural ecosystems, make up the second sphere; and – in accordance with what Charles Elton's *Animal Ecology* (1927) suggested – the last sphere is made up of the biotic community, also including soils (Callicott 1999: 168). Furthermore, this invitation corresponds to Hierocles' stoic precept, although the expansion of the stoic wise man's sense of belonging to a greater community does not go beyond the human sphere, whereas Leopold supports the idea of a biotic "citizenship" (Leopold 1987: 204). The main difference from Uexküll's suggestion is due to the fact that the metaphor of the three spheres is explicitly anthropocentric.

However, this anthropocentrism is nuanced by two passages in the *Almanac* which bring Leopold closer to Uexküll: those that are an invitation to think like a trout or a mountain. Think like a trout when it is hiding – and this is how the fisherman thinks when he wonders, "what would a self-respecting trout do?" (Leopold 1987: 37). Think like a mountain (Leopold 1987: 129–130) if by this term we mean the community made up of the deer and wolves populating it, the vegetal life that inhabits it and the soils that nourish them. The first passage is about adopting the point of view of a living creature, and the second one is about taking that of a *Komposition*. However, like Uexküll who, in the last lines of *A Foray*, goes as far as to consider the even more encompassing level of nature, Leopold ventures considerations related to the entire set of these *Kompositionen* or "lands", anticipating James Lovelock's Gaia hypothesis from 1970.

Referring to Ouspensky, the last section of "Some fundamentals of conservation in the Southwest" (1923) entitled "Conservation as a moral issue" thus claims:

> He then states that it is at least not impossible to regard the earth's parts – soil, mountains, rivers, atmosphere, etc. – as organs or parts of organs, of a coordinated whole, each part with a definite function. And, if we could see this whole, as a whole, through a great period of time, we might perceive

> not only organs with coordinated functions, but possibly also that process of consumption and replacement, which in biology we call the metabolism or growth. In such a case we would have all the visible attributes of a living thing, which we do not now recognize to be such because it is too big and its processes too slow. And there would also follow that invisible attribute – a soul or consciousness – which […] many philosophers of all ages ascribe to all living things and aggregations thereof, including the 'dead' earth.
>
> There is not much discrepancy except in language, between this conception of a living earth, and the conception of a dead earth, with enormously slow, intricate, and interrelated functions among its parts, as given us by physics, chemistry, and geology. […] Possibly, in our intuitive perceptions, which may be truer than our science and less impeded by words than our philosophies, we realize the indivisibility of the earth – its soil, mountains, rivers, forests, climate, plants, animals, and respect it collectively, not only as a useful servant but a living being, vastly less alive than ourselves in degree, but vastly greater than ourselves in time and space […]. (Leopold 1991: 95)

The ethical result: respect and preservation

The expansion of our sense of belonging to a vaster community or vaster communities has an ethical dimension for Uexküll as much as for Leopold. The former writes for example in "*Das Tropenaquarium*" (1908): "The great task of the tropic aquarium is to re-implant in the public, who has today an interest for nature, the respect for it. Nature is wiser and has a wider horizon than the most intelligent Berliner."[1] (My translation – J.-C. G.) However, Leopold is struck by two phenomena that he witnessed at the time and which put his land ethic in a more dramatic light. On the one hand he is struck by the fragility of umwelten and *Kompositionen* whose destruction he witnessed in the United States and which made him say: "Man always kills the thing he loves, and so we the pioneers have killed our wilderness" (Leopold 1987: 148), and, on the other hand, by the "world-wide pooling of faunas and floras" (Leopold 1987: 217). In other words: "Two changes are now impending. One is the exhaustion of wilderness […]. The other is the world-wide hybridization of cultures through modern transport and industrialization" (Leopold 1987: 188).

If the repercussions of the first change are the disruption of the "speech of the hills and the river" (Leopold 1987: 149) and the "song of lands" (Leopold 1987:

[1] "Darin besteht die große Aufgabe des Tropenaquariums, dem Publikum, das heutzutage wohl Interesse für die Natur hat, den Respekt vor der Natur wieder einzupflanzen. Die Natur ist klüger und weitsichtiger als der gescheiteste Berliner" (Uexküll 1913: 122). The end of "*Das Tropenaquarium*", a little bit further, quotes a poem of Goethe: "Was kann der Mensch im Leben mehr gewinnen als daß sich Gott-Natur ihm offenbare" (*Antepirrhema*).

150), as well as the extinction of the "wolf's call" (Leopold 1987: 129), it can be understood as an address demanding a response similar to how Hans Jonas' *Phenomenon of Life* conceives the vulnerability of nature as a call for solicitude and care. From that moment on, because the perception of ecological devastation implies the necessity to remedy it, the meaning acquires an ethical sense.

Uexküll did not have such an awareness of the disorder in the ecosystems caused by the intervention of humankind. At the time, the Estonian and German landscapes had not undergone transformations as radical and fast as those occurring in America, including the extermination within a few decades of the American bison (Mayer 1958) or passenger pigeon (Muir 1913: 163–166), or the Dust Bowl catastrophe. In this respect, Leopold, who travelled to Germany to study European forestry methods in 1935, also suggested that Western Europe "has a resistant biota" (Leopold 1987: 219). However, it is indeed remarkable that Chapter 8 of Uexküll's *Theory of Meaning* indicates a precise example of the second change mentioned by Leopold: the disturbance that the introduction of the South American prickly pear caused in Australia. Although the local population used it widely as a fencing device for farms and gardens, when confronted with the spread of this seriously invasive prickly bush to the detriment of local plants a futile attempt was made to get rid of it with fire and pesticides. It was only when its natural predator, an American caterpillar was imported that it was exterminated. However, this remark is exceptional in Uexküll's work and, because this disturbance was temporary, the remark does not lead him to elaborate an ethic that would match our ecological era.

In this respect, it seems to me that, on the one hand, the "respect" of nature advocated by Uexküll should be conceived more in terms of obligations than rights. Like Ernst Haeckel who invented the term ecology, and – although in a different way – like Uexküll for whom comparisons between natural phenomena and musical works are quite common, Leopold suggests, on the other hand, that we rely on the background of an aesthetic conversion of perspectives to conceive such an ethic. Indeed, Leopold considers the capacity to perceive the beauty of natural phenomena and the matter of conserving it as an essential vector of the "land ethic". He also declares that: "the good life of any river depend(s) on the perception of its music", which implies "the preservation of some music to perceive" (Leopold 1987: 154). In other words, if the land ethic is founded on the land aesthetic, ethics first calls for progressive development and refinement of our sense of perception. There is admittedly no equivalent of the American fascination with the wilderness in Uexküll's work. However, it is remarkable that far from confining itself to it, Leopold's land ethic suggests that such an education of the sense of perception is possible even in an apparently poor land like "a sand county" or an urban environment, because "the weeds in a city lot convey the same lesson as the redwoods" (Leopold 1987: 174).

Conclusion

Despite what separates them, it therefore seems to me that the emphasis Uexküll's subjective biology puts on the meaningful dimension of how the living apprehend their umwelt is likely to be echoed by American environmental thought with which it shares a certain holism, particularly as regards the thought of Leopold. As we have seen, one of the features that distinguish Leopold from Uexküll indeed stems from the former's more radical criticism of the abstraction of modern science as soon as it is no longer underlaid by the concern with answering the questions of what Husserl called the world-life. If an ideology like that of Leopold's would do well to open up to Uexküll's doctrine of meaning, the fact remains that the few passages of Leopold's work related to the significance or meaning of a "land" or *Komposition*, to its *noumenon*, can also provide an extension to this doctrine of meaning. Secondly, if Uexküll and Leopold think along the same lines when they suggest that we must conceive umwelten and natural *Kompositionen* by adopting their points of view, Leopold's invitation to lay the foundations of ethics in an aesthetic conversion goes in the same direction by developing Uexküll's reflections in matters of ethics, which are too scarce due to a reduced awareness of the sometimes destructive effects of human intervention in natural phenomena. If the meaning is always a matter of perceiving meanings, here the sense of the term "meaning" becomes ethical.

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Kompositionslehre Юкскюля и *land ethic* Леопольда в диалоге. О концепте «значение»

Известная юкскюлевская теория умвельта, которая является одновременно теорией значения, остается почти неизвестной в американской экологической мысли. Цель этой статьи создать диалог между теорией умвельта – источником вдохновения для биосемиотики – и одной из ключевых фигур экологической мысли Альдо Леопольдом. Этот диалог интересен тем, что экологическая мысль может много выиграть, опираясь на юкскюлевскую теорию значения, и, с другой стороны, «этику Земли» Леопольда можно рассматривать как расширение теории Юкскюля в терминах этики.

Uexkülli *Kompositionslehre* ja Leopoldi *land ethic* dialoogis. Tähenduse mõistest

Uexkülli kuulus omailmateooria, mis ühtlasi on tähendusteooria, on Ameerika keskkonnamõttele jäänud ikka veel peaaegu tundmatuks. Käesoleva artikli eesmärk on luua dialoog omailmateooria kui biosemiootika ühe inspiratsiooniallika ning Ameerika keskkonnamõtte ühe suurkuju Aldo Leopoldi vahel. Selline dialoog pakub huvi seetõttu, et keskkonnamõte võib palju võita, toetudes Uexkülli tähendusteooriale, ning vastupidi, Leopoldi maaeetika (*land ethic*) avardab tõenäoliselt Uexkülli mõtet eetika terminites.