MORTEN TØNNESSEN

Umwelt transition and Uexküllian phenomenology

An ecosemiotic analysis of Norwegian wolf management

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The Council of the Institute of Philosophy and Semiotics of University of Tartu has, on October 24th 2011, accepted this dissertation for defence for the Degree of Doctor of Philosophy (in Semiotics and Culture Studies).

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PREFACE

This thesis contributes to developing Umwelt concepts, and various methods for modelling Umwelten and their interrelations. Simultaneously it offers an analysis of past and current interrelations of wolves, sheep and people, thus providing an application, and test, of the notation and methodology suggested. The dissertation summarises a multitude of activities of various sorts. An overview of my participation in research projects, organising of international conferences and workshops and presentations at international conferences is offered in the Curriculum Vitae.[1]

In "Delectable creatures and the fundamental reality of metaphor: Biosemiotics and animal mind", Wendy Wheeler (2010) refers to the 'night science' – or dare I say biosemiotics? – described by Francois Jacob (1988: 296), which "feels its way, questions itself [...] a sort of workshop of the possible [...] Where hypotheses take the forms of vague presentiments [...] Where the plans for experiments have barely taken form." Biosemiotics' present incoherence, on the negative side, is reflected in its principal openness to programmatic statements, on the positive. Were it not for that open atmosphere, this work would probably not have been possible.

A remark on genre: Jakob von Uexküll (1936) openly agreed that the depiction of many human Umwelten is best carried out by artists, such as novelists or poets. The genre of this text is necessarily that of the academic dissertation. Though matters of Umwelt research (*Umweltforschung*) and Umwelt mapping are treated in the form of a systematised disposition, it is critical to keep in mind the implications of Uexküll's abovementioned recognition: There are phenomena that cannot (best) be described in scientific language. The academic genre on the whole is given to objectification and generalization, and might thus not be capable of capturing phenomena which are not easily objectifiable. This reminder is not less important given the topic matter of this text – *subjective experience*. Warnings à la that of Gabriel Marcel (1949) with regard to the pitfalls of methods of objectification should be kept in mind. By objectifying subjective phenomena, and describing them in scholarly language, we convert them into another genre, and consequently a different mode of being – and this scholarly mode of being is not in all respects true and faithful to the phenomena. In particular, the detachment necessitated by abstract analysis is (if it were to become our *only* mode of being) irreconcilable with full-fledged participation qua incarnated, engaged being on par with other creatures. To some extent, then, the form of this text contradicts its message. In keeping with these reflections, however, I have in some cases allowed for a measure of variety in genre – this concerns e.g. the anecdote on the role of

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[1] Activities further included popularising texts published in 7 media, including three national Norwegian daily newspapers (Aftenposten, Dagbladet, Nationen), and media coverage in 6 media, including two national Estonian media (Eesti Rahvusringhääling – online; Vikerraadio) and one Norwegian (Nettavisen).

fiction in the natural sciences retold in Paper II, and the section "In search of the wolf's perspective" in Paper 7.

At the conference Zoosemiotics and Animal Representations (Tartu, April 4–8, 2011), Colin Allen, who was one of the plenary speakers, remarked that semiotic models are too abstract to be of any use for ethology, and challenged the biosemioticians present: "Semiotics must stop talking about what it *is*, and start showing what it *does*!" It has been my intention with this work to contribute to a development of semiotics of nature which makes its methodology more easily applicable, especially within the realms of ecosemiotics and zoosemiotics. The final point of the deep ecology platform[2] states that those who subscribe to the foregoing seven points have an obligation directly or indirectly to try to implement the changes that are necessary in light of the ecological crisis. According to Arne Næss, the frontier of the environmental crisis is long and varied, and there is a role for everyone to play. In this context, ecosemiotics and other brands of semiotics of nature definitively have a role to play. As Max Oelschlaeger (2001: 226) notes: "If ecosemiotics is to be more than academic entertainment, then an outline is in order, however provisional or elliptical, of how the ecosemiotic thesis facilitates intentional cultural change".

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[2] Quoted in full in Tønnessen 2003: 290–291.

ACKNOWLEDGEMENTS

own way (and sometimes unwittingly) have motivated me in pursuing intellectual and existential ends.

Arne Næss (1912–2009), the Norwegian philosopher whose work first triggered my interest in philosophy, died January 12, 2009, towards the end of my year in Brazil. I am grateful for having the chance to be in contact and exchange with some of his younger colleagues, including David Rothenberg, Per Ingvar Haukeland and David Abram (not to mention his widow Kit-Fai Næss). While all these three have done invaluable work in conveying deep ecological thought, David Abram in particular has inspired me by taking other creatures seriously in theoretical developments, and by pointing to possible future directions of phenomenological research. I am furthermore thankful for having had the chance to spend a semester in Tartu together with John Deely (spring 2009), when he was a visiting professor. Of other scholars I have gotten to know these years which have left me with a sense of sharing a project, or agenda, I would like to mention fellow phenomenologist Ane Faugstad Aarø from Bergen, Norway.

A number of people have made possible and contributed to the field trips and research visits I have conducted as part of my case study on Norwegian wolf management. I want to thank Stig Sletten and Frode Wærum at the Polar Zoo, Frank André Soma and Tuva Thorsen at the Langedrag Nature Park and Mountain Farm, Olav Åsland at the Kristiansand Zoo and Aleksei Turovski at the Tallinn Zoo for welcoming me and in the first two cases hosting me as well. My sincere thanks further goes to Olof Liberg, the coordinator of SKANDULV, the Scandinavian wolf project, for welcoming me to the annual research seminar in 2010, to Espen Søbye (Statistics Norway) and Runar Næss for meeting with me for conversations and guidance in Oslo, and to the seven interviewees I met with in Rendalen and Stor-Elvdal municipalities the autumn of 2010.

Apart from Kalevi and Timo, Riin Magnus and Silver Rattasepp are among the few who have followed my work all along – Riin as the current head of the Jakob von Uexküll Centre, and at several instances as my closest colleague. My appreciation further extends to Nelly Mäekivi, another researcher in the zoo-semiotics grant, with whom Riin and I edited a special issue of *Hortus Semioticus* on the semiotics of nature, to mention but one project. I have also enjoyed and learned from cooperating on editing projects with Kati Lindström (Semiotics of Perception, special issue of *Biosemiotics*), Kadri Tüür (the forthcoming Rodopi book *The Semiotics of Animal Representations*), and the Norwegian criminologists Guri Larsen and Ragnhild Sollund. In an early phase of my doctoral work, Tartu semioticians and fellow students Kaie Kotov and Riste Keskpaik were important colleagues and sources of inspiration. I would furthermore like to thank Tiina Peil, who has redrawn some of the figures of ontological maps presented in Paper IV, fellow doctoral students and others who have given me feedback during doctoral seminars or other department events, and the students in my course in Tartu "Semiotics and phenomenology" in the Spring of 2011 for lively discussions on key topics of this thesis. In the

final stage of the thesis work I have had good helpers in Riin Magnus, who has translated the Estonian summary, and Mara Woods (an Uexküll scholar in her own right), who has conducted English language editing.

To conclude, I reiterate that Kalevi has been absolutely instrumental in shaping me as a scholar of sorts. I have considered him as a role model in many respects, but he is by no means a common thinker. His intellectual curiosity and academic ingenuity respects few if any pre-set boundaries. A modern polymath, his continuing efforts to rework (the foundations of) science are provocatively based on the principle of thinking in as simple terms as possible. My own generalist-oriented approach to semiotics and philosophy has found fertile ground in his guidance, and room to grow in the open atmosphere of the biosemiotic community.

Last and least, however, I thank my dear friend Tarjei Leer-Salvesen – by no means a scholar, but a researcher nevertheless (as in investigative journalist). Tarjei regularly helps me refine my temper and maintain a sense of dignity. We both see the difficulty in truly communicating what matters. At the Norwegian exam in introductory philosophy, *Examen Philosophicum*, he drew a yellow elephant and wrote but one sentence: "It took Socrates a whole life to figure out that he knew nothing – it took me only a semester."

PUBLICATIONS INCLUDED IN DISSERTATION

Paper I Morten Tønnessen 2009. **Umwelt transitions: Uexküll and environmental change**. *Biosemiotics* 2(1): 47–64.

Paper II Morten Tønnessen 2010. **Steps to a semiotics of being**. *Biosemiotics* 3(3): 375–392.

Paper III Morten Tønnessen 2011. **Semiotics of being and Uexküllian phenomenology**. In: Anna-Teresa Tymieniecka (ed.): *Phenomenology/Ontopoiesis Retrieving Geo-Cosmic Horizons of Antiquit*y (= *Analecta Husserliana* CX/110), 327–340.

Paper IV Morten Tønnessen 2011. **Mapping human impact: Expanding horizons – interdisciplinary integration**. In: Tiina Peil (ed.): *The Space of Culture – the Place of Nature in Estonia and Beyond* (= *Approaches to Cultural Theory* vol. 1), Tartu: Tartu University Press, 93–106.

Paper V Morten Tønnessen 2010. **The global species**. *New formations: a journal of culture/theory/politics* 69 (Special Issue guest-edited by Ashley Dawson, *Imperial Ecologies*): 98–110. Featured as additional content in *Encyclopaedia Britannica* (www.britannica.com).

Paper VI Morten Tønnessen 2010. **Wolf land**. *Biosemiotics* 3(3): 289–297.

Paper VII Morten Tønnessen 2011. **I, wolf: The ecology of existence**. In: Ane Faugstad Aarø and Johannes Servan (eds.): *Environment, Embodiment and Gender*, Bergen: Hermes Text, 315–333.

LIST OF ILLUSTRATIONS

INTRODUCTION

Let our initial premise be that in order to understand the natural world, we should start out by grasping what makes sense to the living (and in living systems). The result is a pluralist, phenomenologically oriented outlook informed by biosemiotics.

Ecological reality – the global ecosystem – is ultimately, and first and foremost, an existential realm. This does not entail that it is *our* realm (the arena of our existential experience) – no, *each and every creature* partakes in this global, existential realm. More precisely, all creatures are actively engaged in their relevant surroundings, which appear to them within the context of their lifeworlds[3]. No being – not even humans, individually or as a global 'republic of science' (cf. Polanyi 1962) – has total overview. For no one, in other words, is this existential realm "global" in the sense of being total, universal, summing-up-everything-that-is (though humanity today represents a *global species* with an economic engagement that is approximately global – cf. Paper V). This existential realm that we call nature is a rich, multi-nodal web of relations of ecological, social and (psycho-)somatic character – world upon world, life within life.

Many would assume that a *superstitious* anthropocentrism was a thing of the past – a feature of a geocentric world, perhaps. But it is in no way obvious that our present societies are less anthropocentric than past societies, or that our advanced and bureaucratic anthropocentrism is in the big picture any less "mythical" than that of low-tech societies. What matters the most is in what terms we think about our own role on this planet (conquerors, caretakers, fellow inhabitants?). "Today", as phenomenologist David Abram (1997: ix) observes, "we participate almost exclusively with other humans and with our own human-made technology." Noting that we, in modern, "civilized" humanity, have "a strange inability to clearly perceive other animals – a real inability to clearly see, or focus upon, anything outside the realm of human technology, or to hear as meaningful anything other than human speech", Abram suggests that "we are human only in contact, and conviviality, with what is not human".

At times nature is a mirror of culture, held up before us so as to show us a world of our own making. In many cases animal behaviour is a reflection of our culturally conditioned approach to the animals in question. In such cases our interaction with animal species is bound to be misrepresented if we mistakenly assume (in bad faith, to apply Sartre's notion) that the animal's current behaviour is its only possible behaviour. What we can observe at any given time is often but a single note in the behavioural repertoire of a species. Wolves are a case at hand. They are known to have preyed on vulnerable humans, dominantly children, in times of extreme ecological conditions (low prey availability) and

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[3] Throughout this introduction, 'lifeworld' is to be taken as synonymous with 'phenomenal world' in a loose sense, whether the notion of phenomenal world in question is Uexküllian, Husserlian or otherwise conceived of. Husserl's *Lebenswelt* will be referred to as "Lebenswelt", and Uexküll's *Umwelt* as "Umwelt".

special societal conditions (poverty, unobserved child labour), such as in early modern Europe. Wolves have also preyed on people in some cases in contemporary India – but they would never under more normal ecological conditions so much as approach a human being (except in cases where the humans in question deliberately habituate the wolves to their presence over time). Those who saw the devil in wolves, in other words, saw little more than a reflection of their own culturally and ecologically determined approach to the brute animals.

A central part, or aspect, of this dissertation is concerned with what we have branded as *Uexküllian phenomenology*. Such a phenomenology derives from the Umwelt theory of Jakob von Uexküll (1864–1944)[4]. For a general treatment of the question as to who can properly be called phenomenologists, see 2. *Uexküllian phenomenology*. The notion of phenomenology – which is in the mainstream mostly associated with human consciousness – will be treated and developed in the afore-mentioned section. Before we move on to presenting our general assessment of Uexküll's Umwelt theory in introductory terms, however, a few words should be said about our relationship to Charles Sanders Peirce (1839–1914). Besides being regarded as a modern founding father of semiotics, Peirce is also known for having coined 'phenomenology' independently of Edmund Husserl, with a partially overlapping yet clearly distinct signification (see Spiegelberg 1956). Peirce's notion of phenomenology, later termed 'phaneroscopy' etc., is treated in Paper III. As we will see there, Uexküllian phenomenology is not necessarily aligned with Peirce's ideas about phenomenology. A disclaimer might be called for: Uexküllian phenomenology as we conceive of it is loyal not to any specific interpretation of Peirce, nor to his general philosophical outlook, but rather, to the extent that it is of any use for the current project, to some basic semiotic concepts of his such as those of symbolicity, iconicity and indexicality. It is absolutely crucial that such concepts are not fetishized.[5]

Our main task in this dissertation is to contribute to the development of Umwelt concepts and models – in short, Umwelt theory in the tradition following Uexküll – and to attempt to describe the semiotic mechanisms that regulate the wolf and sheep populations in Scandinavia, especially through their interaction with the human species. The case study on Norwegian wolf management will be used as a test case for actual application of theoretical concepts and models developed earlier on in the thesis. This includes development of phenomenological ideas in 2. *Uexküllian phenomenology* and development of biosemiotic methodology in 3. *Umwelt mapping*. The methodological tools to

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[4] Informative dissertations on Uexküll include Schmidt 1980 and Mildenberger 2007 – for a recent innovative master thesis see Woods 2011. For qualified commentaries, see also Pobojewska 1993a, 1993b and 2001 and Buchanan 2008. For a general introduction to Uexküll's work, see Kull 2001.

[5] Some followers of Peirce have built a solipsistic metaphysics around his concepts of Firstness, Secondness and Thirdness. Such concepts may be of great value when applied in their right context, but they perform poorly as objects of worship.

be developed include *phenomenal fields* (a representation of Umwelten) and *semiotic causation* (an alternative notion of causation). Our overall aim is to demonstrate that a revised and further developed, updated Umwelt theory is applicable in the contemporary scientific context, and to point to its wide-ranging philosophical implications. It is thus our claim that Uexküll's thought can do better than simply serve as a historical source of inspiration.

The core concept of this work is that of *Umwelt transition*, which represents an Uexküllian notion of environmental change.[6] An Umwelt transition can as described in Paper I (p. 49) be defined as a lasting, systematic change within the life cycle of a being considered from an ontogenetic (individual), phylogenetic (population-, species-) or cultural perspective, from one typical appearance of its Umwelt to another. Ironically, this notion is of crucial importance partly because it was *not* to Uexküll. As detailed in Paper I, his view of nature was one in which 'Planfulness' (Planmässigkeit) and harmony was the order of the day. This emphasis on the balance of nature was to a large extent typical of his historical era (though Darwin in his evolutionary approach naturally had to relate to the topic of change). One reason why Umwelt theory in Uexküll's version seems outdated is exactly its ahistoricity. This orientation was Uexküll's conscious choice, and resulted in a coherent theory. We would gain little, however, from insisting in our own time on remaining faithful to that metho-dological stance. That would render Umwelt theory's relevance as insignificant in our time of global anthropogenic environmental change.

Theoretical and methodological parts of this thesis as well as the parts involving its case study are at times vastly interdisciplinary, involving semiotics (hereunder biosemiotics, ecosemiotics, zoosemiotics and cultural semiotics, with the odd nod to semioethics and existential semiotics), phenomenology and other philosophy (including eco-phenomenology, existentialism, conservation philosophy and philosophical anthropology), ethics, economy (including eco-logical economics), human ecology, ethology, wolf ecology, etc. This is a trait which might at best prove to make the thesis relevant across a number of disciplines, but might in the worst case simply reveal its author as a true amateur across a number of disciplines (admittedly a lesser accomplishment).[7] We apologise in advance for its apparently all-embracing ambition. Our only excuse is our honest interest in studies at the crossroad of nature and culture, in macro-perspectives, in long-term developments and futurology, and in global trends. Our hope is that this orientation has resulted eventually in a set of models and concepts that are suitable for someone working with human-animal

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[6] The term is our coinage, not Uexküll's.

[7] Our sentience on this point echoes that of Norwegian eco-philosophers Arne Næss and Sigmund Kvaløy Setreng, both of whom have emphasised the need for 'super-amateurs', or generalists, in a modern society dominated by specialists and tremendous specialisation in scholarly studies. Sebeok (1995) addressed a similar topic when he made his distinction between researchers that are like bees (generalists) and moles (specialists) respectively. In Sebeok's words, I am predominantly a bee.

studies and related approaches to wide-ranging, interdisciplinary topics transcending the nature/culture divide.

This thesis text will intermittently present programmatic statements for both semiotics and phenomenology. The general assumption is that unification of the two fields of inquiry can be mutually enriching, especially with regard to semiotics of nature and eco-phenomenology. But perhaps making mention of "programmatic statements" is not going far enough. The abundance of coinages and proposed directions of inquiry in this text might even give it a character of presenting, more than anything else, a *research program*.[8] This designation is probably appropriate, given that the terms, models and topics introduced in the course of this dissertation leave many details to be worked out in the future, be it by the author of this dissertation or by other scholars, if someone were to take an interest in pursuing aspects of this research program as a common undertaking.

Among the core notions we will introduce in the course of this dissertation is that of a *global species* (see Paper V). The sheep, the third most significant case study creature beyond wolves and people, partakes in our ecological empire in a quite central position, as one of the top five livestock species globally. The wolf, on the other hand, does not fit in with the modern idea we have had until recently of how we want nature to be (unlike the dog, for which the wolf is an ancestor). *Sheep*: companion; *wolf*: foe.

As mentioned, the case study concerning Norwegian wolf management (section 5 of the Introduction, and Paper VI and Paper VII) will function as a test case for our theory and methodology. To our knowledge wolf management, or indeed wolf ecology, has not previously been subjected to a thorough semiotic analysis. We expect to demonstrate the relevance of a semiotic analysis. Semiotic analysis is in our opinion well suited for the study of mechanisms regulating relations between the human species and other creatures, since it enables us to approach this topic matter from a cultural as well as from an ecological point of view. Through the case study, this work is not only *theoretical* zoosemiotics and ecosemiotics, but furthermore *applied* zoosemiotics and ecosemiotics.

Though the author of the current thesis has at least one specialty – a semiotic understanding of wolves (and sheep) – I consider myself first and foremost a generalist. What is a generalist? One possible definition: A researcher/thinker who
1) covers a range of related yet distinct topics, and simultaneously or in parallel
2) examines interconnections among these topics, and ideally also
3) investigates the integration/incorporation of the various "levels of inquiry" (ranging from the most general to the most particular studies).

In modern science, it is unworkable for one person to keep track of all important developments within a broad field of inquiry. Being a generalist who enters the fields of various specialists, there are countless examples of instances where I might have erred – in every particular, in every single detail, I might

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[8] See especially the platform of ten steps to a semiotics of being in Paper II.

have erred, and specialists might (indeed, should) be able to point that out. Whether or not, or rather *in what cases* such shortcomings affect the overall argument and perspective, and should lead to a revision of these, will have to be left to the judgment of particularly gifted masters of this text.

We err anew, however, if we think that the particulars of our world can be represented *perfectly* by the symbolic notations of science (or of philosophy, for that matter).[9] As a generalist, my main interest lies not in any particular segment of science, but in "the pattern that connects", to borrow a phrase from Gregory Bateson (2000 [1972], 2002 [1979]). That said, we must see the world (in its natural as well as its cultural aspects) as a world of particulars – a highly homogenous affair, riven with exceptional instances and perhaps even illogical, contradictory occurrences. This world of particulars is ruled by physical forces and semiotic causation (see 3.2 *The notion of semiotic causation*). If we do not acknowledge as our starting point that there is a world of particulars – concrete, tangible reality – we are likely to develop abstractions of reality that amount to a 'world of shadows' only, in the words of Uexküll.[10]

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[9] On the other hand, pinpointing typical, somewhat representative particulars is crucial to any scientific or scholarly endeavour.

[10] On the fringes of this dissertation, or strictly speaking clear of it, are those of my academic publications which have *not* been included as component parts of this dissertation but which are nevertheless to varying degrees relevant for its overall subject matter. These are all detailed in References. In bibliographical sequence, they are: Tønnessen 2001 (on an Uexküllian ontology, and possibilism), 2002 (my Norwegian master thesis on Umwelt research and ontology), 2003 (where I introduce some Umwelt notions, and relate Umwelt theory to environmental ethics and deep ecology), 2008 (on past and future world economy), 2009a (on the nature view of environmentalists), 2009b (on the self qua ecological and pheno-menal), 2009c (a meditation on sign growth and other growth), 2009d (on animal play in general and cat play in particular), 2010a (a book review on zoosemiotics), 2010b (on invasive wolf management and long-term goals for wildlife management), 2010c (on legal and illegal wolf hunting), Tønnessen and Deely 2009 (on semioethics, and the nature of morality) and 2011 (on semioethics, phenomenology etc.), Tønnessen and Gorlée 2010 (on Lotman's visit to Norway), Tønnessen and Lindström 2010a and 2010b (on semiotics of perception), Tønnessen and Magnus 2010 (an interview on biosemiotics with Kalevi Kull), Tønnessen, Mäekivi and Magnus 2010a and 2010b (on semiotics of nature), and prospectively Tønnessen and Tüür 2012 (on the semiotics of animal representations).

1. THE BIOSEMIOTIC APPROACH

In this first section of the introduction we will evaluate Sebeok's depiction of the Umwelt as species-specific modelling system, and present our version of the notion of *levels of biosemiosis*.

1.1. Appraisal of Sebeok's depiction of the Umwelt as species-specific modelling system

Sebeok contributed vastly in enunciating the concept of Umwelt as a "matchless world of significances [...] to which [a living being's] behavior must accommodate" (Sebeok 2001: 74) – "its sealed-off, private monadic model of the universe" (*ibid.*, 79) – the taxonomy that any living entity superimposes upon its universe in order to filter out otherwise unmanageable environmental noise (*ibid.*, 89). These three descriptions all derive from his article "What do we know about signifying behavior in the domestic cat (*Felis catus*)?" (Sebeok 1994), and represent but fragments of his manifold variations of Uexküll's Umwelt theme. His greatest contribution as well as his more counterproductive emphasis on the supposedly necessarily species-specific character of an Umwelt is enveloped in another quote (Sebeok 1992, cf. 2001: 124), in which Sebeok defines an Umwelt as "the 'model' of a species-specific segment of individual reality". While the description of an Umwelt as a modelling system[11] has proven to be highly fruitful, the second claim has proven to be simplifying in a misleading manner.

How many worlds are there? How many spheres within spheres – how many thresholds above thresholds? "[I]n the phylum *Chordata* alone – to which the genus Felis belongs – there are at least forty-five thousand known species and hence no fewer corresponding systems of communication", Sebeok (2001: 194) states, thereby offering yet another description of an Umwelt. But is it not the case that populations and the like, as well, constitute systems of communication? In reality, the phylum Chordata entails far more than forty-five thousand different Umwelten. There are species-specific Umwelten (such as the human Umwelt) and more local Umwelten (such as the human/cultural Umwelt of Rio de Janeiro, the Carioca Umwelt), as well as more global Umwelten (such as the Umwelten of primates). An Umwelt is, in one fundamental sense, a shared, public sphere, an arena for signs that make sense to a certain group of Umwelt participants. Umwelten are not species-specific, but rather organism-

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[11] Note that recent, more refined theorising which is arguably in line with Uexküll's original work distinguishes more accurately between the Umwelt in a strict sense and the *Innenwelt* (John Deely took part in this theoretical development). In this approach "[t]he Umwelt is the modelled part of the functional world, whereas the *modelling* process belongs to the part that Uexküll has called *Innenwelt*" (Kull 2010: 348). Taking this into account, we should rephrase Sebeok's assertion concerning the Umwelt as a modelling system to read that the Innenwelt (which is an aspect of the Umwelt in a broad sense) is the modelling system, whereas the Umwelt (in a narrow sense) is the resulting model.

specific. In categorising Umwelten the threshold of the species is indeed useful – and it is certainly characteristic of intraspecific communication – but the threshold of the species is nevertheless but one threshold among many. To say that Umwelten are species-specific is therefore in part arbitrary. Said unconditionally such statements are misleading, bordering on false.[12]

1.2. The levels of biosemiosis

In the following we introduce a tentatively all-inclusive model of various *levels of biosemiosis* (for an earlier proposal concerning explicitly "levels of bio-semiosis", see Logan 2007, p. 75, 80, where Robert K. Logan speculates "that there exist at least seven levels of biosemiosis", adding in the end that he believes "there are more levels that further study will reveal"[13]). According to this model there are six levels of biosemiosis, falling under three broader categories (see Figure 1).

Endosemiotics is not a very common term (except for in the writings of Thure von Uexküll (for an example, see Thure von Uexküll, Geigges and Herrmann 1993), Sebeok, and Hoffmeyer), but here it is applied to sum up, as an overarching umbrella notion, all the subfields of semiotics that is concerned with bodily, subperceptual semiosis, or, to rephrase, any activity within the field of semiotics whenever this scholarly activity is concerned with bodily, i.e. sub-perceptual semiosis.[14]

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[12] According to Uexküll (1928: 181; our translation), the aggregate Umwelt of an entire species is "larger and richer than the Umwelt of each [member of that species]". Species, in other words, are not totally homogeneous – there is always a certain intraspecific variety in behaviour and phenomena. This behavioural and phenomenological repertoire – which any species put on show – is partly due to differences in constitution among the organisms of the species, and partly owing to different life histories (cf. Uexküll's concept of an *Umwelttunnel*). Individuality, that is to say, has its roots in physiology as well as in the concrete situations, or contexts, in which a living being finds itself immersed, and through which it has taken form not as a general being, but as an actual, particular being.

[13] Logan's scheme is based on Hofkirchner's idea (2002: 9) that "there are as many different basic types of semiotic processes as there are basic types of systemic self-organising processes". Ours differs from Logan's in that it is perception-centric rather than aiming at organisational levels as such, except for in the admittedly simplified terms of the six subcategories depicted.

[14] In the initial conception of the levels of biosemiosis, we had located 'biosemiotics' in the place of 'endosemiotics'. That attempt was abandoned since biosemiotics in that draft appeared to be a narrow undertaking concerned mainly or merely with somatic, i.e. bodily, semiosis. Some of the appeal of that initial draft, however, was that it might have shed new light on the notions of *endosemiosis* and *exosemiosis*, which is usually conceived of as semiosis that is internal and external to the body respectively. In the initial draft of our tripartite model, the boundary between 'the outer' and 'the inner' was in flux depending on the level of biosemiosis considered. It would thus be possible to argue that endo- and exo-semiosis occur both at the somatic level and the social level, and that in a global ecological perspective all semiosis is ultimately endosemiosis.

CATEGORIES	PRIMARY REALM	PHENOMENOLOGY	PRIMARY FIELD OF SEMIOTICS OF NATURE	SEMIOTICS	EXOSEMIOTICS	(CULTURAL SEMIOTICS)
SUB-PERCEPTUAL SEMIOSIS = MICROSCOPIC SEMIOSIS	Somatic		ENDOSEMIOTICS	SEMIOTICS	EXOSEMIOTICS	(CULTURAL SEMIOTICS)
- Intra-cellular	Somatic		ENDOSEMIOTICS			
- Inter-cellular	Somatic		ENDOSEMIOTICS			
PERCEPTUAL SEMIOSIS = ORGANISMIC SEMIOSIS	Social	PHENOMENOLOGY	ZOOSEMIOTICS			
- Intra-organismic	Social		ZOOSEMIOTICS			
- Inter-organismic	Social		ZOOSEMIOTICS			
- Extra-organismic	Social		ZOOSEMIOTICS			
SUBER-PERCEPTUAL SEMIOSIS = MACROSCOPIC SEMIOSIS	Ecological		ECOSEMIOTICS			
- Super-organismic semiosis	Ecological		ECOSEMIOTICS			

* Social proper, in the sense of involving several individuals

Figure 1. The levels of biosemiosis.

According to the above-mentioned tripartite model of the levels of biosemiosis, cells and organisms (individuals, where applicable) are the primary substances of the biological world, though there are also larger wholes. This tripartite model could be relevant for simple and complex life forms alike, though in the case of very simple – non-social – creatures it collapses into a two-category model. As the model demonstrates, perception is at the core of biosemiosis, even though not all biosemiosis is perceptual, and even though perception constitutes but one level (or layer) of biosemiosis. The standing of perception is intimately tied to the standing of the individual. With such an overall model of biosemiosis, the individual organism (and its lifeworld) is methodologically placed at the center of biological research.

Such a perception-oriented model of biosemiosis has implications for cultural studies as well. Applied to humans, it evokes a perspective in which the human mind, or soul – as Plato and Aristotle would have it, but in a radically different sense – partakes in three realms. Perceptual semiosis (which is "social" in the primal sense of being related to the active navigating of an individual) is grounded in somatic semiosis, and interacting with a yet higher (more complex) level, namely that of *superorganisms* – e.g., society, or an animal population. It is on this highest, more-than-individual level that society's often indiscernible yet absolutely principal influence on how individual members of society carry out their lives is to be located. In Figure 1 we thus see

the place of cultural semiotics within the scheme of levels of biosemiosis, alongside the ecological and the social (but *grounded* in super-organismic semiosis).

What of the question of the threshold of semiotics, and of phenomenology? Our assumption, as reflected in the current presentation of the levels of biosemiosis, is that phenomena, aka perceptual semiosis, can be conceived of as a layer of semiosis. In Figure 1 we thus see the place of phenomenology within the scheme of levels of biosemiosis. While this definition of the relation between phenomena, semiosis and perception is straightforward and generally workable, we must acknowledge that the difference between perceptual, sub- and superperceptual semiosis is not all that clear-cut in actual studies. For instance, it is not obvious where we should draw the line between conscious and unconscious processes. All conscious mental processes are clearly to be regarded as located at the perceptual level. But what can serve as our guideline with regard to unconscious mental processes that affect the organism as a whole? Are these to be covered by our conception of perception, and thus of phenomena? At this point we will not conclude in any precise manner in this matter beyond stating that at least *some* of these (such as dreams) must fall within our conception of phenomena. Regardless of whether or not unconscious processes that affect the organism as a whole are to be regarded as involving phenomena, however, the content matter of these processes is obviously of semiotic nature and thus to be regarded as instances of semiosis.

The threshold of semiosis implied by the current scheme of levels of bio-semiosis is one in which biosemiosis is apparently equivalent with semiosis – all semiosis is biosemiosis. This is in line with Sebeok's final view. In the biosemiotic community and beyond this stand is controversial. *Pansemiosis*, *physiosemiosis* (Deely, Salthe), *machine semiosis* (Santaella, Nöth) and *induced semiosis* are among the terms that have been applied to describe other prospective forms of semiosis. Of these we much prefer that of 'induced semiosis' as described by Alexei Sharov (2010), though we acknowledge that some descriptions of so-called machine semiosis are in effect not very different. In Sharov's words (*ibid.*, 1052), "[semiotic, or cybernetic a]gents always receive some of their functional information from parental/recruiter agents and often follow parental/recruiter goals. This induced semiosis is common for living organisms and artificial devices." The difference between Sharov's notion of induced semiosis and the notion of machine semiosis is that the former envelops 'machine semiosis' as a special case of a much more widespread phenomenon which goes well beyond human affairs and is actually taken to be characteristic of living agents as such. We note in conclusion that we have a different and somewhat narrower notion of agents than Sharov (he having a more cybernetic conception, we a strictly biosemiotic one), and that we do not necessarily share his ambition to "shift the focus of biosemiotic from

living organisms to agents in general" (*ibid.*, 1050).[15] What is decisive in the context of the levels of biosemiosis is that induced semiosis can in all cases be seen as an extension of biosemiosis.

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[15] Unless, that is, such a shift would first and foremost facilitate greater scrutiny of domestication, technological control of natural environments etc. *with an ecological perspective.*

2. UEXKÜLLIAN PHENOMENOLOGY

In this section we will treat the notion of phenomenology, the relation between semiotics and phenomenology, Husserl's notion of Lebenswelt and our own notion of Uexküllian phenomenology. The phenomenology of Charles Sanders Peirce is briefly treated in Paper III. See also our remarks on contemporary eco-phenomenology in Paper I, Paper II and Paper III.

2.1. On the notion of phenomenology

The fields of phenomenology and semiotics are equally diverse, and thus equally hard to present in any comprehensive way. While most scholars today reckon Edmund Husserl as phenomenology's founding figure – some too rigidly so; devaluing any phenomenological strain of thought that is not sufficiently "Husserlian" (according to one interpretation of Husserl or another) – some, especially French phenomenologists, have counted even Kant and Hegel as phenomenologists. What is more, phenomenology has in several notable cases been taken to overlap with existentialism, especially in the French tradition. While modern phenomenology started in Germany and spread through France, it is by now no doubt an international movement of thought. But how can it be defined, and delimited?

Heidegger's opaque case, and his personal relationship with Husserl, is one odd chapter in this story. What, then, about simply following Husserl's definition of phenomenology? Alas, he did not offer *one* definition of phenomenology. His conception of phenomenology was in constant development, and there is an immense difference between his various notions of phenomenology. Though he made a number of attempts, Husserl never succeeded in developing phenomenology as a *philosophical system*. His writings are diverse and in his own words incomplete. Even studying his vast *Nachlass* would not get us all that far, since at any rate there is no "final version" of his approach to phenomenology.

What counts as phenomenology? As with the term 'Umwelt' in the case of Uexküll, the term 'phenomenology' (or 'Phänomenologie') existed long before Husserl adopted and redefined it. Kant might have been the first scholar to apply the term 'phenomenology' in a scientific, non-philosophical context. This first mention appeared in his 1786 publication *Metaphysische Anfangsgründe der Naturwissenschaft* (Kant 1786), where phenomenology denotes one of the four branches of the science of matter (physics), more specifically the branch that deals with apparent motion, or motion as a modality. Thus it was confined to a problem of physics. According to Spiegelberg (1982: 11), the first philosophical usage of the term 'phenomenology' appeared in 1764 in Johann Heinrich Lambert's *Neues Organon oder Gedanken über die Erforschung und Bezeichnung des Wahren und der Unterscheidung von Irrtum und Schein* (see Lambert 1990 [1764]). Here, phenomenology denoted the theory of the varieties

of illusions. Lambert likely inspired Kant to adopt the term, albeit in redefined versions – first, as we have seen, in the context of physics, and soon with a redefined denotation in the context of philosophical metaphysics. The term 'phenomenology' does not in fact appear in Kant's *Kritik der Reinen Vernunft* (cf. Kant 1996 [1787]), but in 1772 he wrote a letter to Marcus Herz in which he stated that the first theoretical part of his forthcoming work on the limits of sensibility and reason would consist of two parts, the first on general phenomenology ("die Phänomenologie überhaupt") and the second on the nature and method of metaphysics (*ibid.*). At this stage, Kant in part equated his critique of pure reason with 'phenomenology'. As Spiegelberg notes, however, "such a critique of human knowledge has by itself little if any affinity" with post-Husserlian phenomenology. There is no clear indication, for instance, that Kant ever conceived of phenomenology as a study of phenomena as opposed to things in themselves, i.e. *noumena* (*ibid.*).

It was Hegel who first elevated something called "phenomenology" to the rank of a full philosophical discipline with lasting influence (Hegel 1977). Husserl did not refer much to Hegel, and his status as a precursor, if not initiator, of phenomenology is debated at best. Altogether there are at least a dozen of instances of fairly independent philosophical uses of the term 'phenomenology', not counting the various definitions applied by phenomenologists in a narrower sense (Spiegelberg 1982: 11–18). We will not say much at this instance about the ideas on phenomenology of Peirce, who was the first American philosopher to develop a notion of phenomenology. But a few words are required at this point to make some facts evident. First, we note that Peirce throughout his thinking life applied a number of different terms, using the term 'phenomenology' in the main only in the period 1902–1904. As Spiegelberg (1982: 17; 1956) details, his struggle with Hegel's thought is the most likely reason for why he eventually abandoned the term (in an overlapping interpretation, Peirce abandoned the term 'phenomenology' partly in accordance with his ethics of terminology, so as not to saturate an existing term defined by others with totally new meaning). At any rate Peirce's conception of what is here called phenomenology overlaps in part with that of Husserl, but is simultaneously different enough to warrant a characterisation as a genuine theory (or idea) of phenomenology, on a par with Uexküllian phenomenology as *another* genuine theory of phenomenology.

To bring this subsection to a close, we note in conclusion that in a peculiar fashion there is an interesting development of phenomenology taking place in three steps, from Husserl's last, unfinished work via Merleau-Ponty's last, unfinished work (Merleau-Ponty 1968) to David Abram's contemporary work, where the former unfinished work(s) plays a significant role for the later philosophers in this line of thought in phenomenology. This speculative or prospective aspect of phenomenological thought is mirrored in Heidegger's and Sartre's promised but never delivered sequels to their main works (Heidegger 1962, Sartre 1958).

2.2. Semiotics and phenomenology

We are located at the junction of nature and culture, and of semiotics and phenomenology. Can they be reconciled? More particularly, can subfields such as biosemiotics and eco-phenomenology be mutually enriching? The author of the current thesis believes that they can. The semiotic study of life and the living can emerge as properly informed only if it is capable of incorporating observations made in natural science, philosophy and cultural studies alike. The semiotic study of nature entails an experiential turn in the study of life processes. Perception is – or should be – at the heart of the life sciences.

In certain manifestations at least, semiotics and phenomenology have a lot in common as overarching fields of foundational importance for more specialised disciplines. Carl Stumpf (1848–1936), for instance, conceived of phenomenology as the "first layer" of any science, and characterised it as a pre-science. Some semioticians – biosemioticians, at least – would make similar claims on behalf of semiotics. We could daringly suggest that the overall task of semiotics conceived in such a fashion is to examine the very possibility of meaning. Here, Uexküll's Umwelt theory contributes substantially with its depiction of the human Umwelt, which constitutes the actual perceptual horizon of any scientist or researcher. Semiotics can further be applied to analyse the scientific languages used in scientific descriptions. It can thus be argued that semiotics is (potentially) both a pre-science and a meta-science.

Given such unbounded ambition and scope a remark on systems building in philosophy with a critical view to dogmatism is in place: Namely, one should bear in mind that even though the laborious construction of philosophical systems can be of great value, it is not an enterprise that should be taken to be *definitive* in any meaningful sense of that word. For any follower of Husserl or Peirce, it is worthwhile to bear in mind that although both of these largely systematic thinkers attempted throughout their lives to develop something akin to a perfect system, they never felt themselves that they managed to actually do so. A definitive version of either of their philosophies was never presented. Accordingly, any Husserlian or Peircean alleging to present anything akin to a perfect system should be met with a great deal of suspicion. If there was one thing both Husserl and Peirce promoted through their work and their work styles, it was a sort of *rigorous yet innovative analysis* which was never to be incarcerated by dogmas past, and only temporarily (and thus hypothetically) even by the dogmas of their own making.

Both semiotics and phenomenology are so diverse areas of study that to purport to represent most of their significant interconnections could only be justified in the setting of a separate book-long work. In addition to biosemiotics it is in recent times perhaps especially *cognitive semiotics* and *biohermenutics* that have shown an interest in, and signalled affiliation with, phenomenology (though much the same could be said about the existential semiotics of Eero

Tarasti and the semioethics of Susan Petrilli and Augusto Ponzio).[16] If nothing else these instances are proof of a substantial interest in phenomenology among biosemiotics' "closest relatives". In 1982, a special issue of *Semiotica* was devoted to semiotics and phenomenology (Lanigan (ed.) 1982). Paul Ricoeur (1913–2005) is among the notable names that have been involved in semiotics and phenomenology alike, which include Husserl and Peirce. Contemporary voices of some resonance that relate to both fields include Frederik Stjernfelt (2007), Göran Sonesson (2007), Anton Markoš (2002) and Richard Lanigan (2007).[17]

Though there was little direct or indirect influence between Husserl and Uexküll, the notion of Umwelt and the notion of Lebenswelt are as we will see in 2.3 *Husserl's notion of Lebenswelt* in part interrelated and partly overlapping notions. The term Lebenswelt only won acclaim after Merleau-Ponty introduced it in his writing based on his studies of the originally unpublished parts of *The Crisis*. The version of *The Crisis* that was published in Husserl's lifetime was published in 1936, two years after Uexküll's book *Streifzüge durch die Umwelten von Tieren und Menschen* and four years before *Bedeutungslehre* (see Uexküll 1956 [1934/1940]), Uexküll's last major work – but notably with the drafted sections about the Lebenswelt omitted. Two years later Husserl died, and ten years before the drafts on the Lebenswelt were published posthumously as part of an expanded version of *The Crisis* in 1954, Uexküll died. In the initially omitted parts of *Die Krisis*, Husserl argued that the crisis of European science was due to neglect of the Lebenswelt, from which it originates. The Lebenswelten, Husserl thought, were structured, and these structures were to be studied so as to reinvigorate the faltering scientific enterprise. In Husserl's view, the only way to restore the viability of science was "to realize that science was in fact nothing but a distillate, as it were, from the fuller life-world" (Spiegelberg 1982: 146). These observations resonate well with Uexküll's views presented at the end of *Bedeutungslehre* and other places.

Perhaps the first two questions we should ask when discussing the relation between semiotics and phenomenology are these: Does phenomenology have to be Husserlian? And does semiotic phenomenology have to be Peircean? Though we find some common ground with Uexküllian phenomenology in both Husserl's and Peirce's respective phenomenologies, our general answer to these two questions is "no". The worldviews of Uexküll, Peirce and Husserl, in short, were so different that it is more fruitful to portray their approaches as three genuine perspectives than to try to equate one of them with one of the others. A

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[16] Even with this modification that claim is debatable, given the interest in phenomenology of other subfields of semiotics including media semiotics.

[17] Lanigan's 2007 paper has the subtitle "Towards a new science of *semiotic phenomenology*" (our emphasis). His approach, however, differs from that of the current dissertation in that his programmatic statements apply to the human realm only. Sonesson's paper published the same year has the subtitle "A study in *phenomenological semiotics*" (our emphasis). These two titles alone are ample proof of the occurrence of other contemporary attempts at fusing the two fields to some extent.

rejection of Husserlian phenomenology, then, is not by implication a rejection of Uexküllian phenomenology – nor is a rejection of Peircean phenomenology by implication any rejection of semiotic phenomenology in general.

Semiotics and phenomenology are both scholarly enterprises concerned with (the origin, emergence of) *meaning*. That does not make the two designations synonyms. However, inquiring into the semiotic aspects of phenomenology and the phenomenological aspects of semiotics, one fact that definitively deserves mention is that Husserl developed a semiotic theory of his own (see for instance Husserl 1994). Semiotic theoretical development also occurs in *Logical Investigations* (Husserl 1970b) and *Formale und Transzendentale Logik* (Husserl 1974 [1929]). Spiegelberg (1982: 89) asks:

> How far can this picture [Husserl 1970b and 1974] be related to the teachings of recent semiotics, especially to the distinctions between syntactics and semantics? […] Husserl himself developed […] an a priori grammar for all possible languages […] For semantics, understood as a study of the relationships between signs and designate, Husserl did not set aside any separate study; yet his later phenomenology of meanings includes the theoretical insights from which rules concerning legitimate and illegitimate meanings could be derived. Husserl was primarily concerned in pure logic as a study of the designate of our symbols, both as propositional meanings and as ontological objects meant through them, prior to studying their relationship to the stratum of linguistic expressions. Such study may then lead to the formulation of semiotic laws and rules.

In what remains of this section, we will briefly treat the semiotic reception *qua rejection* of Husserl (by way of John Deely) and even more briefly the phenomenological reception of Uexküll (by way of Maurice Merleau-Ponty), and explain the idea of phenomena conceived of as a layer of semiosis in summary terms.

Unlike the semioticians mentioned previously in this paragraph, John Deely is a contemporary voice of considerable resonance who has quite explicitly dismissed the enterprise of phenomenology (lest it be pure Heideggerianism[18]). Deely is representative of the attitude that semiotics is more progressed than phenomenology, and that phenomenology is largely a dated enterprise. In Deely 2007: 7 (footnote 9) he asks:

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[18] In Deely and Novak 1970 Deely refers (p. 330) to "the essential superiority of Heideggerean phenomenology over every other form." He further states (*ibid.*, 331)

> that the Heideggerean conception of Phenomenology departs from the Husserlean conception precisely on the basis of the key aspects in which Heidegger's notion of "das Sein" *differs* from Husserl's – still more from Brentano's – conception of the "Intentionalität des Bewusstseins" [intentionality of consciousness] and *agrees* with, or rather returns to, the classical notion of "esse intentionale" as first formulated and subsequently developed in the Arabic and Latin traditions of Aristotelian commentaries culminating in 1637 with the *Cursus Philosophicus* of Jean Poinsot.

Why should there not be a postmodern rebirth for phenomenology, wherein the modern idealistic limitations of its founder and founding are overcome? I would agree that, even though Husserl himself opted for idealism, a phenomenologist can *opt* for realism. Phenomenology as a method is "on the fence" between realism and idealism. But by its method Phenomenology is not, and has no way of moving, *beyond* the modern impasse; it can only take sides *within* the modern context and as a matter of "individual preference", in contrast to methodological principle.[19]

Deely's claims are in short 1) that Husserl was an idealist, 2) that phenomenology is epistemology, not ontology and 3) that Husserl's phenomenology was Cartesian and thus typically modern. However, 1a) Husserl later approach in *The Crisis* was arguably at odds with idealism and 1b) major phenomenologists including Merleau-Ponty were not idealists, 2) major phenomenologists including Heidegger, Merleau-Ponty and Sartre did not conceive of phenomenology as an epistemological enterprise only, 3a) Husserl's later approach in *The Crisis* was arguably explicitly at odds with Cartesianism and 3b) major phenomenologists including Heidegger and Merleau-Ponty were consistently anti-Cartesian. There is thus not sufficient reason, in our opinion, for being as dismissive of phenomenology as Deely is. See also Jeffreys 2010.

Deely's overall framework is detailed in *Four Ages of Understanding* (Deely 2001), where he divides the history of philosophy into four eras: 1) Ancient thought, 2) Latin thought, 3) Modern thought and 4) Postmodern thought, which Deely takes to be synonymous with semiotic thought. His rejection of Husserl and in consequence phenomenology must be seen in light of his categorisation of Husserl as a Modern thinker. The Moderns, in Deely's reading, starting with Descartes, took representations to be self-representations (i.e., ideas) only, and thus lost sight of representations as other-representations, which leads to a (triadic) conception of sign that transcends, and bridges, the different modes of being. It is therefore, in Deely's thought, only postmodern, i.e. semiotic, thinkers who can overcome the age-old contradiction between idealism and realism. In that grand narrative Deely frames Husserl as an idealist.

As for the phenomenological reception of Uexküll's work, Merleau-Ponty, for his part, related explicitly to Uexküll in his lectures in the late 1950s, as reflected in the posthumously compiled work *Nature*, which has only fairly recently been translated into English (Merleau-Ponty 2003). Merleau-Ponty's treatment of Uexküll as described in *Nature* took place in the second in a series of three courses which he held a few years before his sudden death. It is worth

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[19] This corresponds to Deely's statement in Tønnessen and Deely 2011:

> Phenomenology as it came out of Husserl is an epistemology, and it is a very modern idealism. You could be a phenomenologist and not necessarily be an idealist, but as a matter of fact Husserl was an idealist. And as a matter of fact, within phenomenology you do not have the means to make a decision between realism and idealism. So the whole problem of idealism versus realism is a creation of modern philosophy, and it is the problem that semiotics moves beyond[.]

noting that this second course started off with Descartes, and can be seen as an attempt to deconstruct the Cartesian notion of nature and offer an alternative to it. It is in this context Uexküll's Umwelt theory is treated by Merleau-Ponty – as a potential substitute to what he regarded as a highly problematic conception of nature. For a brief treatment of Merleau-Ponty's take on Uexküll, see Paper I (p. 60) (and for a much more comprehensive treatment of both Merleau-Ponty's and Heidegger's relating to Uexküll, see Buchanan 2008).

What does it involve to conceive of phenomena as a layer of semiosis? It must imply conceiving of phenomena as semiotic, and further conceiving of some further semiosis as non-phenomenal, perhaps located "below" and "above" the layer of phenomena. More specifically, given our views as detailed in 1.2 *On the levels of biosemiosis*, we conceive of this further, non-phenomenal (or non-perceptual) semiosis as being super-perceptual and sub-perceptual respectively. There are thus in basic terms, in the grand scheme of things, three layers or levels of semiosis – and phenomena, the perceptual kind of semiosis, is situated as the central layer.

We can envisage at least four different possible fundamental relations between semiotics and phenomenology:
1) that these are two distinct fields,
2) that these are fields which overlap but furthermore cover their distinctive areas,
3) that semiotics encloses phenomenology altogether and
4) that phenomenology encloses semiotics altogether.

In this thesis we vouch for position 3.[20] This implies that of the two terms 'semiotics' and 'phenomenology', 'semiotics' is definitively the most general term. The main axiom of Uexküllian phenomenology as presented in the context of this section could be that *the phenomenon is a special case of semiosis*. Semiosis, in other words, is the general entity, or process, of which phenomena are part. The axiom just mentioned could be taken to imply that phenomenology can be regarded as a subdiscipline of semiotics, as sketched in 1.2 *On the levels of biosemiosis*.[21]

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[20] Husserl, who held that the phenomenological threshold is lower than the semiotic, would likely argue for position 4, or alternatively position 2. John Deely's rejection of pheno-menology to the effect that these are mutually excluding fields (i.e., competing perspectives) implies adopting position 1.

[21] Our assertion that semiotics may be conceived of as more comprehensive than pheno-menology may strike many as absurd, given that Husserl, for one, held that phenomenology envelops all the phenomena of mind. The difference between Uexküllian and strictly Husser-lian phenomenology on this point is that the former operates with a vastly wider notion of 'mind'. While a Husserlian phenomenologist may find Uexküllian phenomenology to be absurdly broad, speculative, or conceptually bewildered, an Uexküllian phenomenologist may find Husserlian phenomenology to be unduly narrow.

2.3. Husserl's notion of Lebenswelt

In Herbert Spiegelberg's monumental *The Phenomenological Movement: A Historical Introduction* (Spiegelberg 1982, 768 pp.), Uexküll is only mentioned once (p. 146), in the context of Husserl's development of the notion of *Lebenswelt*:

> Now this world in the sense of an all-inclusive horizon was clearly not the world in the sense of objective science or cosmology. It was the world as experienced by a living subject in his particular perspective, however distorted, hence clearly a subjective and relative affair. The only form in which this concept had found entrance into science was that of a subjective environment (*Umwelt*) as introduced into animal psychology especially by Jakob von Uexküll.[22]

In preparation of 2.4, regarding the notion of Uexküllian phenomenology, it is crucial to address the question concerning the possible association of Husserl's *Lebenswelt* and Uexküll's *Umwelt*. In how far are they comparable, or even overlapping notions? "Consciously we always live in the life-world;" Husserl (1970a: 379) wrote in what would become one of the appendices to *The Crisis* ("[The Life-World and the world of science]"); "normally there is no reason for making it explicitly thematic for ourselves universally *as* world. Conscious of the world as a horizon, we live for our particular ends, whether as momentary and changing ones or as an enduring goal that guides us."[23]

The term 'Lebenswelt' occurs occasionally in some earlier texts by Husserl (in his manuscripts as early as 1917, and in print first in 1924), but only emerges as a special and prioritised theme in *The Crisis* (Husserl 1970a), Husserl's last and unfinished work (Spiegelberg 1982: 162). The first times the notion was mentioned in print in Husserl's lifetime, it referred to items shared by several people in the same "life group".[24] In the posthumous version of *The Crisis* (Husserl 1954, cf. Husserl 1970a), the Lebenswelt surfaces as a special theme in section h), in Husserl's discussion of Galileo's "mathematization of nature". The title of subsection h) is "The Life-World as forgotten foundation of meaning for natural science". This famed and influential subsection was according to Spiegelberg inserted into the manuscript only at the galley stage. "This fact and the absence of the concept from both the Vienna and the Prague

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[22] Note that Uexküll did not approve of the animal psychology (Tierpsychologie) of his time. More accurately, the notion of a subjective world was introduced by Uexküll in biology via the emerging field of ethology (the study of animal behaviour).

[23] The Lebenswelt has by now two times been characterised by mention of the term *horizon*. "Of considerable importance", remarks Spiegelberg (1982: 117), was […] Husserl's new concept of the horizon of the perceptual field, inspired largely by William James' conception of the 'fridges' of our perceptual consciousness. It finally led to the development of the phenomenology of the life-world encompassing all horizons."

[24] As such it resembles our notion of *common-Umwelt* to some extent – see Tønnessen 2003: 288–291.

lectures", he writes (*ibid.*), "suggests that it was not until 1936 that the idea became focal in Husserl's thought." Given that Husserl died in 1938 that would leave only two years at most for its proper development by Husserl.

But as a matter of fact, the sections on the Lebenswelt were *omitted* from the version of *The Crisis* that appeared while Husserl was still alive. As Spiegelberg (1982: 144) narrates, "[p]ractically nothing of the theme of the *Lebenswelt* or world of lived experience was known to outsiders during Husserl's lifetime. The only time that Husserl came close to releasing it was when he prepared the second installment of the *Crisis* text [cf. Husserl 1954, first published in 1936[25]] for publication in *Philosophia* during his last years."

In Carr's observation (1970: xli), the Lebenswelt presents Husserl's phenomenological program with two overarching difficulties.

> One questions one of the most important aspects of Husserl's over-all theory, and the other threatens to undermine its claim to scientific rigor. In the first case, if we take seriously the "pregivenness" of the life-world, upon which the author repeatedly insists, Husserl's earlier idealism seems to be in difficulty. […] if it [the life-world] is in turn to be dealt with in terms of transcendental constitution, as Husserl also insists, then it seems to lose precisely what was described as one of its essential features, its pregivenness.

The first difficulty, then, concerns a conflict between pregivenness and transcendental constitution. Husserl's beloved notion of the 'transcendental', however, was fuzzy and in constant development. As to idealism, it is by no means essential for us to come to the rescue of Husserl's earlier understanding – in fact, being in conflict with idealism does not pose a problem to us at all. The second difficulty emerging from the introduction of the Lebenswelt theme in Carr's reading concerns a conflict between the Lebenswelt as pregiven in the sense just mentioned and how theory then comes to depend on the Lebenswelt as its only source. "But if every theoretical activity presupposes the structures of the life-world, this must also be true of phenomenology, which in this case cannot be without presuppositions." Again, this poses a problem for phenomenology as outlined in Husserl's earlier career, but not for Uexküllian phenomenology, since Uexküllian phenomenology does not have to claim to be without presuppositions. Carr's observations imply that phenomenologists have to choose sides between the early Husserl and the late Husserl, but do not pose any related problem to an Uexküllian phenomenologist, lest she be of an idealist persuasion or hold that phenomenology is without presuppositions even with regard to the role of Umwelt for theory.

As Spiegelberg (1982: 144) notes, the some ninety pages of *The Crisis* that are, in its draft version, devoted to the subject of the Lebenswelt "do not contain more than first indications as to the directions" of Husserl's final, radical step in developing phenomenology. If we are nevertheless to conclude on to what

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[25] Note that the 1954 version includes parts not included in the 1936 version, in the form of appendices. See also Husserl 1970a.

extent the notions of Lebenswelt and Umwelt are comparable, or even over-lapping, our first observation will have to be that there is a profound difference between Uexküll's theoretical starting point and that of Husserl. Namely, while Uexküll places any lifeworld in principle on equal terms, and emphasises differences, Husserl takes the human lifeworld to be the default lifeworld. Admittedly, Uexküll did in one sense also start off methodologically with the human lifeworld, and then proceeded by identifying those of the human Umwelt objects that were also to be found in non-human Umwelten. But Uexküll's interest for significant, radical otherness results in a pluralistic worldview all the same, and he stresses that there is a difference between Umwelt methodology and the manifold reality of nature. Neither Husserl nor Heidegger, the second most influential phenomenologist, had any comparable detailed interest in the lifeworlds of other creatures.[26] While Uexküll's worldview is pluralistic, theirs is gradualistic in the sense that non-humans are simply more or less human-like. To them, Man and his world is the only measure for what counts as real and significant.

When Husserl says that "[c]onsciously *we* always live in the life-world" (1970a: 379, our emphasis), he refers to humans, to people. But that does not mean that he conceived of the Lebenswelt as a human enterprise only. As Carr informs in a footnote to *The Crisis* (Husserl 1970a: 6), 'surrounding world' is used throughout for 'Umwelt' in the English translation. The term 'Umwelt' appears already on one of the first pages, in a central passage (*ibid.*).

> In our vital need – so we are told – this science [contemporary European natural science] has nothing to say to us. It excludes in principle precisely the questions which man, given over in our unhappy times to the most portentous upheavals, finds the most burning: questions of the meaning or meaningless-ness of the whole of this human existence. Do not these questions, universal and necessary for all men, demand universal reflections and answers based on rational insight? In the final analysis they concern man as a free, self-determining being in his behavior toward the human and extrahuman sur-rounding world [Umwelt] and free in regard to his capacities for rationally shaping himself and his surrounding world [Umwelt]. What does science have to say about reason and unreason or about us men as subjects of this freedom?

Surely, the use of the term 'Umwelt' in a German text is occasionally tricky to interpret, given that it can refer either to 'environment' in its common, general sense or to the more specific Uexküllian notion of Umwelt. In some cases, however, Husserl refers explicitly to animal lifeworlds. In one of the appendices to *The Crisis*, for instance – "The attitude of natural science and the attitude of

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[26] Of course, neither Husserl nor Heidegger was a biologist. But in as much as they addressed matters of Man's exceptionality, they had an obligation, even as philosophers, to familiarise themselves with biological knowledge. Heidegger's notion of 'the animal' as "poor in world" (Heidegger 1995) in principle is particularly telling of his sweeping conclu-sions.

humanistic science: Naturalism, dualism, and psychophysical psychology", written before 1930, Husserl (1970a: 331) refers to a new attitude toward men and animals, "toward men and animals not as bodies to be investigated consistently and descriptively in the attitude oriented towards nature but as *men (or animals) who have their bodies as living bodies, who have their personal surrounding world* [*Umwelt*], oriented around their living bodies as the near-far world […]" (our emphasis). In this case, there is no doubt that 'Umwelt' is applied in an Uexküllian sense. We find a similar statement, one which stresses Husserl's gradualistic stance with regard to the human species and how other lifeforms compare with it, in the main body of *The Crisis* (Husserl 1970a: 238, our emphasis):

> As the correlative abstraction teaches us, man (and everything else that is real in animal form) is, after all, something real having two strata and is given as such in pure experience, purely in the life-world [Lebenswelt] […] The individual psychology must, then, be the foundation for a sociology and likewise for a science of objectified spirit (of cultural things), which after all refers, in its own way, to the human being as person, i.e., to the life of the soul. *And all this can be applied by analogy – just as far as the analogy reaches – to animals, to animal society, to the surrounding world* [*Umwelt*] *with its specifically animal signification.*

To summarise, Husserl's conception of Lebenswelt implies that there are animal lifeworlds (Lebenswelten) as well, "as far as the analogy reaches". The human Lebenswelt is the measure of other lifeworlds, and their model insofar as methodology is concerned. While there are limits to how far the Lebenswelt notion and the Umwelt notion are comparable, they are evidently partly overlapping. To the extent that this is the case, one should not forget that Uexküll's development of the Umwelt notion for the most part *preceded* Husserl's development of the Lebenswelt notion (in that sense, we could even claim that there is a measure, albeit small, of Uexküllian phenomenology in Husserl's late phenomenology).

The point at which Uexküllian phenomenology and Husserl's late conception of phenomenology are the most similar concerns the lifeworld (as in the human Umwelt) as the forgotten foundation of meaning for natural science. As reported in 2.1 *On the notion of phenomenology*, Husserl's ideas about phenomenology were so rich, so manifold and so contradictory that it is not only hard to define 'phenomenology' consistently, but even to define what 'Husserlian thought' as such involves. This fact should embolden us to pursue our deepest intuitions regardless of dogma and tradition. Rethinking phenomenology is justified by the mere fact that Husserl himself never stopped rethinking phenomenology.

2.4. The notion of Uexküllian phenomenology

The reason why it makes sense to propagate a variant of phenomenology under the label 'Uexküllian', apart from the descriptive foundation in Umwelt theory, is that Uexküll's fundamental premises about the nature of life are desperately needed in our time – and in the life sciences of our time. While today's life sciences are for the most part reductionist – neglecting the reality of the individual, the primary stakeholder in nature – Uexküll's call for a subjective biology echoes Husserl's call for a return to the things themselves in the most meaningful way possible, by in effect implying a return to the study and perception of *nature qua individuals, nature qua living creatures*.

Perception is not as such a self-reflective activity, but rather a sustained attempt of grasping something which in part opposes the subject and in part constitutes its very being. There is a world out there – a world of differences, a world of creatures, almost all of them differently constituted than oneself, but many of them nevertheless constitutionally related to oneself. In this world of existence-through-and-with-others, *consciousness* no doubt plays a part, but by no means delineates the horizon of our entire bodily awareness. In fact, consciousness is but a special case of *awareness* – a much more common phenomenon, appearing in countless forms ranging from the amoeba to the (ludicrous?) human genius.[27] While consciousness might very well represent the most novel evolutionary innovation in which we partake, being conscious is, in general terms, *not* a prerequisite for navigating in the world of the living. For us humans – us mindful creatures – the existential (and epistemological!)[28] challenge is first of all a matter of not getting trapped in our own minds. By neglecting the *foundation* of consciousness – its natural sources; its bodily underpinning and its evolutionary roots – we risk being very poor examples of big-brained animals.

What we present under the label of 'Uexküllian phenomenology' in this dissertation is characterised by an assumption of the (in the realm of life) universal existence of a genuine first person perspective, i.e., of experienced worlds. Uexküllian phenomenology as we will portray it is an example of – a special case of – a *semiotics of being*, taken to be a study of signs designed so as to emphasise the reality of the phenomena of the living (see Paper II).

We have no doubt that some semioticians will think that Uexküllian pheno-menology is not sufficiently or properly semiotic, and that some phenome-nologists will think that Uexküllian phenomenology is not sufficiently or properly phenomenological. This would at least be a predictable fate for a daring philosopher-become-semiotician who easily risks being regarded as a philosopher only among semioticians and as a semiotician only among philosophers. It would also be an implication of the radicality (as in novelty) of

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[27] There are as many notions of awareness as there are of consciousness. The definition of awareness as "a much more common phenomenon" than consciousness is to be used in this dissertation.
[28] And ethical!

Uexküllian phenomenology as it is presented in this dissertation. Accepting Uexküllian phenomenology presupposes a willingness to think anew about what phenomenology is all about. It cannot on all points be in accordance with old definitions of phenomenology, for in itself it entails elements of a new definition of phenomenology.

In this section we will address how Uexküllian phenomenology differs from traditional phenomenology – which has for the most part been consciousness-centred – how it differs from notable phenomenologies by not adopting neutrality with regard to the reality status of phenomena, and how it resembles other phenomenologies in various aspects. We will further treat – however briefly – the basic difference between Husserl's and Merleau-Ponty's approach to perception, and point to the theoretical possibility of other conceptions of Uexküllian phenomenology than that of the current thesis.

First, however, another disclaimer is called for (cf. our Peircean disclaimer in the beginning of this *Introduction*). As we argue in this thesis (especially in Paper I), the Umwelt theory of Jakob von Uexküll needs to be updated with regard to its neglect of the historical dimension of life processes. At some other points, as well, his work is too marked by his time and his concrete influences – a case at hand is his relation to Kant. If one examines the way Uexküll himself tried to generalise his biological findings and make them relevant for politics, the picture becomes even gloomier (see Harrington 1999, treated in Tønnessen 2003, and Uexküll 1920). A general disclaimer is therefore in order: Uexküllian phenomenology as we portray it is loyal not to Uexküll's thought in detail but to his essential finding that nature is constituted by the intricate relations of all living creatures, which are all subjects of the phenomenal world at large. Uexküllian phenomenology should be rigorously undogmatic. This applies not only to Uexküll's work, but also to semiotics as a scholarly discipline.

The definition of phenomenology in *The Stanford Encyclopedia of Philosophy* (Smith 2011) reads like this: "Phenomenology is the study of structures of consciousness as experienced from the first-person point of view." Such a notion of phenomenology is much too narrow to even begin to cover the substance of Uexküllian phenomenology. While this definition is largely in line with the conception of the phenomenal world of Kant, Hegel and Husserl (to the extent that the former two addressed matters of phenomenology in a modern sense of that word), it is outdated if we consider contemporary eco-phenomenology or indeed Uexküllian phenomenology.

While we do interpret Umwelt theory as a genuine theory of phenomenology, and thus as qualified phenomenology, we must as mentioned acknowledge that we have a special take on phenomenology which will inevitably be regarded by some as in fundamental conflict with phenomenology as they conceive of it. A point at hand is the role of *subjective appearance*. For David Abram as well as for Charles Sanders Peirce and Edmund Husserl, phenomenology is, or should be, concerned with subjective appearances *as they appear*, regardless of their connection to any 'reality'. This stand is typical of

Abram's phenomenological animism (see our critique in Paper III[29]), Peirce's phaneroscopy and Husserl's phenomenology alike, and occurs as one of the core criteria for what counts as phenomenology in Spiegelberg 1956. As we hope to demonstrate throughout this dissertation, our stand is instead that even though absolutely all (human) perceptions are worthy of analysis and comment, it is crucial to distinguish between those perceptions that correlate to corresponding realities and those that do not. In the latter case we often have to inquire into the *symbolic construction* which must be understood in order to explain how such perceptual inconsistencies can arise in the first place (as an example, consider this dissertation's 4.5 *The symbolic construction of the Big Bad Wolf in contemporary Norway*).

Where Husserl and Peirce – and arguably Abram, given his animism – stress the principal insignificance of whether or not phenomenal objects have real existence beyond their appearance, Uexküllian phenomenology has evolved from empirical science and presupposes the assumption that *wherever there are functional relations there are real, existing entities or processes*. Distinguishing between real and illusory objects thus becomes pertinent. In place of Husserl's phenomenological slogan "To the things themselves!" we can credibly place our own *To the Umwelt objects themselves*![30]

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[29] In defence of Abram, we should consider what his animism aims at. This is a crucial point, since we understand that in his view revising this one point in his philosophy would tinker with his overall message. Abram's animism can fruitfully be contrasted with Cartesian dualism – as an attempt to deconstruct, or counteract this long-held metaphysical thought (Wendy Wheeler pointed this out to us). Instead of distinguishing between mind and matter, Abram seems to suggest (and in an all too narrow way, at that), we should take refuge in immediate experience as it is. This refuge is apparently a logical step, in terms of pheno-menology. – Is Abram's animism in line with Husserl's phenomenology? On one hand, the two appears to agree that any belief in the existence of things underlying experience should be suspended. On the other hand, Abram might actually be said to be in violation of this principle of bracketing, given that he appears to draw ontological conclusions based on his animism. The later Husserl would likely criticise Abram for taking a naïve, natural attitude as his alpha and omega.

At any rate, Abram's animism finds support in its alliance with oral cultures and typical animal experience alike. In order to *become animal* in the sense of Deleuze (see Deleuze and Guattari 1987, and the title of Abram 2010), we have to do as the animals do. From that perspective Abram's animism is simply a consequence of his empathic attitude to animals. We could further argue that a sort of alignment with physical nature, with seasonal variations etc., constitutes a suitable ideal for a way out of the ecological crisis. From that perspective one could choose to see Abram's animism as an allied view, in that Abram favours exactly this kind of participatory relationship with both living creatures and physical nature in a wider sense. Our conclusion must be that Abram's animism serves a number of good intentions which are worth being followed up in their own right, but that it serves poorly as metaphysics or ontology.

[30] As we will see in 6.1 *Theoretical findings* (see particularly Figure 13, depicting a tripartite model of the human Umwelt), we are in this thesis eventually able to distinguish between Umwelt objects *as encountered*, Umwelt objects *as anticipated* and Umwelt objects *as conceptualised*.

What other approaches in phenomenology is Uexküllian phenomenology in line with? As it turns out, is has aspects in common with several approaches, but differs from each of these in other respects. Like Heidegger's phenomenology, for instance, it at times resembles (philosophical) anthropology. Like Merleau-Ponty's and Sartre's phenomenologies it emphasises the role of the corporeal, and like Sartre's phenomenology it stresses (in our concrete version of it) phenomena related to *absence* and *meaninglessness*. All that said, Uexküllian phenomenology does differ fundamentally from much that goes under the name of phenomenology. Husserl for one did not envision any phenomenology of particulars (nor did Peirce). On this point, however, Uexküllian phenomenology has a number of allies in post-Husserlian phenomenology, but none of these have taken as its starting point that absolutely all living creatures are englobed in phenomenal worlds, and thus that we can legitimately speak about individual phenomenologies (in the sense of "the phenomenology of individual X") throughout the realm of the living.

Uexküllian phenomenology in our depiction is particularly affiliated with a line of phenomenological development that goes from the late Husserl via Merleau-Ponty to the contemporary phenomenologist David Abram. As Spiegelberg (1982: 538) narrates, "what Merleau-Ponty attempted was to go beyond Husserl by consciously extrapolating certain lines, mostly from unpublished texts, as far as he knew them, and by playing down others in the published writings." In a somewhat comparable vein we build on yet go beyond the phenomenological works of Husserl, Merleau-Ponty and Abram.

Our natural affiliation with Merleau-Ponty's phenomenology is best expressed by way of his cherished thesis of the *primacy of perception*. If we have adopted this thesis without much critical reflection, it is testament to the fact that we do associate with his approach. As Spiegelberg (*ibid.*, 560) explains, primacy "simply means that perception constitutes the ground level for all knowledge, and that its study has to precede that of all other strata such as those of the cultural world and specifically that of science." In his main work *Phenomenology of Perception*, Merleau-Ponty (1962) left out a number of aspects of perception which had been treated by Husserl. Of particular interest is the fact that he predominantly omitted any "mention of Husserl's characterization of perception as the act in which an object is bodily given" (*ibid.*). "In spite of its comprehensive title, this is not the final phenomenological monograph of perception", Spiegelberg concludes, pointing out that it also contains substantial philosophical discussions which had not traditionally been associated with the topic of perception. "Merleau-Ponty's phenomenology of perception", he summarises (*ibid.*, 560–1), "is primarily an attempt to explore the basic stratum in our experience of the world as it is given prior to all scientific interpretation." Increasingly through his interest in Husserl's notion of Lebenswelt, Merleau-Ponty's was "actually a phenomenology of the world as perceived rather than of the perceiving act." Husserl, in contrast, focused on the *act* of perception, as an act of consciousness. Merleau-Ponty instead focused on *what* is perceived, and the material of perception. In a sense Merleau-Ponty

returned to "the things themselves" (as in material *reality* – though this was not Husserl's intent) much more consistently than did Husserl himself, except in his eventual development of the Lebenswelt notion. And the difference between Merleau-Ponty and (at any rate the early) Husserl with regard to perception is not simply a difference in emphasis. Merleau-Ponty's approach implies that "perception emerges as the act designed to trace elementary meaning as actually already present in the world prior to our interpretations. This emphasis on meaning as discovered, not bestowed by investing acts, is certainly new, though it is not an absolute innovation" (*ibid.*, 563).

In conclusion, we find it appropriate to make clear that Uexküllian phenomenology as it is conceived of in this dissertation is not the only possible version of Uexküllian phenomenology. One could for instance have envisioned an ahistorical (to some extent even an atemporal) Uexküllian phenomenology – which might have been more in line with both Uexküll and Husserl, judging by the letters contained in their respective works. That road, however, is not the one taken here, since we regard the ahistoricity of the Umwelt theory as its weakest point, and have chosen *change* as our very topic. Such an Uexküllian phenomenology might have been "more Uexküllian" in a strictly biographical sense, but it would have been poorer qua phenomenological philosophy, and qua philosophical theory relevant for contemporary science. Had our concern been that of the historian of philosophy, that approach would certainly have been more appropriate than our current undertaking. But our primary concern is to contribute to an updated Uexküllian thought, and we can thus not offer allegiance to Uexküll in all details any more than we are prepared to offer allegiance to all that is associated with the term 'phenomenology'.

3. UMWELT MAPPING

This section is concerned with the question of method. Insofar as scientific method is discursive, the current section is further concerned with factual discourse. An intricate problem with factual discourse is that empirical arguments are often superficial and disconnected from the intuitions underlying and often driving the discourse. Empirical knowledge in oversight terms is crucial to any interdisciplinary project, and perhaps especially to those that, like this one, crosses the nature/culture divide. It is an expressed goal for this dissertation to avoid being dogmatic. An undogmatic theory or theoretical approach must be empirically grounded, and its theoretical framework revisable in light of empirical findings.[31] Any theory is a simplification of actual reality. Empirical reality complicates matters exactly because there are virtually always exceptions, counter-examples, to proposed theories, which are by their very nature simplifications of actual matters. Viable theories handle these challenges by adapting to them; less feasible theories by neglecting them for as long as they are allowed to.

Semiotics as an interdisciplinary approach can thrive only by absorbing knowledge from other, narrower, more specialised fields. Many 'grand narrative' approaches in semiotics and philosophy – semioethics as presented by Ponzio and Petrilli (2005), to mention but one example – are empirically weak. Petrilli, who in a forthcoming interview concedes that the semiotics (aka philosophy) of John Deely is dogmatic, does not regard her own work as dogmatic.[32] But theories without (sufficient) empirical grounding *are* dogmatic.

Dogmatic theories carrying grand narratives eventually end up as self-confirming worldviews. The perilous circumstance is that any 'fact' has to fit in with the overall narrative. The solution is not to avoid narratives – because after all we all operate with narratives that guide our lives, our views and our actions (and that statement is valid even for philosophers, insofar as they are human) –

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[31] Any theory needs direction, e.g. prioritisation of topic matter and concise analysis. Theory with no direction is hardly theory at all. It is therefore a balancing act not to be *solely theoretical* (as in dogmatic), and simultaneously not be *solely empirical* (as in without theoretical direction).

[32] After all, very few – except for believers in Christian or other *dogmas* portrayed as such – would admit to being dogmatic. 'Dogmatic' is as a rule a designation for *others*, not for oneself. It should be noted, however, that dogmatic theories can offer valuable theoretical developments, and frequently do. In the case of Ponzio and Petrilli, part of the appeal of their work on semioethics derives from shared intuitions which can be traced back to common vocabulary etc. Building extensively on the history of semiotics and philosophy, their work resonates with the thought of many in part because they share central references with their readers. Drawing on the history of thought is a fine way of instigating theory. The problem arises when the contemporary scene globally in terms of social and ecological relations is interpreted predominantly via historical, often outdated concepts and models of thought. There is ample proof that several factual claims made by Ponzio and Petrilli in the context of semioethics are in actual fact derived deductively, from theory, and not derived from empirical observation (and that the empirical landscape contradicts their claims).

but to be clear about them, and to expose them to a brute meeting with empirical reality. The real problems occur when alleged facts are *but* deduced from overarching theory, rather than induced from empirical reality. There is nothing wrong with starting off by proposing hypotheses on the grounds of deductive reasoning. But if these hypotheses are not tested by comparing them to empirical facts derived by way of induction – and corrected, revised, in case of any discrepancy – they are of poor value. Deduction tested and confirmed by induction is legitimate bordering on scientific; deduction with no or only poor empirical testing is dogmatic.

The remaining of this section is devoted to developing visual representation of an adaptation of Friedrich Brock's *phenomenal fields* in the context of Umwelt transition, and to present the notion of *semiotic causation*.

3.1. Visual representation of Brock's phenomenal fields

As we have seen, the phenomenal world at large – 'nature' considered as the totality of all the lifeworlds of all the living on this planet we call "Earth" – mirrors 'the biosphere' understood as the sphere of the living in a more material sense. In our take on mapping the human impact on and in nature (see Paper IV in particular), "Man's place in nature" will methodically be rephrased as "humankind's place in the phenomenal world at large'. What matters in this reconfiguration of the natural world is, to put it simply, what matters to the living themselves. That, at least, is the pronounced goal of Umwelt mapping as it is described here.

In Paper II, p. 385, we describe Friedrich Brock's attempt (1939) to develop something akin to an ethogram of subjective experience. The problem according to Brock (*ibid.*, 37) is that each Umwelt considered as a whole is unique by definition and therefore escapes comparison – but the functional cycle, on the other hand, *can* serve as foundation for comparing Umwelten. While Brock suggested that the four main types of functional cycles could serve as key notions in categorising behaviour, which is assumed to reflect private experience (strictly speaking a mere repetition of what Uexküll taught), we state in Paper II that rather than describing these 'phenomenal fields' (as we call them) comparatively, in comparison of different life forms, we may just as well describe these four main phenomenal fields for one single species, population, or individual organism, over time.

This point is worth dwelling on, for the sake of clarity. Brock's seminal text is entitled *Typenlehre und Umweltforschung: Grundlegung einer Idealistische Biologie*, in English *Type Theory and Umwelt Research: Foundation of an Idealistic Biology*, and is dedicated to Hans Driesch (1867–1941) and Uexküll, "my teachers" ("meinen Lehrern"). Section three out of five of this brief treatise (pp. 10–18) is entitled "Die Umweltlehre Jakob v. Uexkülls als metodische Grundlage einer 'Idealistischen Biologie'" ("The Umwelt theory of Jakob von Uexküll as a methodological basis for an 'idealistic biology'"). We note in

passing that our estimation of Brock's text does not involve any support of his introduction of *idealist* biology as such.[33] Brock's portrayal of idealistic biology is partly motivated by polemic with zoologist Hermann Weber (1899–1956), cf. Brock 1939: 2 (our translation – here and in the following). According to Brock it is Weber

> who in his above-mentioned treatise [Weber 1931] has seen and sharply outlined the core of the problem, so that his formulation can serve as a first introduction to our way of thinking. He writes: "The Umwelt theory is, as Brock once explicitly emphasised, *a typology, no evolutionary theory* […] Needless to say, this concerns a purely idealistic typology which has nothing to do and wants nothing to do with evolutionary thought."[34]

Brock's stand is problematic given our critical understanding of Uexküll's ahistoricity. "*The Umwelt theory* […]", writes Brock (*ibid.*, 3) "*is, as Weber correctly writes, a typological and no historical method.*"[35] Further adding to the *problématique* is the fact that Brock states dogmatically (*ibid.*, 14) that "[*t*]*he behaviour of all animals is linked to a particular finite number of signifiers* [*meaning carriers*]."[36] The implication of our statement that rather than describing Brock's phenomenal fields comparatively, in comparison of different life forms, we may just as well describe these four main phenomenal fields for one single species, population, or individual organism, over time (cf. Paper II, 385), is thus a radical revision of Brock's view. While his was a static and finite biological typology, ours is a dynamic and indeed historical biological typology. We share the conviction, however, that (*ibid.*, 36) "[t]he main task […] is to express the biological sense context between an animal subject and its world, as it is symbolised through the functional cycle and its signifier [meaning carrier], including in its seemingly insignificant capacities."[37]

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[33] Brock's text makes mention of Leibniz, Plato and Goethe, but is for the most part nominally influenced only by Leibniz and Plato and substantially influenced perhaps only by Goethe, who figures in a much more important role, though no work by him (nor of these other two) is included in the text's bibliography. No major philosopher is referenced in Brock's treatise.

[34] "[...] der in seiner oben genannten Abhandlung [Weber 1931] den Kern des Problems gesehen und scharf umrissen hat, so daß seine Formuliering als erste Einführung in unsere Gedankengänge dienen mag. Er screibt: 'Die Umweltlehre ist, wie auch Brock einmal ausdrücklich betont, *eine Typologie, keine Entwicklungslehre* ... Unnötig, ausdrücklich zu sagen, daß es sich dabei um eine rein idealistische Typologie handelt, die mit den Entwicklungsgedanken nichts zu tun hat und zu tun haben will.'"

[35] "*Die Uexküllsche Umweltlehr*e [...] *ist, wie Weber richtig schreibt, eine typologische und keine historische Methode.*"

[36] "[*d*]*as Verhalten aller Tiere ist an eine beswtimmte endliche Zahl von Bedeutungsträgern geknüpft.*"

[37] "[*d*]*ie Hauptaufgabe* [...] *ist es jedoch, den biologischen Sinnzusammenhang zwischen Tiersubject und seiner Welt, wie er durch die Funktionskreise und ihre Bedeutungsträger symbolisiert wird, auch in der scheinbar unbedeutundsten Leistung zum Ausdruck zu bringen.*"

We reiterate that the exact expression 'phenomenal field' is our own coinage. When Brock sets out to depict the Umwelten of two different creatures, he writes (*ibid.*, 37):

> The Umwelten of two quite different animals [...] can symbolically be depicted as circles, in which the animal subject has its standpoint in the center. Since the Umwelten qua wholes, as we have seen, are not at all comparable (cf. p. 11), we draw the circles with different sizes and furthermore we draw one completely and sketch the other. For the sake of simplicity we divide the circle in four equal parts. These could represent the four most important biological fields, which we in the Umwelten can characterise as functional cycles. We are thinking about the field of medium[38] mastery, of sexual activity, of prey and enemy encounters. In the field of prey we pin down the nourishment qua signifier [meaning carrier] as a cross. A *precisely similar* dietary marker of the animal subject now plays a role in both Umwelten. These lines are the symbol for the same performative principles within equally toned functional fields in different Umwelten.[39]

In the figure of Brock 1939: 37, the four fields which we call phenomenal fields are by Brock called:

"Feld der Medium-beherrschung"   = Field of medium mastery
"Feld der Beute-begegnung"   = Field of prey encounters
"Feld geschlechtlicher Betätigung"   = Field of sexual activity
"Feld der der Feind-begegnung"   = Field of enemy encounters

Prior to presenting visual representations suitable for our current project of such phenomenal fields, we should make it clear, by way of a conceptual clarification, that the *ontological maps* (also described as *ecological sociograms*) introduced in Paper IV (Figure 1–3) could more specifically rather be called *relational Umwelt maps* (because they show an Umwelt creature in its relations to others, i.e., as an instance of relational being), whereas the term *ontological map* could fruitfully be applied as a more general term, enveloping

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[38] Medium in the sense of physical medium (be it aquatic, terrestrial, sub-terrestrial, aerial) with an eye to biological functions.

[39] "Die Umwelten zwei recht verschiedener Tiere [...] seien symbolisch als Kreise dargestellt, in deren Mittelpunkten das Tiersubjekt seinen Standort hat. Da die Umwelten als Ganzes, wie wir sahen, gar nicht vergleichbar sind (vgl. S. 11), zeichnen wir die Kreise verschieden groß und außerdem ziehen wir den einen aus und stricheln den anderen. Der Einfachheit halber wollen wir die Kreise je in vier gleiche Sektoren teilen. Diese stellen die vier wichstigsten biologischen Felder dar, welche wir in den Umwelten als Funktionskreise kennzeichnen konnten. Wir denken an das Feld der Mediumbeherrschung, der geschlechtlichen Betätigung, der Beute- und Feindbegegnung. In den Beutefeldern zeichnen wir die Nahrung durch ein Kreuz als Bedeutungsträger ein. In beiden Umwelten zieht sich jetzt je eine *völlig gleiche* Markierung vom Tiersubjekt zur Nahrung hin. Diese Lienen sind das Symbol für die gleichen Leistungsprinzipien innerhalb gleichartig getönter Funktionsfelder in verschiedenen Umwelten."

both relational Umwelt maps (aka ecological sociograms) and phenomenal fields as subcategories.[40]

We start out by depicting one Umwelt qua phenomenal fields.
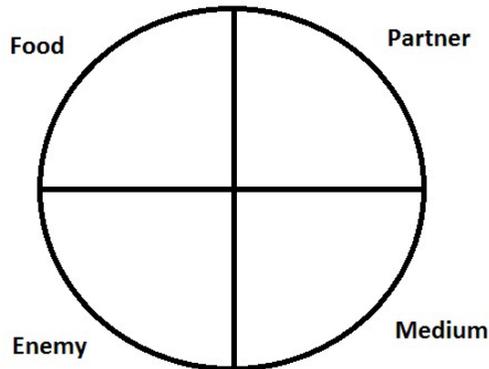
Figure 2. Phenomenal fields.

In Figure 2 we depict an Umwelt by way of four phenomenal fields corresponding to the four main functional cycles. As we plainly see, this is an adaptation of Brock's original draft. Umwelt objects associated with any of these functional cycles will here show up *inside* the relevant phenomenal field, whether we choose to represent them in words, iconically coded or otherwise coded. Note that in the case of the functional cycle of the partner, which Uexküll as a rule took to be related to sex/reproduction, we will in some cases generalise and refer this category to *social companions* in general. In terms of ecology, our popular notion of 'food' is related to foraging behaviour, and our notion of 'partner' to social behaviour in general and courtship behaviour etc. in particular.

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[40] Note that Kalevi Kull suggested the term 'relational Umwelt map' as an alternative to 'ontological map'. Relational Umwelt maps and phenomenal fields should in principle be interchangeable in that the same Umwelt circumstances can theoretically be represented either via phenomenal fields or via a relational Umwelt map (as an exercise, we could redraw the relational Umwelt maps in Paper IV's Figure 1 and Figure 2 in terms of phenomenal fields). Some information, however, might be lost in representation in both cases. What is lost when we depict Umwelt circumstances in terms of phenomenal fields is complex relations (interconnections among a group of Umwelt creatures). What is lost when we depict Umwelt circumstances in form of a relational Umwelt map is in one sense the central standpoint of the Umwelt creature. In general, representation qua phenomenal fields is most workable when what we want to emphasise is the full, or integrated, picture of an Umwelt creature in perceptual and behavioural terms; relational Umwelt maps when what we want to emphasise is complex ecological interrelations. Used in combination, they supplement each other.

Umwelt transition can in principle be depicted figuratively very easily, by juxtaposing the four main phenomenal fields (or but one, two or three) representing functioning *before* a specific change and another set of phenomenal fields representing functioning *after* the change has occurred. Here it is of significance whether the Umwelt creature in question remains the same or not. If it does, there is continuity (as in constancy) either in an individual life or in evolutionary terms. If it does not, there are either reproductive, phenotypical or other fundamental changes occurring in the process depicted.

As an example, we will present a figurative depiction of the evolutionary phenomenon of wolves becoming dogs. While in the initial Umwelt situation a wolf relates to humans as enemies, in the eventual Umwelt situation a dog (the evolutionary product, after numerous generations) relates to humans predominantly as a partner (as in social companion) and only marginally as an enemy. Any depiction whatsoever is a simplification, and if depicted only in two steps this figure would be drastically so. The tool box of phenomenal fields is flexible in principle and in practice, however, in that a *series* of fields can be depicted whenever we want to go in detail – as illustrated by Figure 3, where the evolutionary phenomenon of wolves becoming dogs is represented in somewhat more detail.
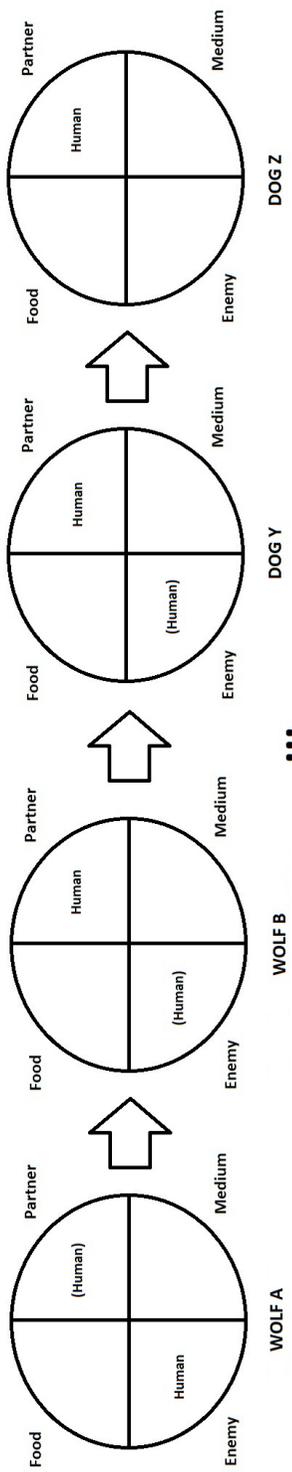
Figure 3. Umwelt transition – wolves becoming dogs – depicted over several steps.

3.2. The notion of semiotic causation

The notion of *semiotic causation* is mentioned in Paper II (p. 378, 383), and even given as a keyword for that article, but even so not thoroughly treated there. Ever since the four causes of Aristotle were rejected – with but one exception, efficient causation – the modern scientific worldview has been faced with the challenge of explaining how it can be that there are acts, intentions etc. in a world of solely mechanical interaction. Philosophers holding mechanistic, deterministic worldviews have problems explaining how there can be something like free will. Various peculiar ideas have been introduced in order to solve this problem throughout the history of philosophy, including Leibniz' idea that "the realm of efficient causes and that of final causes are parallel to each other […] matter is so disposed that the laws of motion serve as the best guidance for spirits" (Leibniz 2009 [1710]: 279). A proper understanding of what we call *semiotic causation* makes such groundless speculations unnecessary. If we accept that there is not only efficient causation but also semiotic causation, the existence of free will is not as bluntly paradoxical as it inevitably is in the context of mechanistic worldviews. Combined with a modern understanding of a stratified universe, however, where anthropogenic change only affects limited regions and layers of reality at large (as in 'the universe'), there is nevertheless no imminent need for rejecting *all* views of determinism in purely mechanistic processes, insofar, that is, as these views concern "higher" levels, and "larger" regions, of physical reality than those that we live our day-to-day lives in on contemporary Earth.

Unlike efficient causation, semiotic causation is not wholly predictable, because it involves a measure of interpretability and of interpretation. Semiotic causes are open to interpretation, in the sense that a *semiotic effect* is proof of a *semiotic cause*. We aim at developing the notion of semiotic causation as an *umbrella term* – an overarching, general term which might cover several more specific notions of causation, many of which are already in circulation in scholarly literature, biosemiotic discourse included. Attempts have been made by others as well to pinpoint such a general notion, though perhaps not as explicitly as we are doing in this dissertation (or at any rate not *as* we are doing it in this dissertation). An example: "To my way of thinking", Peter Wills wrote in email correspondence distributed in the biosemiotic community in 2011, "biosemiotics rejects the reductionist claims and ascribes a reality to signs (as possible causes of things) in biology." Another biosemiotician, the delectable Wendy Wheeler, has written (2010, quoted in Paper II, 378–379) that her "strong hunch is that abduction via 'family resemblances' (plays of semiotic similarity and difference) is a central driver of evolution so that the relationships between organisms and environments, egg and sperm, cell and DNA, rather than being mechanically deterministic, are in fact much more like conversations: their causality is semiotic." Wheeler's hunch, as we state in Paper II (379, emphasis added here) is paralleled by Uexküll's observations to

the effect that *a creature's Umwelt consists of the signs which cause it to respond*.[41]

The briefest possible definition of semiotic causation would be this one: When a sign acts as a cause, the causal process at hand is a process of semiotic causation. In a more technical manner, we can say that the semiotic cause X causes the semiotic effect Y to appear as a sign of X whenever Y appears as a sign of X. In other words, the sole appearance of the sign Y as a sign of X is in the framework of semiotic causation sufficient evidence for X being the cause of Y – in terms of semiosis, X is then the cause of Y.

As we see, wherever there is *successful* (as in effective) semiosis, there is semiotic causation. A sign that is but intended does not cause anything, except for perhaps in the mind of the intending semiotic agent. A sign that is intended as a specific sign and consequently is seen as such, on the other hand, is an *effective sign*, a sign giving rise to semiotic causation. And yet intention is no criterion for semiotic causation, since the key to initiating, generating semiotic causation lies in the eyes of the beholder – in something being *interpreted* as a sign. Semiosis, therefore, is potential causation – a sign is a potential cause.[42]

It is our conviction that experience, cognition, feelings and other subjective phenomena *can* only be explained (as meaningful phenomena) if we allow for something akin to semiotic causation, operating at different levels of biological integration wherein we observe emergent qualitative novelties. A notion of semiotic causation might at first glance seem innocent enough, but it has ramifications of fundamental ontological and epistemological significance. In most interpretations it will defy mechanistic worldviews, which is in our times often represented by philosophical positions such as *physicalism* ("the thesis that everything is physical, or as contemporary philosophers sometimes put it, that everything supervenes on, or is necessitated by, the physical" – Stoljar 2011) and *epiphenomenalism* ("the view that mental events are caused by physical events in the brain, but have no effects upon any physical events" – Robinson 2011).

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[41] A notion of semiotic causation could even in some measure be associated with Husserl's notion of intentionality. "Incidentally," as Spiegelberg (1982: 155) writes, "Husserl uses the term 'intention' not only for a feature of acts but also for the relation between the sign (or symbol) and its referent […] in fact this is the sense which occurs first in the *Logische Untersuchungen* [see Husserl 1970b]. […] However, this relation between symbol and symbolized is clearly the offspring of intentional acts which establish 'objective' intentionality in the field of symbolism."

[42] Note that semiotic causes and semiotic effects are in many cases interchangeable in the sense that one and the same sign can in one context be a semiotic cause and in another context be a semiotic effect. This interchangeability corresponds to the generally flexible relation between sign, object and interpretant in standard Peircean thinking.

4. CASE STUDY:
NORWEGIAN WOLF MANAGEMENT

This section will start out by giving an overview of field trips conducted, and then in sequence treat the cultural semiotic of wolves and sheep, Arne Næss' philosophy of wolf management, invasive management in Scandinavia of the wolf – a shy animal, and the symbolic construction of the Big Bad Wolf in contemporary Norway. All photos reproduced here are taken (and edited) by the author.

First, however, a little background in summary terms – and a brief description of the preliminary outcome of ongoing policy reviews.
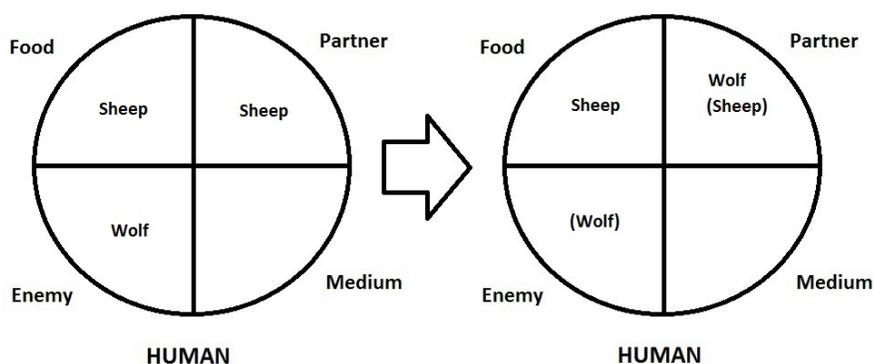
Figure 4. Umwelt transition in human relations to sheep and wolves.

Figure 4 depicts a summary of fairly recent changes in the way in which humans, more specifically Norwegians in contemporary times and the near past, relate to wolves and to sheep. While the wolf has become less of an enemy (though in the eyes of a substantial minority it remains an enemy) and has become a partner (as in social companion, perceptually conceived of in conceptual terms) to many contemporary Norwegians, the sheep, which has traditionally been both food and partner (as in social companion) is now becoming less of a partner, due to steadily increasing ratios of number of sheep to number of sheep farmers. As we see in Figure 5, this latter development points in the direction of a future in which humans might ultimately vanish altogether as Umwelt objects in the Umwelten of sheep.
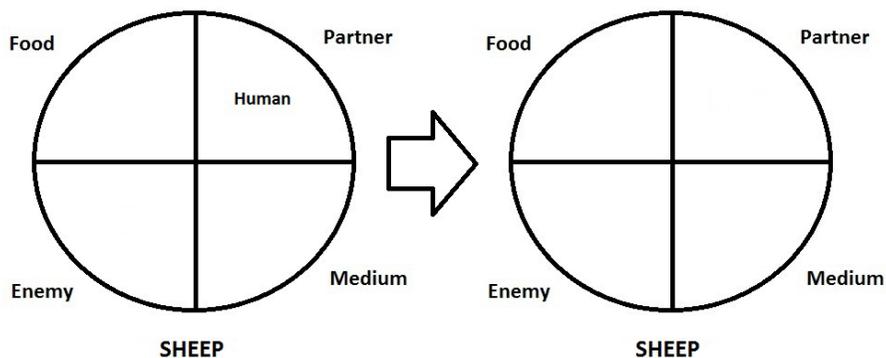
Figure 5. Umwelt transition in the relation of sheep and humans (overstated).

In conclusion of this subsection a few remarks are required on the preliminary outcome of ongoing policy reviews. As it happens policy reviews are currently being conducted in both Norway and Sweden. A brief summary:

Norway: The population target (three litters per year inside the "management area for breeding wolves"[43], popularly called the 'wolf zone') was reached for the first time in 2010. The 'predator settlement'[44] of June 2011, which garnered support from all parties in parliament, included a notable policy change in the provisions for self-defence[45] that now permits predators (including wolves) to be killed to protect dogs during direct attacks by predators.[46] Telling of the controversies of wolf politics, most of the policy review was in the case of the wolf postponed. The population target for wolves will be evaluated once desired negotiations with Sweden (awaiting the Swedish policy review) on the status of border wolves have concluded, at the latest in 2013. The wolf zone will be evaluated as well.

Sweden: The Swedish policy review commenced in 2009 and will during 2012 involve a broad evaluation of existing management measures including the new measures implemented in the period 2009–2012. Initially a population target was set to 210 individuals, and mass hunts with thousands of volunteer hunters were conducted during the winters 2009/2010 and 2010/2011. These were the first such hunts in Sweden since the wolf won status as protected species, and each hunt culled >10% of the current Swedish wolf population. Since these mass hunts began, the Swedish government has been in conflicted dialogue with EU authorities, which claim that Sweden may be in violation of the EU's Habitats Directive, which details the policy restraints concerning

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[43] 'Forvaltningsområde for ynglende ulv'.
[44] 'Rovviltforlik'.
[45] 'Nødvergerett'.
[46] The protection of livestock was already provisioned in the farmers' right to self-defence. The 'predator settlement' provisions, which protect dogs, have in effect extended the self-defence policies beyond farmers to apply to hunters as well.

protected species. The legality and legitimacy of wolf hunts sanctioned by Swedish law is thus questioned and under official review. In August 2011, the Swedish government announced that pending the EU's review, the licensed hunt planned for the winter 2011/2012 has been cancelled. During this period, substantially more 'protective hunts'[47] were announced to be temporally permissible whenever problematic individuals cause havoc. The population target introduced in 2009 was furthermore withdrawn, with no replacement. A decision on new population targets will be made in 2012. New management methods in the field include relocation of wolves, be it of troublemakers or genetically valuable individuals. Further plans are in development for introducing wolf pups born in zoo captivity into the wild by inserting them into litters of free-range wolves, with the purpose to counteract inbreeding.

4.1. Field research

Research for this case study was conducted at field trips to zoological gardens with captive wolves and to the Norwegian municipalities of Rendalen and Stor-Elvdal. Further research consists in an interview at Statistics Norway, an interview with wolf socialiser Runar Næss in Oslo and an interview at SKANDULV's annual research seminar in 2010 (which took place in Sweden). A total of approximately 16 interviews were collected.[48] The centrality of the municipality of Rendalen in particular in the context of the Norwegian wolf conflict (Stor-Elvdal is a neighbour municipality) is due to the fact that it is situated just outside the Norwegian wolf zone. More than half of all wolves that have been killed legally in contemporary times have been shot in Rendalen.

The following four zoological gardens were visited for this case study:

Kristiansand Zoo, Norway ($58^0$11' North, $8^0$08' East)
Visited May 15, 2009 (and more)
Home to captive wolves (not socialised)
Interviewee: **Olav Åsland**, zookeeper

Langedrag Mountain Farm and Wildlife Park, Norway ($60^0$26' North, $8^0$52' East)
Visited September 22–24, 2010
Home to captive wolves (both socialised and not socialised wolves)
Interviewees: **Frank André Soma**, zookeeper
                  Tuva Thorsen, general manager

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[47] "Skyddsjakt" (in singular).
[48] We write "approximately" because in a number of cases it is unclear whether more or less informal discussions are to be counted as interviews. The number 16 represents those interviews listed in this section by name of interviewee (with one married couple counted as one interview).

Polar Zoo, Norway (68^{0}41' North, 18^{0}06' East)
Visited March 8–11, 2010
Home to captive wolves (both socialised and not socialised wolves)
Interviewees: **Stig Sletten**, zookeeper
                   Frode Wærum, zookeeper

Tallinn Zoo, Estonia (59^{0}24' North, 24^{0}39' East)
Visited in 2009
Until recently, home to captive wolves
Interviewee: **Aleksei Turovski**, parasitologist and zoosemiotician

Figure 6 displays the location of the places we have visited in the course of the current case study work, including the four zoos, the Swedish SKANDULV seminar, Oslo and Rendalen/Stor-Elvdal.

Figure 6. Field trips – map of places visited.

The field trip to the municipalities of **Rendalen and Stor-Elvdal**, in the region of Hedmark in Central Norway, was conducted *October 28 – November 2, 2010.* Locations (villages) visited:
* Øvre Rendal/Berset (Rendalen) (61^{0}53' North, 11^{0}04' East)
* Åkrestrømmen (Rendalen) (61^{0}41' North, 11^{0}12' East)
* Koppang (Stor-Elvdal) (61^{0}34' North, 11^{0}03' East)
* Unset (Rendalen) (61^{0}57–58' North, 11^{0}05–06' East)

Interviewees: **Sigvald Akre**, head of Rendalen Renselskap (an association of landowners managing a population of semi-domesticated reindeer)

Halgrim Breie, head of section for planning and business in Rendalen municipality

Lars Gangås, state–licensed wolf hunter in Norwegian Nature Inspectorate (SNO), hunting leader for Southern Norway

Kjetil Granlund, sheep farmer, head of the NGO Hedmark Sau- og Geitalslag (Hedmark association of sheep and goat breeders)

Norvald Illevold, mayor of Rendalen municipality; member of Arbeiderpartiet (Labour party)

Gudrun and **Ole Karl Romenstad**, former sheep farmers; now running Romenstad Hytte- og Gardsferie (Romenstad cottage and farm holidays)

Håvard Haug, head of section for planning and business, Stor-Elvdal municipality

Additional interviews:

Terje Bø, head of Section for wildlife in Norwegian Directorate for Nature Management (DNO), interviewed at SKANDULV's annual research seminar 2010, held in Strömsberg, Sweden, *November 15–17, 2010*

Runar Næss, freelance wolf socialiser (Animal Zoolution), activist, interviewed in Oslo *October 11th 2010*

Espen Søbye, statistician at Statistics Norway, interviewed at the library of Statistics Norway, Oslo, *October 12th 2010*

Figures 7, 8 and 9 summarise some of the findings from Langedrag, Kristiansand Zoo and Polar Zoo respectively. Concerning Polar Zoo, see also Paper VII. The remaining interviews, especially those conducted in Rendalen and Stor-Elvdal, have been of crucial importance for the arguments featured in 4.5 *The symbolic construction of the Big Bad Wolf in contemporary Norway*, 6.2 *Umwelt futurology: Three Umwelt scenarios* and 6.3 *Future perspectives: Deep and shallow solutions*.

Figure 7. Waiting for wolves. From Langedrag Nature Park and Mountain Farm, more specifically the seating area inside the enclosure of the shy wolves. September 2010 (the day of the first snow that winter).

Figure 8. Feeding time. From Kristiansand Zoo, May 2010. At 1 p.m. every day in the tourist season, a zookeeper enters the enclosure of the wolves (which are all shy) and leaves pieces of meat dispersed in the terrain facing the vantage point on the footbridge. When the audience is numerous, there is no mutual gaze between wolf and the onlookers.

Figure 9. Life at Polar Zoo. March 2010. The wolves figuring in these four photographs are socialised. The woman depicted is one of the human companions they have bonded with at an early age. From top left: (1) Wolf with zookeeper in the Salang Valley (Salangsdalen), where the enclosure is located, (2) wolf lying by a typical vantage point on high ground, (3) in-pack fighting in the proximity of the highly trusted zookeeper (who never interferes – visibly, at any rate – in order to leave an entirely positive impression), (4) a peaceful moment.

4.2. The cultural semiotic of wolves and sheep

In this section we review the cultural semiotics of wolves and sheep, though the review is in this version far from comprehensive.

The noun *wolf* refers in its primary sense to various predatory carnivorous mammals of canid species of North America and Eurasia that usually hunt in packs. A narrower definition implies that 'wolf' refers only to *Canis lupus*, the grey wolf. The domestic dog (*Canis lupus familiaris*) and the semi-wild dingo (*Canis lupus dingo*) are at any rate excluded from the ordinary usage of the term 'wolf'. More ambiguous creatures in terms of wolfishness include the 'Ethiopian wolf' (*Canis simensis*), the 'Red wolf' (*Canis rufus*) and the coyote, also known as the 'Prairie wolf' (*Canis latrans*).

The word *wolf* appears in English, German, Dutch and Afrikaans. In Greek the word for wolf is transcribed as 'lykos' (as in λύκος), in Latin the word is 'lupus', in Spanish and Portuguese 'lobo', in French 'loup', in Italian 'lupo', in

Danish, Norwegian and in older Swedish 'ulv' (but in contemporary Swedish 'varg'), in Icelandic 'úlfur', in Serbocroatian 'vuk', in Slovenian (and Russian – as in волк) 'volk', in Czeck and Slovak 'vlk', in Polish 'wilk', in Latvian 'vilks', in Lithuanian 'vilkas' and in Estonian 'hunt', in Chinese transcribed as 'lang', in Japanese as 'ookami', in Arabic as 'theeb'.

A second meaning of the word wolf is, in the words of the Merriam-Webster Dictionary, "a man given to seducing women" – synonyms include 'Casanova' and 'womaniser', related words and phrases include 'ladies' man', 'seducer'', 'whoremaster' and 'whoremonger'. Wolves have symbolised *lust* for more than two thousand years.[49] In Roman slang, *lupa*, literally female wolf or she-wolf, meant 'whore', a connotation that is found even today in the Spanish *loba*, the Italian *lupa* and the French *louve*. In Anglo-Saxon culture 'wolf' was in ancient times equated with 'prostitute', or a "sexually voracious female", but later came to signify "sexually aggressive male". This latter use was first recorded in 1847 (Online Etymology Dictionary). In this context we should also recall that *bitch* (cf. the insult "son of a bitch") literally means female dog, or the female of other canines such as wolves and foxes.

A third meaning of the word wolf is, according to the same dictionary, "a person who habitually preys upon others" – synonyms include 'bloodsucker', 'shark', 'vampire' and 'vulture', related words include 'exploiter', 'destroyer' and 'devourer', the antonym is said to be 'prey'. The verb *to wolf*, which might be taken to mean "to eat like a wolf", is defined by Merriam-Webster Dictionary as "to swallow or eat greedily" – synonyms include 'devour', 'gulp', 'inhale', 'scoff' and 'slop'.

In Old Norse, *vargr* (cf. the Swedish *varg*) meant "outlaw", almost as in the Old English *wearg*, "criminal", "felon". It was also used in the sense of "murderer", "slayer" – a fact that complicates research aiming at deciding cause of death by reviewing Norse church books, since "killed by *vargr*" could mean either "killed by wolf" or "murdered". Varg Vikernes, the front musician of the Norwegian black metal band *Burzum*, explained on the band's homepage[50] that "the name Varg is not a name that I chose for fun". "Varg means wolf, thief, burglar, murderer […] a varg is a symbol for Man's bestiality" (*ibid.*). Vikernes was recently released from prison, after serving time for murdering a band colleague and setting churches on fire in the 1990s.[51] In Norse society, *varg* signified not only the particularly murderous "slayer wolf" that wrecked havoc on herds, but also a human outlaw, a person one would not be punished for killing.

Another term that due to its cultural impact must be mentioned in this subsection is that of the *werewolf*, also known as a 'lycanthrope' (from the

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[49] Speaking of canines, consider also the 'vixen', the female fox – in cultural imagery another sexual predator, as it were. Cf. further the connotations of 'foxy'.

[50] Www.burzum.com, my translation.

[51] Note that he has now changed his name to abandon the 'Varg' name, apparently in order to avoid being associated with murder and his past (?) engagement with Satanism and Neo-Nazism.

Greek 'lykos', "wolf" and 'anthropos', "man"). The English 'werewolf' might derive from the Old English *wer* or *were* (man, human of the male form) and *wulf* (wolf, beast). An alternative explanation is that it derives from the Old English *warg* (as in Old Norse *vargr*) and *wulf*.

SUBTLEXus, developed by Brysbaert and New (2009), is a corpus of American English drawn from the subtitles (legends) of 8,388 films, totalling some 51 million words. The word 'wolf' appears 1,034 times, in 376 of the films. While the word frequency is not all that high, the word appears in no less than 4.5 % of the films included in the corpus. This compares with mentions of the word 'animal' in 16.4 % of the films, 'cat' in 16.5 %, 'dog' in 36.4 % and 'man' in 96.0 % of the films. Interestingly, the word frequency of 'wolf' and 'sheep' are approximately similarly high. Less frequent forms and derivations include 'wolves' (179 films, 2.1 %), 'werewolf' (55 films, 0.7 %), 'wolfman' (11 movies, 0.1 %), 'wolfing', 'wolfed' and 'wolfish'.

Another major source for matters of word frequency is the 400 million word Corpus of Contemporary American English, created by Mark Davies of Brigham Young University. This collection of texts is drawn from the period 1900–2010 and is arranged into genres (spoken, fiction, popular magazine, newspaper, academic) in which each genre is represented by samples of approximately 80 million words, as well as into subgenres. Here more than half of the occurrences of 'wolf' are found in the genre of *fiction*. A fair amount occurs in the genre of popular magazines. The word appears much less frequently in academic texts and spoken language (which is mainly represented by television programmes). 'Wolf' occurs in 38 of the 43 subgenres and is found in each of the subgenres within fiction, popular magazine and newspaper genre categories. In magazines, the frequency is highest in those related to sports and 'women/men'. In fiction the word is prevalent in subgenres such as 'books', 'science fiction/fantasy' and 'movies', but rarer in juvenile fiction. The word 'wolfman', which is also listed, occurs predominantly in fiction (subgenre 'science fiction/fantasy') and newspapers (subgenre 'life').

When 'the laser man'[52], a sniper who had shot at immigrants in Malmö, Sweden, and killed an ethnic Swede who had an immigrant boyfriend – was caught, newspapers reported that he was "a quiet and lonely wolf" (my translation – *Dagbladet* November 7, 2010). This designation was based on the statement of a neighbour. The term *lone wolf* is well known in Western culture, and is quite often associated with similar acts of contemporary terrorism. More generally it refers to an introvert, perhaps secretive person who is unusually independent or asocial. When the 'Norway attacks' occurred on July 22, 2011, killing 77, both Norwegian and international media referred to the anti-Muslim terrorist as a lone wolf. *Time magazine*, for example, wrote about "The worrying rise of the lone-wolf terrorist" (*Time*, July 28, 2011, story by William Boston).

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[52] Translation of 'lasermannen', a nickname he attained in Scandinavian media.

Other expressions include being *hungry as a wolf* (a simile in which the wolf is equated with the phenomenon of hunger, especially extreme hunger, bordering on starvation), to be *thrown to the wolves*, to *keep the wolf away from the door*, to be *dancing with wolves*, and to be a *wolf in sheep's clothing*, an idiom of Biblical origin. To be a wolf in sheep's clothing means to have a superficial appearance that is different than one's true identity, a person not to be trusted. A *wolfpack* has acquired the modern meaning of a group of cars travelling together in close proximity to each other. The Danish expression "(her er det) ugler i mosen", literally "(here there are) owls in the bog", which signifies something akin to danger, something suspicious, or "Something's not right here", is a distortion of an original expression, 'uller i mosen' (or 'ulver i mosen'), meaning 'wolves in the bog' in a Danish dialect.

In Norwegian, 'ulvegrå', literally 'wolf-grey' refers to a shade of grey associated with the fur of many wolves (it is described as a "light greyish yellow", according to *Bokmålsordboka* – our translation). Further, in Norwegian, *ulvetid*, literally "time of the wolf" or "wolf-era", signifies a brutal period with no peace (*ibid.*), a period "when everyone is in combat or competition with each other" (The Language Council of Norway – our translation). The origin of the word goes back to Voluspå, a poem in the *Poetic Edda*, which deals with Ragnarok, the Norse version of the end of times. 'Ulvetid' is also applied to periods in which the wolf is numerous and intrusive; cf. also 'ulveår', literally "wolf-year", a year so to speak in the sign of the wolf (i.e., a year characterised by brutal hardship).

As we see, a majority of expressions making reference to the wolf are implicitly morally condemning or otherwise portrays the wolf in bleak terms. The wolf is an animal associated with violence, plotting, unruly hunger, and loneliness. This infamous animal is made mention of in proverbs in various languages, including variations of "speak of the devil (and the devil appears)": *Про волка речь, а волк навстречь* ("Speak about the wolf, and meet the wolf"; Russian proverb), *Quand on parle du loup, on en voit la queue* ("When we speak of the wolf, we see his tail"; French proverb). The *wolf-whistle*, a two-toned sound that might or might not be made by 'wolf-whistling', i.e. inserting two fingers into the mouth in order to produce a loud and penetrating tone, is one of the examples that do not fit with this picture. Being used to approach, to compliment, or possibly mock a sexually attractive person, the wolf-whistle belongs instead to the category of sexual connotations.

People whose names draw on the wolf include the aforementioned musician and convicted murderer Varg Vikernes, the Kiowa chief Lone Wolf, the Cheyenne war leader Little Wolf, the Cheyenne chief Wolf Robe, the authors Thomas Wolfe (1900–1938) and Virginia Woolf (1882–1941), posthumanist Cary Wolfe, Stephen Wolfram, the creator of the search engine Wolfram|Alpha, and Adolf Hitler (1889–1945). *Adolf* (cf. the English 'Adolph', the Italian and Spanish 'Adolfo' etc.) derives from the Old High German 'Athalwolf', composed of 'athal' or 'adal' ('noble') and 'wolf', and means "noble wolf". Other (in)famous persons named Adolf include the king Adolf of Nassau

(1255–1298) and various kings of Sweden, a number of European dukes and princes, three saints (Spanish, German and Ugandan), Holocaust organiser Adolf Eichmann (1906–1962) and philosophical anthropologist Adolf Portmann (1897–1982).

Given names meaning wolf includes the Hungarian 'Farkas', the Hebrew 'Ze`ev' and 'Zev', and the Scandinavian 'Ulf' (as in Ulf Lundell, the Swedish singer) and related composite names including 'Ulfbjörn' (literally "Wolf-bear"). Ulf derives from the Old Norse 'Úlfr', which was probably much more common in ancient times than Ulf is today, as evidenced by runic inscriptions. Variations included 'Olf' and 'Ulv'. Currently around one in one thousand Norwegian males are named Ulf, and more than one in one hundred Swedish males. The Serbian (and Croatian) 'Vuk' (as in Vuc Drašković, the Serbian politician), the short form of 'Vukasin' ('wolf'), is common. As far as we know these are all male names – but note that Vuk comes in many variations, both masculine ('Vuki', 'Vukota', 'Vuksan' etc.) and feminine ('Vukica', 'Vuka', 'Vukava', 'Vukana', 'Vukmila', 'Vukmira', 'Vukna', 'Vukoslava', 'Vukostana' and a number of others), and that composite forms of the Old Norse -*úlfr* appear to have included some feminine versions. 'Wolf' as well is used as a given name, as in the name of American journalist Wolf Blitzer.

Another common given name is *Wolfgang*, as in Wolfgang Amadeus Mozart, or Wolfgang Wolf, a German coach and former football player. Wolf-gang is derived from Old High German 'wulf' and 'gang', meaning "path". Further given names for males derived from the word 'wolf' in combination with some other word are 'Alf' (pet form of Adolf), 'Bertolf' and 'Bertulf', 'Ingolf', 'Ralf' and 'Ralph' ("wise wolf"), 'Randal' and 'Randall', 'Randolph', 'Raul' and 'Raúl' ("wise wolf"), 'Rolf' and 'Rudolph' (cf. 'Rudolf' etc., and pet forms including 'Rudi' and 'Rudy' – "famous wolf"), and 'Ulrick' ("wolf power"). Further female forms include the Basque 'Otsana' and the Scandi-navian 'Ylva' (both meaning "she-wolf"), the Swedish 'Ulva' and the English 'Ralphina'.

In the United States, the surname 'Wolf' appears to be used dominantly by those of European and Native American descent, and only exceptionally by those of African or Asian descent. Other surnames in use internationally include the Scottish 'Lyall' ("shield wolf"), the English 'Lovell/Lowell' ("little wolf"), the Romanian 'Lupescu', and variations such as 'Wolff', 'Wolfman', 'Wolfs-berger', 'Wulf', 'Wulff' (as in Christian Wulff, the president of Germany), 'Wülf' and 'Wülff'. Native American surnames include 'Lonewolf', 'Spotted-Wolf', 'Wolf Woman' and 'Wolf Child'.

There are a number of place names derived from the word 'wolf'. These include municipalities in the United States named 'Wolf', the municipality of 'Wolverhampton' in England, the Croatian city 'Vukovar' and villages 'Vuko-jevac' and 'Vucomerić', and the Croatian river 'Vuka'. Further, a volcano in the Galápagos Islands has been named 'Wolf', as have a crater on the moon, and six stars (Wolf 359 in the constellation of Leo, etc.). These seven celestial objects have been named after astronomer Max Wolf.

Wolverhampton in England is the home of Wolverhampton Wanderers Football Club, nicknamed 'Wolves' or 'The Wolf Pack' and currently playing in the Premier League. Other wolfish sport teams include the Italian football club Roma and the Portuguese national rugby team, both of which are nick-named "the wolves" ('i lupi' and 'os lobos' respectively). A number of ships of the British Royal Navy are named HMS Wolf, and in the United States there are radio channels with names such as WOLF (AM) and WOLF-FM, and a television station called WOLF-TV – not to forget a company named Great Wolf Resorts which specialises on indoor waterparks.

During the Second World War, 'Werwolf' signified a Nazi plan designed by Joseph Goebbels from 1944 and gone public by March 1945. Guerrillas recruited from SS and Hitlerjugend were supposed to conduct combat behind enemy lines as the allies advanced on German ground. Fears of a Nazi insurgency surfaced and survived the actual end of the war, but the propaganda overshadowed the plan's actual realisation. Operation Werwolf has been depicted quite vividly in a number of fictional genres – it appears for instance in Lars von Trier's 1991 film *Europa* and in the second episode of the third season of the contemporary television series *True Blood*.

Occasionally names of various sorts are given to actual wolves as well. Some, such as *The Beast of Gévaudan* (in French: 'La Bête du Gévaudan'), are infamous man-eaters – this particular beast caused havoc in 1764–1767. It is not entirely certain, however, that it was in fact a wolf (or indeed but one animal). In contemporary Scandinavia, a wolf that migrated from the East was nicknamed *Ivan* by Norwegian media. Ivan was soon found dead, a victim of poaching. Other Scandinavian wolves in the wild are typically named according to what wolf pack they belong to, which is in turn named after the geographical area they inhabit. 'The Galven bitch', for instance, is the alpha female of a pack which inhabited the area of Galven. Free-range wolves in Scandinavia are further given numerical names which place them in hereditary terms. In zoo-logical gardens, individual naming is the rule. At Polar Zoo, the northernmost zoo on the planet, the six wolves as of spring 2010 were called 'Gaida' (female), 'Nanook' (male), 'Steinulv' (male), 'Nayla', 'Ylva' and 'Luna' (females).

The mythical founders of the city of Rome, Romulus and Remus, had according to tradition been suckled by a wolf before they were found by a shepherd. The legendary cave of the she-wolf was according to media reports uncovered by archaeologists in 2007, in proximity to the palace of Emperor Augustus. In ancient Rome this cave was a place of worship. Here, then, we face a narrative in which a wolf saves the lives of two children who would later grow to be great men. It is also noteworthy in our context that the two twins were later retrieved by a shepherd, a caretaker of sheep – and brought up to become shepherds themselves. The historical basis of Rome's foundation myth remains disputed. In one tradition, the she-wolf Lupa or Luperca is a wolf-goddess, who was subject to cult practices and was believed to protect sheep from wolves. The festival Lupercalia, or "wolf festival", was celebrated near the

cave of Lupercal. The religious ceremonies were headed by 'the Luperci' ("the brothers of the wolf"), an order of priests dressed in goatskins, and involved the sacrifice of goats and dogs. Figures of the myth foundation are depicted in ancient Roman iconography, including on coins.

In Norse mythology, Fenrisúlfr, or Fenrir, is the name of a wolf, a son of Loki (by birth a gargantuan troll of sorts, later a god and certainly a trickster – a shape-shifter for sure). The name might be derived from "wolf of hell", influenced by Christian conceptions of the devil as *lupus infernus*. Great malice was expected from Fenrir. He is foretold to kill the god Odin during Ragnarok, the Norse end of times, and one of Fenrir's sons would swallow the sun and another the moon. Fenrir appears in both the *Poetic Edda* and the *Prose Edda*, the latter composed by Snorri Sturluson (1178/79–1241). In the Prose Edda we are told that the gods, because of the prophecies, bound Fenrisúlfr, and that he bit off the god Týr's hand, which had been placed in his mouth as a sign of good faith. It must be mentioned that Fenrisúlfr grew abnormally. Much of this is described in the book *Gylfaginning*. After the sun and the moon were swallowed by the wolf's sons, the earth would shake violently, mountains would fall, and Fenrisúlfr would be free and go into the open with his mouth opened wide, with his jaws touching the sky and the earth. Soon an immense battle would take place in which Fenrisúlfr would swallow Odin, who would have come to fight him, only to be slain by his son.

In the works of William Shakespeare, the word 'wolf' appears in no less than 20 of his plays, plus in one of his sonnets, Sonnet 96. In the latter text Shakespeare's use of the image of the wolf is conventional, but with a twist: "How many lambs might the stem wolf betray, / If like a lamb he could his looks translate!" In these lines, the familiar notion of a wolf in sheep's clothing is presented as deceitful mimicry, as always, but here, notably, as a phenomenon of translation. Translation, then, is potential betrayal. In many cases Shakespeare's mention of the wolf is conventional and apparently motivated by a wish to make a stark contrast. The wolf is characterised as warlike (*Cymbeline*), howling (*Macbeth*, *A Midsummer Night's Dream*), grinning (*Venus and Adonis*), and greedy (*King Lear*, plus this appearance in *Timon of Athens*): "[I]f thou wert the ass, thy dulness would torment thee, and still thou livedst but as a breakfast to the wolf: if thou wert the wolf, thy greediness would afflict thee, and oft thou shouldst hazard thy life for thy dinner […]".

First of all the wolf is hungry, indeed ravenous (driven by hunger). It is the iconic predator (*The Rape of Lucrece*, *Venus and Adonis*, and this appearance in *Twelfth Night*): "If one should be a prey, how much the better / To fall before the lion than the wolf!" In *Macbeth* we hear about the tooth of a wolf used as an ingredient in a witch's brew, and in Part III of *King Henry VI* we are told about the poisonous tongue of the She-wolf of France. The wolf is embodied hunger – predatory hunger – pure hunger.

We now return to wolf imagery in religious texts. *Epistle to the Son of the Wolf*, the last major work of the founder of the Bahá'í faith, Bahá'u'lláh, is a letter written in around 1891 to a Muslim cleric, the son of another cleric, Áqá

Najafí whom Bahá'ulláh nicknamed "the wolf" due to his persecution of Bahá'ís. Wolves play quite a different role in Norse mythology, where the god Odin was said to be accompanied by two wolves, named 'Geri' and 'Freki', though both of these names derive somehow from "greedy". The two wolves appear in the *Poetic Edda*, where they are fed by Odin at the table, as well as in Snorre Sturlason's *Prose Edda*. As wolf-warriors – and icons of a warrior culture – the two embody fierceness in a positive sense, and might. In the poem *Voluspá* in the *Poetic Edda* we meet the monstrous wolf Fenrir, as mentioned previously, who is being fed by Odin's flesh during Ragnarok. There are parallels to part of this wolf imagery in other pagan religions, including ancient Greek and Germanic beliefs (for instance, wolves were sacred to the Greek Apollo).

In the Quran the wolf is mentioned in a few passages, in the form of a possible danger, a devourer whose presence means that people have to be looked after. The imagery of the Bible is more powerful, and has certainly been influential in shaping Western perceptions of the wolf, especially when contrasted with the Bible's treatment of sheep and lambs (all quotes in the following are, unless otherwise noted, from the New International Version, 2010). The references are not many, but more than one of them is of great symbolic significance. The above-mentioned phrase *wolf in sheep's clothing* originates from the Gospel of Matthew, 7:15, where Jesus is recorded as having said in a sermon: "Beware of false prophets, which come to you in sheep's clothing, but inwardly they are ravening wolves" (King James Version). In Genesis 49:27 a man is likened to a 'ravenous wolf', and in Jeremiah 5:6 "a wolf from the desert" stands ready to "ravage" along with lions and leopards. In John 10:11–16, where Jesus presents himself as the good shepherd, the wolf is again juxtaposed with sheep.

> I am the good shepherd. The good shepherd lays down his life for the sheep. The hired hand is not the shepherd and does not own the sheep. So when he sees the wolf coming, he abandons the sheep and runs away. Then the wolf attacks the flock and scatters it. The man runs away because he is a hired hand and cares nothing for the sheep.

> I am the good shepherd; I know my sheep and my sheep know me – just as the Father knows me and I know the Father – and I lay down my life for the sheep. I have other sheep that are not of this sheep pen. I must bring them also. They too will listen to my voice, and there shall be one flock and one shepherd.

In the book of Isaiah, there are two passages where mention of the wolf is made to portray paradise – heaven. In these passages the image of the wolf as a predator and enemy of sheep is drawn on to convey the promised change of relations – enemies will become peaceful neighbours, the weak will become strong, etc. In Isaiah 11, "The branch from Jesse", we are told that the wicked will be slain, and Judah's enemies will be destroyed. Mixed with these violent images, however, there is a measure of heavenly peace (Isaiah 11:6–9):

> **The wolf will live with the lamb**,
> the leopard will lie down with the goat,
> the calf and the lion and the yearling together;
> and a little child will lead them.
> The cow will feed with the bear,
> their young will lie down together,
> and the lion will eat straw like the ox.
> The infant will play near the cobra's den,
> the young child will put its hand into the viper's nest.
> They will neither harm nor destroy
> on all my holy mountain,
> for the earth will be filled with the knowledge of the LORD
> as the waters cover the sea.

Isaiah 65:17–25, "New heavens and a new earth", offers a similar image, in partial repetition of Isaiah 11.

> "See, I will create
> new heavens and a new earth.
> […]
> I will rejoice over Jerusalem
> and take delight in my people;
> the sound of weeping and of crying
> will be heard in it no more.
> […]
> **The wolf and the lamb will feed together**,
> and the lion will eat straw like the ox,
> and dust will be the serpent's food.
> They will neither harm nor destroy
> on all my holy mountain,"
> says the LORD.

Thus far we have treated wolves. As mentioned, sheep figure even more significantly in religious imagery, especially in the Christian tradition. Both the adult sheep and the lamb play a decisive role in Christian imagery. In the already quoted John 10:11, where Jesus presents himself as *the good shepherd*, he later walks in the temple courts of Jerusalem during the Hanukkah festival, and is challenged to speak plainly about whether or not he is the Messiah (John 10:25–28).

> Jesus answered, "I did tell you, but you do not believe. The works I do in my Father's name testify about me, but you do not believe because you are not my sheep. My sheep listen to my voice; I know them, and they follow me. I give them eternal life, and they shall never perish; no one will snatch them out of my hand."

In the Christian context, Jesus is not only likened to a shepherd, but also to a lamb. The Latin term *Agnus Dei*, lamb of God, refers to Jesus Christ in his role

as a global paschal lamb, offering – sacrificing – himself for the sake of humanity. In Christian iconography, Jesus is sometimes depicted as a lamb – occasionally as a *bleeding* lamb. In English-speaking liturgy, there are several variations over a theme such as this one: "Lamb of God, you take away the sin of the world, have mercy on us".

To return to the image of the shepherd, "The parable of the lost sheep" (Luke 15:1–7) stands out as an emblematic story.

> Now the tax collectors and sinners were all gathering around to hear Jesus. But the Pharisees and the teachers of the law muttered, "This man welcomes sinners and eats with them." Then Jesus told them this parable: "Suppose one of you has a hundred sheep and loses one of them. Doesn't he leave the ninety-nine in the open country and go after the lost sheep until he finds it? And when he finds it, he joyfully puts it on his shoulders and goes home. Then he calls his friends and neighbors together and says, 'Rejoice with me; I have found my lost sheep.' I tell you that in the same way there will be more rejoicing in heaven over one sinner who repents than over ninety-nine righteous persons who do not need to repent.

Here, as we see, a 'lost sheep' is likened to a sinner. In Matthew 31–46, a decisive distinction is made between sheep and goats in a discourse by Jesus. This time around, according to the mainstream interpretation, the sheep represent the blessed, those who will inherit heaven, whereas the goats represent the cursed, those who will not.

> But when the Son of Man comes in his glory, and all the holy angels with him, then he will sit on the throne of his glory. Before him all the nations will be gathered, and he will separate them one from another, as a shepherd separates the sheep from the goats. He will set the sheep on his right hand, but the goats on the left. Then the King will tell those on his right hand, "Come, blessed of my Father, inherit the Kingdom prepared for you from the foundation of the world" […] Then he will say also to those on the left hand, "Depart from me, you cursed, into the eternal fire which is prepared for the devil and his angels" […] These will go away into eternal punishment, but the righteous into eternal life.

Figure 10 shows six stuffed (as in mounted) wolves, yet another matter of the cultural semiotic of wolves and sheep.

Figure 10. Six stuffed (mounted) wolves in Norway. From top left: (1) The mounted wolf in the public library in Koppang, central Stor-Elvdal, (2) the stuffed wolf in the reception area of the municipal building of Rendalen, where there is also a stuffed lynx and a stuffed wolverine, (3) the two stuffed wolves at Langedrag Nature Park and Mountain Farm and (4) the two mounted wolves in the café of Polar Zoo. Each of these wolves has a unique life story. The wolf in (1) was badly injured after it was hit by a train. The library wanted to present the stuffed wolf preying on a sheep, but was not allowed to. Besides, its jaw had been dislocated in the traffic accident, making such a display practically difficult. The wolves in (4) are the ones mentioned in Article VII's final footnote: "One of them was the first to escape its enclosure in the zoo. It did not get far."

4.3. Remarks on Næss' philosophy of wolf management

I have great respect for the work of Arne Næss (cf. Tønnessen 2003, an article devoted to interpretation of the Deep Ecology platform within an Uexküllian framework). But in his suggestions for wolf policies, it becomes evident that he had trouble, at least in this particular case, with translating fundamental norms into workable operational principles. Næss' 1974 article "Self-realization in mixed communities of humans, bears, sheep, and wolves" says little about wolves, and his emphasis is on pointing out that their cultural setting is very different from that of bears: "There is a great *respect* for bears, whereas wolves are more dreaded than respected" (*ibid.*, 239). Part of the difficulty is that Næss, in the very same article, argues that value attribution can be based on the

common considerations of laypeople (the general public). Such value attribution may work for the well-respected bear, but not so well for the traditionally demonised wolf. What status is the wolf to have if the sole criteria for attributing moral status are the culturally problematic judgements of the locals in any given community?

Næss' positive contribution in his 1974 article is his principled discussion of 'mixed communities' of humans and animals, and the general, egalitarian norms/maxims of self-realisation, self-determination, etc. In Næss and Mysterud (1999 [1987]), the predation of wolves on sheep is dealt with in some detail. The only norms that are treated extensively, however, concern individual suffering. The authors attempt to do away with numerical considerations by introducing norms such as: "Severe suffering endured by a living being x is of no less negative value than severe suffering endured by a living being y, whatever the species or population of x and y!" (345). Additional norms are introduced to stress that population numbers are not significant. But how do we compare the torment of hundreds of sheep in the moments preceding wolf predation, and the distress of thousands of survivors – on top of the partly irrational fear of tens and hundreds of thousands of people – with the joys and sorrows of a few wolves? Though population numbers alone cannot lead us to significant conclusions in the case of wolf conservation, despite what some antagonists populistically suggest, they are clearly relevant when we examine the true extent of suffering etc.[53]

In the case of wolf predation on sheep, Næss and Mysterud suggested a compensation scheme (such a scheme is in effect today). But if the coexistence of wolves and sheep farmers causes insoluble problems, we are told that "territorial changes must be considered: the removal of wolf or sheep or farmers" (*ibid.*, 352). Will the mixed community turn out to be but an unrealisable Utopia? Ecological segregation may work in Norway, a sparsely populated country, but in the more densely *inhabited* parts of the world such strategies are hardly viable: Mixed communities are a prerequisite. Ironically, by choosing wolves and sheep as their study animals (as have I in this case study), Næss and Mysterud in effect reproduce erroneous popular perceptions that give exaggerated weight to sheep in the human perception of wolf ecology

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[53] Emphasising population numbers tends to favour farmers whose stocks of domesticated animals by far outnumber large carnivores. But the direct comparison is absurd. If taken seriously as a dominant guideline for ethical reasoning, it would imply that no species with comparatively few specimens would have any chances for continued existence. Given that all large wild animals are comparatively few in number in comparison to the populations sustained by livestock practices (see Paper V), employing this principle would cause conservation efforts to come to a halt, as far as any large (and therefore comparably rare) wild animal is concerned. The direct comparison is absurd for at least two reasons: Firstly because there is no resource base for any competing number of large wild animals, and secondly because the argument implies that the fewer in number an endangered species is the less importance it should be given. Common conservationist logic would say the reverse – that the fewer in number an endangered species is, the more importance it should be given, so as to safeguard its continued existence.

(see Paper VI), and exaggerated weight to wolves in the perception of sheep ecology. Why base conservation policies on such misleading terms?

In conclusion, Arne Næss did not provide a solution to the (perceived) problem of wolf conservation in Scandinavia. But he was clear in his value statements. And he and Mysterud were totally right in observing that "unfortunately, experts and researchers have a tendency to avoid norms and values at a fundamental level" (*ibid.*, 346). To make such value statements today, we repeat, "is a social obligation" (*ibid.*, 347).

4.4. On invasive management of shy animals

The current situation of the Scandinavian wolf involves a strange paradox: The future of the wolf, a master of seclusion, apparently depends on its being managed by conservationists to an extent that makes the very notion of "wild wolves" appear dubious. The wolves, of course, are not always aware of what is being done for their sake, and when they do encounter wildlife managers the encounter is as a rule an unpleasant one. Indeed, the encounter with humans is not *supposed* to be a pleasant experience for a wild animal such as the wolf. Whereas a wolf's life might actually be saved by conservationist intervention through the use of helicopters and tranquilisers, with the aim of medical/surgical treatment, for instance, what the wounded or sick animal experiences is rather that it is hunted, captured, and forcefully incapacitated.

Even more telling than these modern fairytales of wildness is the fact that with widespread use of modern technologies such as radio-collars, the wolf is no longer the one in the human-wolf relationship that has the best overview of the whereabouts of the other. That used to be the normal position of the wolf – consider Næss' dated statement (1974: 239) that wolves "are rarely seen and very careful to stay out of trouble. There is therefore a reasonable chance that the life communities comprising a (fairly small) number of wolves will persist". In the case of non-radiocollared wolves, however, the wolf may still have the best overview. One might be tempted to state that the wolves of Scandinavia are actually no longer wild, but that this, alas, is kept secret from the wolf. For all the wolf knows, it is still a wild animal – and it still *behaves* like one. But are we justified in claiming that a (more or less) free-ranging wolf is truly wild, simply because it does not *know* that it is being thoroughly managed?

The topic of wildness is a matter of ongoing debate in the wildlife management community (cf. also our treatment at the end of Paper VI). In the scope of this section we will relate it solely to questions of shyness and actual human interference (especially on the management side). In terms of being shy and fearful, the wolves on the Scandinavian Peninsula clearly qualify for the term 'wild' – they have retained their fear of people. The degree of human interference, however – including the fact that these wolves are familiar with several human artefacts and constructions, and that they are dependent on wildlife

management – seems to suggest that shyness is not a sufficient criteria for wildness.

Two studies have been conducted to investigate Scandinavian radio-collared wolves' tolerance of the presence of humans, by Wam (2003) and Karlsson *et al*. (2007). Wam found that 123 out of 125 trials with five wolves resulted in the wolf running away immediately, and concluded that these wolves were shy animals, showing no sign of habituation (Karlsson *et al*. reached a similar conclusion). "Instinctively a wolf in Scandinavia today knows it should avoid approaching persons," notes Wam (*ibid.*, 28), alluding to the evolutionary law of the *survival of the shyest* (our coinage). The bed site preference of the wolves indicates their ability to learn. Prior to being disturbed, the wolves used overlooking sites high in the terrain, while after being disturbed they typically sought secluded sites. Wam estimates the chance of a hiker being confronted by a wolf in Scandinavia as practically nil. This assertion is reinforced by an independent finding that only a tiny minority of dog owners whose dogs were attacked by wolves saw any sign of the wolves prior to the attacks (Backeryd 2007: 11).

The local specimen of the human species no doubt influence Scandinavian wolf ecology at many levels, ranging from constitution of the prey base to habitat preferences and movement patterns. In this subsection, however, we will point to a connection which comes into particularly sharp focus: Wolf mortality is indubitably dominated by human causation. The first wolf in the modern population to die of old age was a 14-year old alpha female found dead in the winter of 2002–2003. Her death is reported by Olsen 2003, who observed that mortality was high even before the fairly recent leap in mortality. Her survey encompassed 84 retrieved dead wolves, 18 of which were radio-collared. Only roughly one out of five of the wolves died of natural causes. Vehicle trauma (wolves hit by cars or trains) was the single most frequent cause of death, causing more than one out of four deaths. From another point of view *shooting* appears as the cause of more than half of all deaths. These include wolves hunted legally, including those shot to protect livestock, and wolves hunted illegally. According to Olsen's calculations of the 81 wolves with known causes of death 51% "were probably shot to death". The figure, however, is higher – since Olsen did not include the four wolves whose death was categorised under disease/anomalies, which were shot to death because of their bad condition, nor the juvenile female that was shot after being observed with a serious injury on a hind leg. As a matter of fact, 57% were shot to death. Counting these, the proportion *effectively* dead from human-related causes is not 82%, as Olsen reports, but 87%. Management-related deaths alone account for more than two out of five deaths included in the study.

A more recent survey of wolf mortality (Liberg *et al*. 2008) similarly estimates that natural causes of death account for around a fifth of overall mortality. Here, illegal hunting is estimated to account for half of the chance a wolf has of dying in each year (i.e., half of the mortality rate). If that assessment is correct, an estimated 136 wolves (± 56) were killed illegally 1999–2006.

Further evidence of illegal hunting is reflected in the fact that three of the wolves killed in traffic in Olsen's survey had old bullet wounds. Liberg *et al.* report 11 similar cases among retrieved dead wolves. The very latest survey of wolf mortality in Scandinavia, Liberg *et al.* 2011, reiterates that poaching accounts for approximately half of total mortality, and introduces new methods for estimating 'cryptic poaching', which the authors define as poaching not detected by conventional methods.

In a multi-use landscape, even shy wolves inevitably come in contact with human artefacts and constructions – though these objects might have a very different significance for the wolves (if any), and might not be associated with humans. In general Scandinavian wolves tend to avoid areas with human activity. In winter roads and railways provide useful paths that save wolves from the efforts of hiking in heavy snow (hence the high occurrence of vehicle trauma). In addition to cars, trains, snowmobiles, bullets, etc., wolves might encounter even more products of civilisation as a direct result of management policies. In Scandinavia these include helicopters, various electronic installations making use of light or sound (e.g., radios with timers) in order to scare wolves, labels and instruments and radio-collars weighing up to a kilogram (Arnemo and Fahlman 2007: 7), as well as medication, including sedatives and penicillin, that are routinely used during surgery in the field. Before a legal hunt is licensed, attempts are made to protect livestock with various physical obstacles, or to scare the preying wolf with shots, shouts, throwing of stones, etc.

Nine of the ten wolves in Olsen's study that were shot to death to protect livestock were shot by licensed state game wardens from helicopters, all in Norway. Helicopters are also used when wolves are darted and chemically immobilised as part of captures in which tissue samples, hair samples, faeces, EDTA blood, and serum are collected. During captures, wolves are often partially awake. "Animals that have been captured before (especially wolves)," note Arnemo and Fahlman (*ibid.*, 6), "will usually run for cover when they hear the helicopter". During the last two decades, far more than 2,000 captures of free-ranging brown bears, wolves, wolverines, and lynx have been carried out in Scandinavia. SKANDULV started capturing wolves only in 1998, but had after five years captured 52 wolves, 16 of which had been immobilised two or three times (Olsen, *ibid.*, 17).

As Figure 11 shows, even socialised wolves, which have been habituated to the apparently entirely positive presence of humans, retain a certain shyness.

Figure 11. Secluded overview. Socialised wolf at the Polar Zoo, March 2010.

4.5. The symbolic construction of the Big Bad Wolf in contemporary Norway

As we write in Paper VII (p. 318):

> Current carnivore management would not have met such hostile resistance on the countryside, had it not been for some other facts […] Since 1999, one third of all farms in Norway have closed down […] In reality, the wolves are not blamed for the sheep they kill – they have come to symbolize the threats, dangers and decline facing Norwegian agriculture. The wolf, in short, has become a scapegoat.

We have seen in 4.2 *The cultural semiotic of wolves and sheep* how wolves and sheep have historically often been juxtaposed, especially in the context of the Bible. In cultural terms, hardly any animals are as loaded with symbolic value as the wolf and the sheep. And the shared importance is no coincidence, since the symbolism of the two animals has frequently developed in explicit opposition to each other. In the Scandinavian context and in the Norwegian context in particular, the wolf's vivid symbolicity in current times is enforced by the occurrence of conspiracy theories (cf. our retelling of the widespread conviction that Scandinavian wolves have been secretly and purposefully

reintroduced in Paper VI p. 292). Many of the fiercest opponents of wolf conservation believe that researchers and the authorities intentionally misrepresent the population number of wolves, and distrust official reassurances that the wolf does not pose much danger to people. In result, the human perception of wolves has in large measure decoupled from ecological reality.[54]

And this decoupling of perception and empirical circumstances does not only apply to conspiracy theorists. Whenever national Norwegian media cover predation on sheep, for instance, the wolf is typically pictured for illustrative purposes – despite the fact that wolverines, lynx, and brown bears all account for a much greater percentage of predation on sheep. The wolf has become a poster boy for large predators in general. What wolves are taken to signify depends not so much on actual wolf ecology as it does on certain cultural/ societal developments. These are, justly or unfairly, associated with the presence of wolves, and with governmental conservation policies. For many rural dwellers, as we write in Paper VII (p. 316), wolf management has come to symbolise the (alleged) ignorant hostility and imperialistic (as in unjustly intervening) tendencies of the urban elites.

The sheep's symbolicity is, in the Norwegian context, grounded in open landscapes, which are typically taken to be intrinsically Norwegian. The idea of the Norwegian nation is built on the memory of an initial clearing and cultivation of the original (pre-Norwegian) landscape. We see this plainly in the two first verses of Ivar Aasen's "The Norwegian"[55], which is in effect treated as a national anthem (our translation, in literal form).

> Between hills and mountains out by the sea
> the Norwegian has been given his home,
> where he himself has dug the foundations
> and himself put their houses on top of them.
>
> He looked out at the rocky beaches;
> there was no one, who there had built.
> "Let us clear a place and build dwellings,
> and so we own the clearing safely."

The symbolicity of sheep in Norway is effectively associated with the symbolicity of *outer pastures*, which have been crucial in Norwegian sheep husbandry

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[54] We note in passing that much of the hate towards the wolf can be ascribed to its habit of overkill. During my visit to Rendalen, one interviewee contrasted the wolf's occasionally unsubtle eating habits with those of the brown bear. At one occasion a bear came and killed just *one* of his sheep – and since the bear *ate* this one sheep that it took, the scene was not at all as meaningless as the scene of some twenty sheep and sheep carcasses dispersed in the landscape in the apparent case of a mass murder, a massacre.

[55] "Nordmannen" – also called "Millom Bakkar og Berg ut med Havet" [Between Hills and Mountains out by the Sea]. Note the doubtful truth value of the second line of the second verse – the Sami people and their very different 'buildings' etc. in the North were not recognised as such by the colonising Norwegians.

but are now under pressure. One reason is the general move from extensive to intensive farming practices. At any rate a common perception in rural areas is that outer pastures are being devalued, and that traditional Norwegian farming practices are under threat. In visual imagery, this is best expressed by a phenomenon called 'gjengroing', imperfectly translated to English as *over-growth*. Overgrowth in this sense implies that an originally open, cleared landscape is taken over by forest, weeds and other vegetation without direct agricultural value.[56] Such a landscape, with growing irrelevance (so to speak), reduced utility and (notably, in perceptual terms) an obstructed view, has become a symbol of the hardships of rural areas and Norwegian agriculture. Our thesis is that it is this perception which is at the base of the contemporary symbolic construction of the Big Bad Wolf in Norway. It is this idea of the changing landscapes as symbolic of rural troubles and the loss of traditional livelihoods that is fuelling, reinforcing, the wolf's negative symbolicity and the apparently never-ending conflict on wolf management.

In conclusion we point out that even though there is indeed an actual process of overgrowth in contemporary Norway, it is not reasonable to assume that it is predominantly caused by predator management in general or wolf management in particular. It is true that Norway is growing over (as it is likewise true that Norway is melting), but the fact that Norway as a whole is gradually being reforested is first and foremost a result of natural growth in the wake of deforestation that took place until late in the 1800s[57] (and secondarily a result of climate change). At any rate we observe that a landscape in transition has become a powerful symbol of the defeat which many in rural Norway feels subjected to – a defeat for lifestyles and farming methods alike (especially small-scale farming), a defeat for time-honoured traditions and for local communities in areas that are abundant in space and natural diversity but less so in people and immediate opportunity.

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[56] The imperfection of the English translation is due to the further connotations of 'gjengroing'. Particularly, that "et landskap gror igjen" [a landscape grows over] implies that it is being congested, clogged, blocked.

[57] In other words, in the era in which "The Norwegian" was written as telling of Norwegian nationhood.

5. SUMMARIES OF ARTICLES

The seven component papers of this dissertation have all been written solely by Morten Tønnessen and been published in the period 2009–2011, four of them as articles in academic journals (Paper 1, Paper II, Paper V and Paper VI) and three of them as book chapters (Paper III, Paper IV and Paper VII).

Paper I   Morten Tønnessen 2009. **Umwelt transitions: Uexküll and environmental change**. *Biosemiotics* 2(1): 47–64.

This article introduces the notion of *Umwelt transition*, an Uexküllian notion of environmental change. The Umwelt theory of Uexküll is criticised for its methodological and theoretical ahistoricity. The assumption that the environment (including its mixture of species) is generally stable is argued to be a false premise. Another notion introduced in this article is that of *Uexküllian phenomenology*, as characterised by an assumption of the (in the realm of life) universal existence of a genuine first person perspective, i.e., of experienced worlds. It is suggested that acknowledging this distinctiveness of the Umwelt theory is critical for eco-phenomenology as well as for biosemiotics; the latter of which can only thus thrive as a true *semiotics of being* rather than a mere 'semiotics of functioning'. The article entails a brief review of Uexküll and phenomenology, a summary review of some modern findings on macro-evolution, and concluding reflections on the ontological and epistemological outlook of Umwelt theory qua Uexküllian phenomenology.

Paper II   Morten Tønnessen 2010. **Steps to a semiotics of being**. *Biosemiotics* 3(3): 375–392.

This article presents a platform of semiotics of being in ten steps. These ten points summarise much of the author's ongoing research activity. In brief, they address 1) the role of the individual in semiotics of being, 2) the notion of Umwelt as ultimately referring to an existential realm, 3) *existential universals* (i.e., features all living creatures have in common), 4) Umwelt in its relation to language, 5) Uexküllian phenomenology and its association with phenomenologists David Abram and Ted Toadvine, 6) the task of portraying the *natural history of the phenomenal world*, 7) the imperative task in contemporary times of *Umwelt mapping*, 8) the roots of the ecological crisis in humankind's domestication of animals and plants, 9) globalisation as expressed by correlated trends of depletion of semiotic diversity and semiotic diversification, and 10) the prospective field of *semiotic economy*. The article treats the "grand systems" of Language, Economy and Nature and the theme of value in nature (partly via an anecdote on the role of fiction in natural science) in an essayistic manner, and further addresses Umwelt terminology and Umwelt mapping.[58]

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[58] On p. 384 of Paper II there is a regrettable mistake (emphasised) in the following sentence: "The Umwelt (and the Innenwelt), the functional cycle/circle and contrapuntal relations (Kontrapunktischen *Verhalten*) are all integrated concepts." The German 'Verhalten' means behaviour, the correct term is 'Verhältnisse' (relations).

Paper III   Morten Tønnessen 2011. **Semiotics of being and Uexküllian phenomenology**. In: Anna-Teresa Tymieniecka (ed.): *Phenomenology/Ontopoiesis Retrieving Geo-Cosmic Horizons of Antiquity* (= *Analecta Husserliana* CX/110), 327–340.

This chapter presents semiotics of being and Uexküllian phenomenology in summary terms. Semiotics of being is characterised as a study of signs designed to emphasise the reality of the phenomena of the living. In the course of the paper Uexküllian phenomenology is related to the eco-existentialism of Peter Wessel Zapffe (1899–1990), to eco-phenomenology (including David Abram and Ted Toadvine), and, very briefly, to various brands of semiotics of nature (biosemiotics, ecosemiotics, zoosemiotics). A few remarks are made on the partial resemblance between Uexküllian phenomenology and Anna-Teresa Tymieniecka's 'phenomenology of life', and on its basic difference to the 'phaneroscopy' of Peirce. The idea of phenomena conceived of as a layer of semiosis is illustrated by way of an example involving Larry David and a tick. In the closing remarks, which also address the topic of human freedom, it is stated that there can be no sharp distinction between philosophy and the life sciences, but rather a gradual transition from the more-or-less philosophical/generic to the more-or-less scientific/specific. This is an implication of Uexküllian phenomenology's pluralism and emphasis on studying the particulars of the living.

Paper IV   Morten Tønnessen 2011. **Mapping human impact: Expanding horizons – interdisciplinary integration**. In: Tiina Peil (ed.): *The Space of Culture – the Place of Nature in Estonia and Beyond* (= *Approaches to Cultural Theory* vol. 1), Tartu: Tartu University Press, 93–106.

This chapter is concerned with the question of how we can map the impact that humankind is having on (or rather in) ecosystems worldwide. The basic movement in the text is one from self to world, and it is claimed that the way our human selves practically branch off into the world of others can be represented figuratively based on qualitative analysis of aggregate numerical environmental data, with Uexküllian terminology at the base. In the course of the chapter three figures are presented, all involving *ontological maps* (see our note on the alternative designation 'relational Umwelt map' in 3.1 *Visual representation of Brock's phenomenal fields*). One of these maps (Figure 1) is concerned with traditional relationships between humans and animals in gross terms. The chapter presents some reflections on qualitative and quantitative studies – with particular emphasis on the biosemiotic approach, compares the *ecological footprint* notion and our own notion of *ontological niche* (first introduced in Tønnessen 2003), and presents a simplified procedure for interpreting numerical data qualitatively.

Paper V   Morten Tønnessen 2010. **The global species**. *New formations: a journal of culture/theory/politics* 69 (Special Issue guest-edited by Ashley Dawson, *Imperial Ecologies*): 98–110. Featured as additional content in *Encyclopaedia Britannica* (www.britannica.com).

This article explores the historical process of globalisation by assessing the planet's colonisation by the human species and its affiliated species. It is argued that this established global 'colonial organism' means the installation of an ecological empire, organised with *Homo sapiens* placed highest in the hierarchy and with crop species, pets, and livestock enjoying positions of privilege. The landscape has been altered to accommodate the proliferation of these various species, making the geographical spread of lifeforms on a global scale much easier. Thereby we as a species have further provided global breeding grounds for other species that might not otherwise have been able to spread at a global scale. The article addresses the ecology of capitalism, the politics of bio-semiotics, and the ecosemiotics of globalisation – and presents a systematic review of the global distribution of key livestock species. It further reviews the international distribution of crop species and, more fragmentarily (given the lack of global data), the occurrence of pets internationally. The article also addresses the beginnings of globalisation, which is sketched in form of four consecutive waves: 1) of the global presence of humans, 2) of the presence of our affiliated species, 3) of human management (our administrative range) and 4) of the growth economy. A key hypothesis in the context of land use, drawing on the example of Bangkok, is that our global civilisation is organised around urban settlements with ecological space repeatedly concentrically organised as urban areas – rural areas – wasteland.

Paper VI   Morten Tønnessen 2010. **Wolf land**. *Biosemiotics* 3(3): 289–297.

This article makes use of the notion of *wolf land*, which is to be considered as an ambiguous term referring to "the land of the wolf" from the wolf's perspective as well as from a human perspective. The general circumstances of the Scandinavian wolf population are presented, as is the Norwegian wolf controversy in particular. The rationale for the choice of these particular study animals is summarised in three points: 1) wolves are among the most adaptive mammals on Earth – as evidenced by today's enormous variety of dog (*Canis familiaris*) breeds, 2) wolf management is typically controversial, and not less so in the otherwise peaceful Scandinavian context, where it has given rise to a symbolic strife between rural traditionalists on one side and conservationists popularly associated with the government and urban elites on the other, and (3) the modern Scandinavian wolf population has been monitored and sampled practically speaking since its foundation – as a result, there is a rich body of scientific literature on the topic. The final section of the article entails identification of changing factors in current Scandinavian wolf ecology in terms of its semiotic niche (see Hoffmeyer 2008) and ontological niche respectively. In a

concluding comment addressing the now controversial notion of wilderness it is suggested that the critical question to be asked is not whether or not Man is part of nature, but what the exact character of our relations in nature is. In a similar vein, we should not ask whether or not human artefacts are "natural" – but to what extent they also appear as Umwelt objects for other creatures.

Paper VII   Morten Tønnessen 2011. **I, wolf: The ecology of existence**. In: Ane Faugstad Aarø and Johannes Servan (eds.): *Environment, Embodiment and Gender*, Bergen: Hermes Text, 315–333.

This chapter ultimately addresses but two topics: The nature of the wolf, and the nature of Man. These two topics are methodologically problematic for two different reasons: Man's nature because we *are* the topic to be investigated and can thus not judge it without bias; the wolf's nature because we *are not* wolves and can thus not know firsthand what it is like to be a wolf. The text is organised into five parts, the three first treating in sequence the politics of wolves and sheep (in the Scandinavian context), *ecological alienation*, and then *distinctive being* vis-à-vis *communal being* (intended as complementary designations applicable on humans and all other living creatures). Ecological alienation can be taken to describe a state of mind, and of social life, in which vital constituent parts of the lifeworld of the creature in question are either absent or perceived and treated in an abnormal way. It is stated that such alienation is correlated with both abnormally low (wildlife) and abnormally high (livestock) population densities. The modern Scandinavian wolf population has at least at times qualified for this designation. When preceding gradual extinction or occurring in a phase of recolonisation, ecological alienation is a transitional phenomenon. The fourth part is entitled "Man is not a sign" and introduces the *anthropocentric mistake*, namely to reason (erroneously) that human reality is practically all there is. We tend to think in terms of language, and in terms of language, all is language – all is human. The final part is entitled "In search of the wolf's perspective" and involves a paraphrasing of a famous section from Sartre 1958, applied to the wolves of Polar Zoo. The reality of absence and meaninglessness in animal lives is thus presented yet again. In this respect the chapter contributes to a biosemiotically oriented existential semiotics.

6. CONCLUSIONS AND FURTHER DEVELOPMENT

In this section we present a few general theoretical findings, sketch three Umwelt scenarios in the context of Norwegian wolf management, and eventually present in brief our future-oriented perspectives on deep and shallow solutions in the same context.

6.1. Theoretical findings

A central part of our revision of Uexküll's Umwelt theory and methodology concerns developing various notions of change (i.e., specific notions, or categories, of Umwelt transition). This enterprise is all the more rewarding because it turns out that a concept of Umwelt transition is fundamentally and fruitfully different from more traditional notions of environmental change. Umwelt transition, then, cannot be *equated* with 'environmental change' in the common sense – these are in no way synonymous. *An Uexküllian notion of environmental change is characterised by an attempt to consider how what is otherwise called environmental change is experienced from the point of view of the living (i.e., living beings).* But that is only the start of it – because in terms of Umwelt transition a range of other phenomena which are not usually associated with environmental change also qualify for the term, including biological and cultural phenomena alike.

In short, anything that qualifies as 'content' of any given lifeworld – in other words, any Umwelt object, and any meaning factor – qualifies in principle as something for which there may be Umwelt transitions. All phenomenal content is potentially subject to environmental change in an Uexküllian sense. The result is a notion of environmental change that is substantially different from a mainstream notion that subjects environmental change to ecosystems only (and in physio-chemical terms only). In contrast Umwelt transitions may occur at a number of scales ranging from the individual organism to the global ecosystem. Furthermore, while the mainstream notion of environmental change predominantly concerns change on a macro-evolutionary timescale, Umwelt transitions may additionally occur not only regularly on an ecosystem level but even regularly in individual lives (see Paper I p. 49). As such it is a concept that can be applied as a common tool for both developmental and evolutionary biology, and moreover in biology and cultural studies alike.

One recurring problem of Umwelt theory and methodology as outlined in this dissertation is that there are several aspects of the life processes – among those several of a phenomenal (as in perceptual) character – which it does not capture. In particular, it appears to fall short whenever we are not dealing with individual organisms but with superorganisms. A scheme developed in 1.2 *The levels of biosemiosis* suggests that there is super-organismic semiosis – in that scheme, such semiosis is characterised as *super-perceptual* or *macroscopic*

semiosis, and it constitutes the third and most complex level of biosemiosis.[59] This thesis has predominantly been concerned with the perceptual (also called organismic) level of biosemiosis, and it is evident that deeper engagement with the other levels of biosemiosis, super-organismic semiosis included, is required in order to arrive at a fuller understanding of the ecology of perception.

In the process of updating Umwelt theory with regard to both historicity and super-organismic complexity, we have learned that our understanding of other aspects of Umwelt theory might change as well. On a par with the realisation that applying historicity within Umwelt theory implies a critical view on the balance of nature and on the notion of Umwelten as *perfectly meaningful* entities,[60] for instance, is the discovery, in light of our tentative examination of complexity in the relations between Umwelten, that *a number of individual Umwelten are actually incomplete* when viewed in isolation, as singular, individual Umwelten. This concerns what we will call *Umwelt assemblages* (consider the synchronised behaviour and perception of a rider and a horse) and *swarm Umwelten*, and the coordinating *Umwelt alignment* involved in both cases. In the case of swarm Umwelten, consider the example of a school of fish. The lifeworlds – the Umwelten – of the individual fishes in the school of fish are only fully meaningful given the presence of the others, not in isolation. In similar ways, of course, even our human Umwelten qua individuals are ultimately meaningful only given the presence of several others, and our behaviour and perception is frequently synchronised with that of others, conspecifics in particular. Both Umwelt assemblages and swarm Umwelten are examples of what we have in Paper I (p. 52 – here in plural form) called *aggregate Umwelten* (see also Paper III, particularly the cautionary remarks on pp. 330–331 and in footnote 4).

The perspective described above has not been treated explicitly within the confines of this thesis, but will be developed in a monograph which we intend to complete in the time to come. This work will prospectively develop several aspects of the current dissertation. It should be duly noted that on the points where we have found and will find it advantageous to revise Uexküll's thought, our aim is either to bring his thought into our own era, or to expand upon the notion of the organism as relational. The Umwelt, to sum up, is neither necessarily as harmonious and fulfilled, nor by definition as complete as Uexküll would have it.[61]

The human Umwelt, being the most complex species-specific Umwelt we know, could in consequence of its complexity be said to be the most difficult Umwelt of all to map in any revealing detail. Umwelt research is usually

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[59] Note, however, that there are numerous instances of *simple* super-organismic semiosis, and similarly numerous instances of *complex* sub-perceptual semiosis – and that the latter may very well be more complex than the former, if compared. The scheme in 1.2 pinpoints levels of biological complexity *only in specific cases*, not comparatively.

[60] Notably, Uexküll did not have any notion of meaninglessness in animal lives.

[61] But perhaps his harmonious, fulfilled, and in part his complete Umwelten can serve as ideals to us, in ecopolitics (lest they obstruct our truly social inclinations!).

conceived of as a biological discipline, but the scholarly scope should be broadened considerably whenever Umwelt research is concerned with detailed study of human Umwelten. In such cases the partly overlapping fields of psychology, sociology, folkloristics, ethnology and anthropology are indispensable sources, and familiarity with – or qualified indirect access to – these is required for any truly competent Umwelt researcher in the human domain. While simple, familiar, typical or emblematic situations might be the easiest to depict, for instance in drawing a particular functional cycle, a complex set of relations – or a complex behavioural pattern – is inevitably much harder. Future development of the notion of swarm Umwelt as applicable in cultural studies (where cultures will be methodologically approached as superorganisms) might enrich our methodological tool box considerably.

The visual representations of Brock's phenomenal fields (see 3.1) have proven to be useful, but will gain by being further developed so as to facilitate more detailed and precise depictions of lifeworlds. This is particularly pertinent if such visual representations are to be applied in empirical biological studies properly speaking. While some general guidelines can be given, it is crucial to acknowledge that workable visual representations will have to be case-specific and thus adapted to the appropriate design in each specific case. Adapting the phenomenal fields to particular study must imply to customise, standardise and specify each of the fields e.g. in accordance with the exact sensory range of an organism (with defined minimum and maximum values). The starting point of this simple circular model is four perceptual/behavioural categories represented figuratively as 4 x 90°. Custom-made phenomenal fields will likely involve precise subdivision of these 90° sections according to a chosen relevant scale. Further precision can be attained by utilising the radius as well as an exact and defined scale. Sensory channels or other elements (such as classes of Umwelt objects in terms of functionality) may be colour-coded.

Figure 12 shows a basic representation of intragroup variation, be it within a species or within a lifeform otherwise delineated, which is also important to emphasise whenever relevant. In the case of wolves it certainly is relevant, given their advanced social system and furthermore the apparent occurrence of wolf personalities.
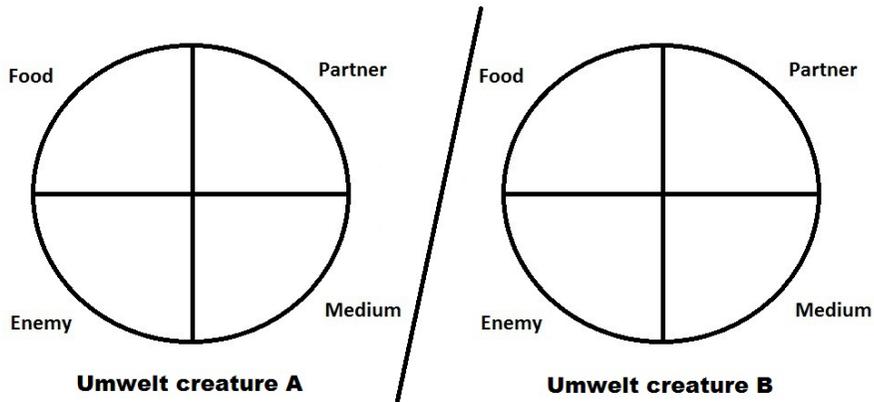
Figure 12. Phenomenal fields – intragroup variation.

A further shortcoming of Uexküllian methodology as developed in the current thesis concerns the lack of detail in representations of the human Umwelt. As we see in Figure 4 *Umwelt transition in human relations to sheep and wolves*, that representation (in the form of phenomenal fields) is somewhat informative but nevertheless clearly inaccurate. Particularly: How telling is it to present wolves as social companions of humans (in the case of shy, free-range wolves)? In fact it is false and misleading in most senses of the term 'Umwelt'. Thus the need to develop the phenomenal fields further in the human case (and as it turns out, a further development might to some extent be a relevant specification in the case of animals in general as well).

Figure 13 shows a tripartite model of the human Umwelt (which might in generalised form be adapted to general biological usage, insofar as the layers of mediated Umwelt and of the conceptual world is relevant in each specific case).
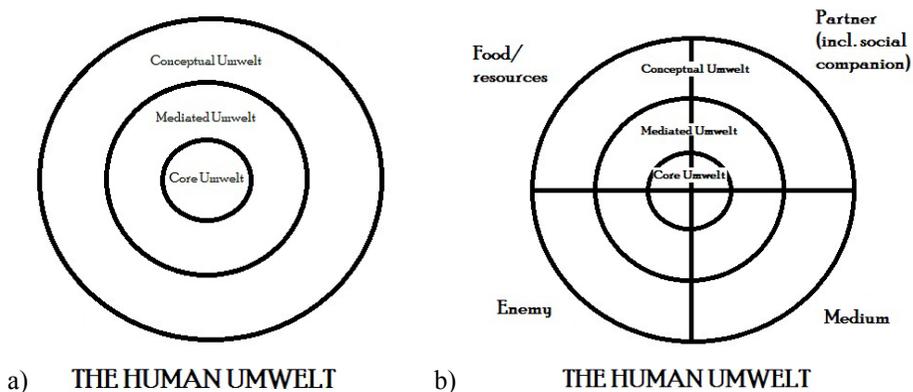
Figure 13. a) A tripartite model of the human Umwelt, b) combined with phenomenal fields.

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As we see, the three-layered model of the human Umwelt in 13 a) results in combination with the four phenomenal fields in the twelve more specific fields incorporated in 13 b). A few words are required to make clear what the three designations in 13 a) stand for. By *core Umwelt*, we mean the aspect of Umwelt in which one interacts directly and immediately with other creatures or Umwelt objects, in (to use a figure of speech) "face-to-face" encounters. Core Umwelt objects (or rather the *Merkmalträgern* ("trait carriers") associated with them) are characterised by being located at roughly the same place as the Umwelt creature in question, and co-located momentarily in temporal terms as well. By *mediated Umwelt*, we mean the aspect of Umwelt in which Umwelt objects are encountered indirectly by way of some mediation (memory, fantasy, anticipation, intermediary recurrence, etc.). Mediated Umwelt objects are thus mediated through space, possibly also through time. We suggest that this aspect of Umwelt can generally be associated with Uexküll's notion of the *search image* (Suchbild).[62] By *conceptual Umwelt*, we mean the aspect of Umwelt in which one navigates among Umwelt objects in terms of predicative reasoning in general or human language in particular. Conceptual Umwelt objects are in the latter case Umwelt objects whose functional meaning is imprinted linguistically.[63] We theorise that these three layers interact dynamically so that one or two of the layers are occasionally temporarily suspended (in other words, human perception is subsequently focused – more or less exclusively – on different Umwelt layers).

Where can we place the wild wolf qua social companion for humans in this improved version of the phenomenal fields? If in the core Umwelt, then the wolf in question has actually been encountered – a rarity in actual modern life – and (at the very least) been perceived by the human Umwelt creature in a friendly manner. If in the mediated Umwelt, then the wolf has only appeared as an Umwelt object by way of mediation (for instance because the human specimen is *looking for* wolves, *dreaming about* wolves, or watching wolves in television documentaries). If in the conceptual Umwelt, then the human in question has likely *heard* or *read* something that made wolves principally positive Umwelt objects. If we were to redraw Figure 4, referred to above, we see that depending on circumstances we could place wolves as Umwelt objects either in the mediated Umwelt or in the conceptual Umwelt (or both), but only exceptionally in the core Umwelt.

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[62] This suggestion implies that the mediated Umwelt might be a universal aspect of Umwelten as such.

[63] This third and most novel aspect of Umwelt in evolutionary terms corresponds to what Sebeok called humans' *secondary modelling system* (the 'animal' Umwelt in his scheme being the primary modelling system – see also footnote 11, in 1.1 *Appraisal of Sebeok's depiction of the Umwelt as species-specific modelling system*).

6.2. Umwelt futurology:
Three Umwelt scenarios

En masse, Umwelt scenarios – scenarios for future societal and/or ecological states in terms of Umwelt – constitute *Umwelt futurology*.[64] When it comes to future scenarios, extreme scenarios are sometimes telling, if only applied hypothetically. One such scenario in our context would be the systematic disappearance of sheep husbandry in Norway, or the end of Norwegian agriculture as such. Another could involve *the end of management* (a daunting thought to most wildlife managers, as we learned at SKANDULV's seminar). In this penultimate subsection we sketch three fundamentally different Umwelt scenarios for Norway with regard to wolves and agriculture (sheep husbandry in particular). The scenarios are labelled (1) *Business as usual*, (2) *No wolves*, and (3) *Reinvigorated agriculture*.[65] There are groups of Norwegians favouring each one of these scenarios – in that sense none of them are wholly unrealistic.

Umwelt scenario (1): Business as usual. A mainstream scenario which takes business as usual for granted will involve fewer farmers and bigger farms. Some livestock populations including cattle might decline further, whereas as others including pigs and poultry (which have both already been subjected almost exclusively to indoor Umwelten, in mass settings) might continue to grow. Furthermore, the importation of feed is likely to increase further. Given ever-increasing ratios of number of livestock to number of farmers, Norwegian agriculture will have to become increasingly industrialised, and in economic terms investment will increasingly dominate over labour. Overall production as measured in volume might increase somewhat. The implications for sheep husbandry will be that most small-scale sheep farming will come to an end, whereas some of those farmers holding large numbers of sheep will hold even larger numbers of sheep. Sheep husbandry is simultaneously likely to become more concentrated geographically, with pockets here and there. As for wolf management, the relation between Norwegian and Swedish wolf management regimes will be crucial for what the Norwegian situation will be. If Sweden remains on the whole more hospitable to wolves than Norway, it is conceivable that current trends involving an unusually high proportion of stray wolves (which are statistically more likely to become 'troublemakers') in Norway will only amplify – no matter how Norwegian wolf management is developed.

Umwelt scenario (2): No wolves. An Umwelt scenario involving no wolves on Norwegian territory can take on several forms. For instance, there might or might not be wolves in Sweden (and Finland), and there might or might not be other large carnivores in Norway (and in Sweden and Finland). The ecological situation would vary accordingly. If there were no wolves but were other large

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[64] *Political* Umwelt futurology aims to achieve a particular desired Umwelt transition.

[65] In the current context we have not found it necessary to define an exact time perspective, but given available global scenarios on future demographics, climate change etc. it would be reasonable to relate to a period stretching to 2050–2100 but not further.

carnivores in Norway, another species *might* be made into a symbol of large carnivores in general. If on the other hand there were no large carnivores left in Norway, a new symbol of agricultural and rural hardship would perhaps emerge, replacing wolves and predators. If there were no wolves in Sweden, not many migrant wolves would get to Southern Norway – if there were no wolves in Finland or on the Russian side of the Norwegian border in the north either, then neither would there be many migrants in Northern Norway. But if there were indeed a substantial number of wolves in but one of these places (particularly in Southern Sweden), the result would inevitably be a constant influx of stray wolves. Even in a Norwegian "no wolf" scenario, in other words, there would be wolves appearing from time to time, and the wolves appearing would in percentual terms be highly likely to be troublesome individuals in terms of predation on sheep, given current practices. It is plausible in such a situation that wolf depredation on sheep in Norway would not at all decline, unless systematic and immediate culling of immigrating wolves was effectively implemented. From an antagonist standpoint, the "no wolf" scenario presumes in order to work well that there were no wolves in Sweden either, and consequently no wolves in Finland, and consequently no wolves in North-Western Russia. The crucial question with regard to agricultural interests becomes: How would Norwegian agriculture fare, given the wolf's repeated functional extinction? Leaving the question of the occurrence of other large predators in the absence of the wolf aside, we observe that if agriculture develops as in the Umwelt scenario *Business as usual*, then at any rate a huge number of farmers will lose their livelihoods, particularly those with small-scale, traditional practices.

Umwelt scenario (3): Reinvigorated agriculture. Our third scenario pre-supposes that Norwegian agriculture is reinvigorated. Here, this is intended as implying that (a) the number of farms grows, (b) the number of farmers grows, (c) agricultural output overall grows, and (d) Norway's degree of self-sufficiency increases. In such a development, labour will balance investment as an input factor. The ratio of number of livestock to number of farmers will either remain fairly stable or decrease, to the effect that there might be more human labour to put in for each animal. This would enable sheep farmers to invest more in spending time (perhaps by way of hired labour) on inspections in the field at summertime and perhaps even herding. The overall development would favour labour-intensive rather than capital-intensive practices, which would benefit livestock in terms of human-animal sociality in that the presence of their human caretakers would remain, and perhaps even be augmented. And what of the wolf? The wolf would no more be regarded as deeply problematic for Norwegian agriculture in general and sheep farmers in particular. Its negative symbolicity would wane. Almost no matter how many wolves there were in Norway, sheep farmers would most likely have other preoccupations altogether. This is the scenario of conviviality.

6.3. Deep and shallow solutions

As we saw in 6.2, both *Business as usual* and the *No wolves* scenario might in fact result in recurring problems with wolf depredation on sheep of comparable extent to what is the case today. We observe that the future development of Norwegian sheep husbandry and Norwegian wolf ecology is overall *independent* of each other in that one does not determine the prospects of the other in strictly ecological terms. Simultaneously, the future prospects of Norwegian wolf management *depend* on the future development of sheep husbandry (and Norwegian agriculture at large), not in ecological terms properly speaking but *in perceptual (and thus semiotic) terms* – or, as we may say, in terms of semiotic causation (cf. 3.2 *The notion of semiotic causation*). As a mirror image of agricultural developments, future wolf symbolicity will in its negative aspects likely reflect the perceptions of and in agriculture, and the development of this symbolicity is in turn decisive for the prospects of wolf conservation in Norway.

The Scandinavian management regime at large appears to be bent first of all on negotiating agreement along the urban-rural axis. Its "blend of good causes", however, has proven to be a failure, at least if we are to judge by perceptions articulated along this conflict axis. The authorities have no doubt under-estimated the power of, and role of, symbolism in carnivore politics.[66] In designing and enacting a wolf management regime, it is absolutely essential to take into account what perceptions people have in various sectors of society, and to acknowledge that perceptual development (qua cultural phenomenon) has its own dynamic and may span over generations.

To frame this politically, we see that there is a profound difference between approaching Norwegian wolf management in a *deep* and a *shallow* manner, to apply a key distinction propagated by deep ecologist Arne Næss (1973). Whereas a shallow approach implies addressing each 'environmental problem' directly and out of context, a deep approach must imply to contextualise any given problem and then address the whole complex of issues that are in one way or another related to it (if only by way of runaway semiotic causation). In the current context it is arguably the case that however we choose to address the issue of wolf conservation in terms of management methods etc., we are bound to fail in our efforts *unless other, more fundamental societal developments develop favourably*. A deep approach to Norwegian wolf conservation, then, ironically implies addressing a range of apparently unrelated issues, the future development of Norwegian sheep husbandry included. To work for the wolf, one must work for the sheep.[67]

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[66] If the current thesis has potential for practical applications in wildlife management in Norway or beyond, its basic contribution is this: An acknowledgement of the need for *analysis in context* (not only biologically but furthermore culturally).

[67] And not only for the sake of the wolf!

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SUMMARY

The main task of this dissertation is to contribute to the development of Umwelt concepts and models – in short, Umwelt theory in the tradition after Uexküll – and to attempt to describe the semiotic mechanisms that regulate the wolf and sheep populations in Scandinavia, especially through their interaction with the human species. A case study on Norwegian wolf management is used as a test case for the application of theoretical concepts and models developed in the thesis. The overall aim is to demonstrate that a revised and further developed, up-to-date Umwelt theory is applicable in the contemporary scientific context, and to point to its wide-ranging philosophical implications. It is thus our claim that Uexküll's thought can do better than simply serve as a historical source of inspiration.

Our initial premise is that ecological reality – the global ecosystem – is ultimately, and first and foremost, an existential realm. More precisely, all creatures are actively engaged in their relevant surroundings, which appear to them within the context of their lifeworlds. The core concept of this work is that of *Umwelt transition*, which represents an Uexküllian notion of environmental change. Since Uexküll himself did not engage such a notion, but rather presented Umwelt theory as a methodologically ahistorical approach, Uexküllian phenomenology as we depict it cannot in detail be taken as representative of Uexküll's thought. This thesis text intermittently presents programmatic statements for both semiotics and phenomenology. The general assumption is that unification of the two fields of inquiry can be mutually enriching, especially with regard to semiotics of nature and eco-phenomenology.

In the first section of this dissertation, 1. *The biosemiotic approach*, we start off with a critical appraisal of Sebeok's depiction of the Umwelt as a species-specific modelling system. In categorising Umwelten the threshold of the species is indeed useful – and it is certainly characteristic of intraspecific communication – but the threshold of the species is nevertheless but one threshold among many. We further introduce a tentatively all-inclusive model of various *levels of biosemiosis*, where the central level is constituted by perceptual semiosis and further levels by sub-perceptual and super-perceptual semiosis. In the course of this subsection the place of cultural semiotics within exosemiotics, and the place of phenomenology within semiotics, is presented.

The second of four topical sections, 2. *Uexküllian phenomenology*, addresses the notion of phenomenology and establishes how diverse the field of phenomenology is. There is thus no ultimate definition of phenomenology, nor definitive criteria for what counts as phenomenology. A subsection on semiotics and phenomenology reviews interconnections between the two fields and raises the following questions: Does phenomenology have to be Husserlian? And does semiotic phenomenology have to be Peircean? Though we find some common ground with Uexküllian phenomenology in both Husserl's and Peirce's respective phenomenologies, our general answer to these two questions is 'no'. Deely's rejection of phenomenology is rebuffed because his claim that

phenomenology is in its nature idealistic, epistemological only, and Cartesian is not telling of the philosophies of several major phenomenologists. A subsection on Husserl's notion of *Lebenswelt* concludes that it is partly overlapping with Uexküll's Umwelt notion. Husserl's conception implies that there are animal lifeworlds (Lebenswelten) as well, but the human Lebenswelt is the measure of other lifeworlds and their model insofar as methodology is concerned. A concluding section on the notion of Uexküllian phenomenology states that Uexküll's call for a subjective biology echoes Husserl's call for a return to the things themselves in the most meaningful way possible, by in effect implying a return to the study and perception of *nature qua individuals*, *nature qua living creatures*. Uexküllian phenomenology differs from most established phenomenologies by not being consciousness-centred, and by not adopting neutrality with regard to the reality status of phenomena. We establish that it – in our depiction – is particularly affiliated with a line of phenomenological development that goes from the late Husserl via Merleau-Ponty to the contemporary phenomenologist David Abram (though we have some reservations with regard to the latter's animism).

The third section, 3. *Umwelt mapping*, begins by reflecting on the general problem of factual discourse. It is stated that semiotics as an interdisciplinary approach can thrive only by absorbing knowledge from other, narrower, more specialised fields. Proper empirical grounding is essential. The first subsection treats Friedrich Brock's drafted Umwelt typology and presents an adaptation of his *phenomenal fields*. We establish that rather than describing these comparatively, as Brock proposed, we may just as well describe these four main phenomenal fields (corresponding to Uexküll's four main functional cycles) for one single species, population, or individual organism, over time. While his was a static and finite biological typology, ours is a dynamic and *diachronic* biological typology. The second subsection is devoted to the notion of *semiotic causation*, which can be defined in the following way: When a sign acts as a cause, the causal process at hand is a process of semiotic causation. In a more technical manner, we can say that the semiotic cause X causes the semiotic effect Y to appear as a sign of X whenever Y appears as a sign of X. A *semiotic effect* is thus proof of a *semiotic cause*. Unlike efficient causation, semiotic causation is not wholly predictable, because it always involves a measure of interpretation. In terms of Umwelt we can state that a creature's Umwelt consists of the signs which *cause it* to respond.

The final topical section, 4. *Case study: Norwegian wolf management*, puts forward a little background in summary terms. While the wolf has become less of an enemy, the sheep is becoming less of a social companion. A brief overview is given of the preliminary outcome of ongoing policy reviews in Norway and Sweden. The section further presents an overview of field trips and interviews conducted, and includes a number of photographs from the former. A thorough yet not comprehensive review is offered of the cultural semiotic of wolves and sheep. In the case of the wolf two prominent categories of symbolic imagery concern violence (and plotting, and unruly hunger) and sex (and

seduction). In the works of Shakespeare, the wolf is (among other things) embodied hunger – predatory hunger – pure hunger. The sheep derives much of its symbolicity, particularly in the Bible, from being juxtaposed with the wolf. A further subsection makes remarks on Næss' philosophy of wolf management, concluding that Næss did not provide a concrete solution to the problem of wolf conservation in Scandinavia. The next subsection addresses invasive management of shy animals, and covers among other things human objects in wolf Umwelten. The final subsection treats the symbolic construction of the Big Bad Wolf in contemporary Norway. It is stated that the human perception of wolves has in large measure decoupled from ecological reality. The sheep's symbolicity is in the Norwegian context grounded in open landscapes, which are typically taken to be characteristically Norwegian. Its symbolicity is effectively associated with the symbolicity of outer pastures, and the perception that Norway is growing over.

Section 6, *Conclusions and further development* (following section 5, containing article summaries), starts off with theoretical findings. Umwelt transition cannot be *equated* with environmental change in the common sense, for it is a wider notion applicable in biology (be it developmental or evolutionary) and cultural studies alike. One recurring problem of Umwelt theory and methodology as outlined in this dissertation is that it appears to fall short whenever we are dealing with superorganisms. To address this shortcoming, further conceptual developments are outlined. Some general guidelines for customising the phenomenal fields are presented, and it is established that in empirical biological studies particularly workable visual representations will have to be case-specific. A tripartite model of the human Umwelt (which may be applied in combination with the phenomenal fields – and generalised so as to apply to animals in general) is sketched. In the penultimate subsection three Umwelt scenarios for future wolf ecology and sheep husbandry in Norway are introduced, named (1) *Business as usual*, (2) *No wolves* and (3) *Reinvigorated agriculture* respectively. The final subsection establishes that future wolf symbolicity in its negative aspects – in the Norwegian context mirroring agricultural developments – will determine the prospects of wolf conservation. The authorities have underestimated the power of, and role of, symbolism in carnivore politics. In political terms there is a profound difference between approaching Norwegian wolf management in a deep and a shallow manner (Næss 1973). However we choose to address the issue of wolf conservation in terms of management methods etc., we are bound to fail in our efforts unless other, more fundamental societal developments develop favourably. Whereas a shallow approach implies addressing each 'environmental problem' directly and out of context, a deep approach must imply to contextualise any given problem and then address the whole complex of issues that are in one way or another related to it (if only by way of runaway semiotic causation).

SUMMARY IN ESTONIAN

Uexexternal fenomenoloogia ja omailma üleminekud: Norra hundipopulatsiooni majandamise ökosemiootiline analüüs

Selle väitekirja peamiseks ülesandeks on anda oma panus omailma mõistete ja mudelite arendamisse (teisisõnu omailmateooriasse Uexexternal järgses traditsioonis) ning püüda kirjeldada semiootilisi mehhanisme, mis reguleerivad Skandinaavia huntide ja lammaste populatsioone, pöörates eriti tähelepanu nende interaktsioonidele inimesega. Norra hundimajandamise juhtumianalüüsi kasutatakse töös, testimaks väitekirjas arendatud teoreetiliste mõistete ja mudelite rakendamist. Töö üldiseks eesmärgiks on näidata, et redigeeritud ning edasiarendatud omailmateooria on rakendatav kaasaegses teaduslikus kontekstis, ning osutada selle laiaulatuslikele filosoofilistele järelmitele. Töös väidetakse seega, et Uexexternal ideid saab kasutada paremini kui lihtsalt ajaloolise inspiratsiooniallikana.

Töö algseks eelduseks on, et ökoloogiline reaalsus – globaalne ökosüsteem – on põhiolemuselt ning esmajoones eksistentsiaalne vald. Täpsemalt öeldes on kõik olendid aktiivselt kaasatud nende jaoks olulistesse ümbrustesse, mis ilmnevad neile nende eluilmade kontekstis. Selle töö võtmemõisteks on *omailma muutus,* mis on uexexternalaanlik keskkonnamuutuse mõiste. Kuna Uexexternal ise sellist mõistet ei kasutanud ning oma omailmateooriat esitas ta pigem kui metodoloogiliselt ajatut lähenemist, ei saa selles töös kujutatud uexexternalaanlikku fenomenoloogiat oma detailides pidada Uexexternal enda mõtte esindajaks. See väitekiri pakub kohati välja programmilisi väiteid nii semiootika kui fenomenoloogia jaoks. Autori üldine seisukoht on, et nende kahe uurimisvaldkonna ühendamine võiks olla vastastikku rikastav, pidades seejuures eriti silmas looduse semiootikat ning ökofenomenoloogiat.

Selle väitekirja esimeses jaos *1. Biosemiootiline lähenemine* alustatakse Sebeoki omailma kui liigispetsiifilise modelleeriva süsteemi kirjelduse kriitilise heakskiiduga. Omailmasid liigendades on liigi lävi kindlasti kasulik ning see on kindlasti iseloomulik liigisisese kommunikatsioonile, kuid liigiläve on siiski üks läve paljude seas. Järgnevalt tutvustatakse üht võimalikku kõikehõlmavat erinevate *biosemioosi tasandite* mudelit, milles keskseks tasandiks on taju semioos ning teiseks tasanditeks on tajust lihtsamad ning tajust keerukamad semioosid. Selles alajaotuses esitatakse kultuurisemiootika koht eksosemiootikas ning fenomenoloogia koht semiootikas.

Nelja temaatilise osa teine osa *2. Uexexternalaanlik fenomenoloogia* puudutab fenomenoloogia mõistet ning näitab, kui mitmekesine on fenomenoloogia valdkond. Seega ei ole võimalik anda ühest fenomenoloogia definitsiooni ega ka määratleda fenomenoloogia kindlaid kriteeriume. Semiootika ning fenomenoloogia alljaotuses vaadeldakse kahe valdkonna vahelisi seoseid ning püstitatakse järgnevad küsimused: kas fenomenoloogia peab olema husserliaanlik? Ja kas semiootiline fenomenoloogia peab olema peirceiaanlik? Kuigi nii Husserli

kui Peirce'i fenomenoloogiates leidub teatud ühisjooni uexkülliaanliku fenomenoloogiaga, on meie vastus nendele küsimustele eitav. Deely fenomenoloogiakriitika lükatakse tagasi, sest tema väide, justkui oleks fenomenoloogia oma olemuselt idealistlik, vaid epistemoloogiline ning kartesiaanlik, ei kehti paljude teiste oluliste fenomenoloogide filosoofiate kohta. Alajaotuses Husserli *Lebenswelti* mõistest järeldatakse, et see on osaliselt kattuv Uexexternal omailma mõistega. Husserli mõiste eeldab, et olemas on ka loomade eluilmad (Lebenswelten), kuid inimese Lebenswelt on metodoloogilises plaanis kõigi teiste eluilmade mõõt ning mudel. Uexkülliaanliku fenomenoloogia mõistet puudutavas lõpuosas väidetakse, et Uexexternal üleskutses subjektiivsele bioloogiale kajab vastu Husserli üleskutse pöörduda tagasi asjade eneste juurde kõige tähenduslikumal võimalikul viisil, eeldades tegelikult tagasipöördumist looduse kui indiviidide, looduse kui elusolendite uurimise ja taju juurde. Uexkülliaanlik fenomenoloogia erineb enamikust juurdunud fenomenoloogiatest, kuna see ei ole teadvuse keskne ning ei võta omaks neutraalsust fenomenide tegelikkuse staatuse osas. Töös leitakse, et see on eriti lähedane fenomenoloogilisele arenguliinile, mis kulgeb hilisest Husserlist Merleau-Ponty kaudu kaasaegse fenomenoloogi David Abramini (kuigi mõningate mööndustega viimase animismi suhtes).

Kolmas osa *3. Omailma kaardistamine* algab aruteluga faktilise diskursuse üldise probleemi üle. Väidetakse, et semiootika kui interdistsiplinaarne lähenemine saab edeneda vaid, ammutades teadmisi teistelt, kitsamatelt ning enam spetsialiseerunud valdkondadelt. Korralik empiiriline alus on äärmiselt oluline. Esimeses alajaotuses tegeletakse Friedrich Brocki visandatud omailma tüpoloogiaga ning esitatakse *fenomenide väljade* kohandus. Väidetakse, et selle asemel, et kirjeldada neid võrdlevalt nagu Brock pakkus, võib neid nelja fenomenide välja (mis vastavad Uexexternal neljale peamisele funktsiooniringile) sama hästi kirjeldada ajaliselt ühe liigi, populatsiooni, individuaalse organismi juures. Kui tema bioloogiline tüpoloogia oli staatiline ja lõplik, siis töös väljapakutu on dünaamiline ja *ajalooline* bioloogiline tüpoloogia. Teine alajaotus on pühendatud *semiootilise põhjuslikkuse* mõistele, mida võib defineerida järgnevalt: kui märk toimib põhjusena, on toimuv kausaalne protsess semiootilise põhjuslikkuse protsess. Formaalsemalt väljendudes võib öelda, et semiootiline põhjus X põhjustab semiootilise tagajärje Y ilmumise X-i märgina iga kord kui Y ilmub X-i märgina. *Semiootiline tagajärg* on seega *semiootilise põhjuse* tõend. Erinevalt vallandavast põhjuslikkusest pole semiootiline põhjuslikkus täielikult ennustatav, sest selles on alati olemas tõlgendulikkuse mõõde. Omailma terminites võib väita, et olendi omailm koosneb märkidest, mis *põhjustavad teda* vastama.

Viimane temaatiline jaotus *4. Juhtumianalüüs: Norra hundimajandus* esitab kokkuvõtlikult väikse tausta. Hundi roll vaenlasena on vähenenud nii nagu on vähenenud lamba roll sotsiaalse kaaslasena. Antakse lühike ülevaade tänaste poliitikaaruannete tulemustest Norras ja Rootsis. Selles osas antakse ka ülevaade väljasõitudest ja intervjuudest, lisatud on mitmed väljasõitudel tehtud fotod. Tehakse põhjalik, kuid mitte kõikehõlmav ülevaade hundi ja lamba kultuurisemiootikast. Kaks silmatorkavamat hundi kohta käivat sümboolse

kujundi kategooriat puudutavad vägivalda (salasepitsused ja taltsutamatu nälg) ja seksi (ning võrgutamist). Shakespeare'i töödes on hunt (teiste seas) kehastunud nälg – kiskjalik nälg – puhas nälg. Lamba märgilisus tuleneb eriti Piiblis suuresti tema vastandamisest hundiga. Järgnevas alajaotuses käsitletakse Næssi hundimajandamise filosoofiat, järeldades, et Næss ei pakkunud välja konkreetset lahendust Skandinaavia hundikaitse probleemile. Järgmine alajaotus puudutab argade loomade invasiivset majandamist ning muuhulgas tegeletakse siin ka inimese objektidega hundi omailmas. Viimane alajaotus keskendub Suure Halva Hundi sümboolsele konstrueerimisele tänases Norras. Väidetakse, et inimese ettekujutus huntidest on suures plaanis lahutatud ökoloogilisest reaalsusest. Lamba sümboolsus on Norra kontekstis seotud avatud maastikega, mida peetakse Norrale tüüpiliselt omasteks. Lamba sümboolsust seostatakse edukalt välikarjamaade sümboolsusega ning ettekujutusega, et Norra maastikud kasvavad kinni.

Osa *6. Järeldused ning edasine areng* (mis järgneb 5. osa artiklikokkuvõtetele) algab teoreetiliste leidudega. Omailma muutust ei saa *võrdsustada* keskkonnamuutusega tavamõistes, sest tegu on nii bioloogias (olgu see siis arenguline või evolutsiooniline) kui kultuuriuuringutes rakendatava laia mõisega. Üks selles väitekirjas visandatud omailmateooria ja metodoloogia probleem on, et see on superorganismide analüüsiks ebapiisav. Selle puudujäägiga tegelemiseks visandatakse edasised kontseptuaalsed arengud. Pakutakse välja mõned üldisemad juhised fenomenide väljade kohaldamiseks ning väidetakse, et empiirilistes bioloogilistes uuringutes peavad hästi töötavad visuaalsed representatsioonid olema juhtumispetsiifilised. Visandatakse inimese omailma kolmetine mudel (mida võib rakendada koos fenomenide väljadega ning üldistada nii, et seda saaks rakendada loomadele üldiselt). Eelviimases alajaotuses tutvustatakse kolme omailma stsenaariumi tuleviku Norra hundiökoloogia ja lambakasvatuse tarbeks: 1) *status quo* poliitika; 2) hunte pole; 3) taaselustatud põllumajandus. Viimases alajaotuses väidetakse, et tuleviku hundi märgilisus oma negatiivsetes aspektides, mis Norra kontekstis peegeldab põllumajanduslikke arenguid, määrab hundikaitse tulevikuväljavaated. Võimud on alahinnanud märgilisuse jõudu ja rolli karnivooride poliitikas. Poliitilistes terminites on sügav erinevus, kas läheneda Norra hundimajandamisele süva või pealispindsel viisil (Næss 1973). Ükskõik, kuidas me otsustame hundikaitse küsimusele majandamismeetodite jmt kaudu läheneda, oleme määratud läbikukkumisele, kui teised oulised ühiskondlikud arengud ei kulge sobivas suunas. Kui pealiskaudne lähenemine eeldab igale "keskkonnaprobleemile" otse ja ilma kontekstita lähenemist, peab süvalähenemine sisaldama iga probleemi kontekstualiseerimist ning seejärel tegelema terve hulga asjadega, mis on ühel või teisel moel sellega seotud (isegi kui seda teha vaid nõrga semiootilise kausaalsuse kaudu).

Artiklite kokkuvõtted
Selle doktoritöö kõik artiklid on kirjutanud Morten Tønnessen ning need on avaldatud ajavahemikus 2009–2011, neli neist artiklitena akadeemilistes aja-

kirjades (artikkel I, artikkel II, artikkel V ja artikkel VI) ning kolm raamatu-peatükkidena (artikkel III, artikkel IV, artikkel VII).

Artikkel I   Morten Tønnessen 2009. **Umwelt transitions: Uexküll and environmental change [Omailma muutused: Uexküll ja keskkonnamuutused].** *Biosemiotics* 2(1): 47–64.

Selle artikli keskmes on "omailma muutused" ehk uexülliaanliku keskkonna-muutuse mõiste. Artiklis kritiseeritakse Uexexternal omailmateooria metodoloo-gilist ja teoreetilist mitte-ajaloolisust. Näidatakse, et eeldus nagu keskkond (sealhulgas selles elavad liigid) oleks üldjoontes stabiilne, ei pea paika. Teine artikli läbiv mõiste on *uexülliaanlik fenomenoloogia*. Seda iseloomustab eeldus, et kogu elusale on universaalselt omane esimese isiku perspektiivi ehk kogetud maailmade olemasolu. Artiklis näidatakse, et selle omailmateooria erpära tunnustamine on oluline nii ökofenomenoloogia kui biosemiootika jaoks. Biosemiootika saab seega edasi areneda vaid tõelise *olemise semiootikana* ning mitte pelga "funktsioneerimise semiootikana". Artikkel annab lühiülevaate Uexküllist ja fenomenoloogiast, kokkuvõtliku ülevaate mõningatest kaas-aegsetest makro-evolutsiooni alastest avastustest ning lõpeb aruteluga omailma-teooria kui uexülliaanliku fenomenoloogia ontoloogiliste ja epistemoloogiliste väljavaadete üle.

Artikkel II   Morten Tønnessen 2010. **Steps to a semiotics of being [Sam-mud olemise semiootika poole]**. *Biosemiotics* 3(3): 375–392.

Artikkel visandab olemise semiootika platvormi kümnes jaos. Need kümme punkti võtavad suures osas kokku autori käimasoleva uurimistöö. Lühidalt on nende sisuks: 1) indiviidi roll olemise semiootikas; 2) lõpptulemusel eksis-tentsiaalsele vallale viitav omailma mõiste; 3) *eksistentsiaalsed universaalid* (s.t. tunnused, mis on omased kõigile elusolenditele); 4) omailma seos keelega; 5) uexülliaanlik fenomenoloogia ja selle seos fenomenoloogide David Abrami ja Ted Toadvine'iga; 6) ülesanne portreteerida *fenomenide maailma loodus-lugu;* 7) *omailma kaardistamise* tungiv vajadus kaasajal; 8) ökoloogilise kriisi juured loomade ja taimede kodustamises; 9) globaliseerumine, mis väljendub vastavates semiootilise mitmekesisuse ja mitmekesistumise hävimise suundu-mustes; 10) *semiootilise majanduse* tulevikuvaldkond. Artikkel käsitleb esseist-likult Keele, Majanduse ja Looduse "suuri süsteeme" ning väärtust looduses (osalt fiktsiooni rolli näitel loodusteaduses), lisaks lahatakse kirjutises omailma terminoloogiat ning omailma kaardistamist.[68]

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[68] Lk. 384 on sattunud kahetsusväärne viga (järgnevalt rõhutatud) lauses: "Omailm (ja siseilm), funktsiooniring ja kontrapunktilised suhted (Kontrapunktischen *Verhalten*) on kõik seotud mõisted." 'Verhalten' tähendab saksa keeles käitumist, õige sõna on 'Verhältnisse' (suhted).

Artikkel III   Morten Tønnessen 2011. **Semiotics of being and Uexküllian phenomenology [Olemise semiootika ja uexkülliaanlik fenomenoloogia]**. In: Anna-Teresa Tymieniecka (ed.): *Phenomenology/Ontopoiesis Retrieving Geo-Cosmic Horizons of Antiquit*y (= *Analecta Husserliana* CX/110), 327–340.

Artikkel käsitleb kokkuvõtlikult olemise semiootikat ja uexkülliaanlikku semiootikat. Olemise semiootikat iseloomustatakse kui märkide uurimist moel, mis rõhutaks elunähtuste reaalsust. Artiklis seotakse uexkülliaanlik fenomenoloogia Peter Wessel Zapffe (1899–1990) ökoeksistentsialismiga, ökofenomenoloogiaga (s.h. David Abram ja Ted Toadvine) ning põgusalt ka erinevate looduse semiootika harudega (biosemiootika, ökosemiootika, zoosemiootika). Paari märkuse kaudu viidatakse uexkülliaanliku fenomenoloogia ja Anna-Teresa Tymieniecka 'elu fenomenoloogia' sarnasustele ning esimese erinevusele Peirce'i 'faneroskoopiast'. Ideed fenomenidest kui semioosi kihistusest illustreerib näide koomik Larry Davidist ja teda rünnanud puugist. Lõpumärkustes, milles puudutatakse ka inimvabaduse teemat, väidetakse, et filosoofia ja loodusteaduste vahel ei saa teha teravat eristust, vaid pigem on tegu pideva üleminekuga rohkem või vähem filosoofiliselt/üldiselt rohkem või vähem teaduslikule/spetsiifilisele. See järeldub uexkülliaanliku fenomenoloogia pluralismist ning rõhust elusolendite eripärade uurimisele.

Artikkel IV   Morten Tønnessen 2011. **Mapping human impact: Expanding horizons – interdisciplinary integration [Kaardistades inimmõju: Laiendades horisonte – interdistsiplinaarne lõimumine]**. In: Tiina Peil (ed.): *The Space of Culture – the Place of Nature in Estonia and Beyond* (= *Approaches to Cultural Theory* vol. 1), Tartu: Tartu University Press, 93–106.

Peatükk lahkab küsimust, kuidas kaardistada mõju, mida inimkond avaldab üleilmselt ökosüsteemidele (või pigem ökosüsteemides). Põhiliikumine tekstis toimub "mina" juurest maailma poole ning artiklis väidetakse, et seda, kuidas inimeste "minad" praktiliselt hargnevad teiste maailma, on võimalik Uexexternal terminoloogiat aluseks võttes kujundlikult esitada koondatud numbrilise keskkonnainfo kvalitatiivse analüüsi kaudu. Artiklis esitatakse kolm joonist, mis kõik sisaldavad *ontoloogilisi kaarte* (vt märkust alternatiivse esituse kohta "suhtepõhine omailmakaart" ptk-s 3.1. *Brocki fenomeniväljade visuaalsed representatsioonid*). Üks neist kaartidest (Joonis 1) puudutab laias laastus inimeste ja loomade vahelisi traditsioonilisi suhteid. Peatükis arutletakse kvalitatiivsete ja kvantitatiivsete uurimuste üle (erilise rõhuga biosemiootilisel lähenemisel), võrreldakse *ökoloogilise jalajälje* mõistet ja autori enda väljapakutud *ontoloogilise niši* (esmakordselt kasutatud Tønnessen 2003) mõistet, ning pakutakse välja lihtsustatud viis numbrilise info kvalitatiivseks tõlgendamiseks.

Artikkel V   Morten Tønnessen 2010. **The global species [Globaalne liik]**. *New formations: a journal of culture/theory/politics* 69 (Special Issue guest-edited by Ashley Dawson, *Imperial Ecologies*): 98–110. Featured as additional content in *Encyclopaedia Britannica* (www.britannica.com).

Artiklis vaadeldakse ajaloolist globaliseerumisprotsessi seoses inimese ja temaga seotud liikide poolt planeedi koloniseerimisega. Arutletakse, et globaalse "koloniaalse organismi" teke tähendab ökoloogilise impeeriumi sisse-seadmist, milles *Homo sapiens* asetub hierarhias kõrgeimale kohale ning tera-viljad, lemmikloomad ning kariloomad on privilegeeritud seisuses. Maastikku on muudetud selliselt, et see suudaks tagada nende liikide kiire leviku, tehes eluvormide globaalse geograafilise leviku üha lihtsamaks. Seejuures oleme meie liigina loonud ka globaalse paljunemispinnase teistele liikidele, kes muidu poleks globaalselt levida suutnud. Artiklis arutletakse kapitalismi ökoloogia, biosemiootika poliitika ning globaliseerumise ökosemiootika üle. Süsteemne ülevaade antakse ka olulisemate kariloomaliikide globaalsest levikust. Samuti tehakse kokkuvõte terjaviljaliikide üleilmsest levikust, globaalsete andmete puudulikkuse tõttu katkendlikum kokkuvõte lemmikloomade üleilmsest jaotumusest ning tõstatatakse küsimus, kui palju on miljoni-kassi ja miljoni-koera linnasid. Artiklis lahatakse ka globaliseerumise alguse küsimust, mis on visandatud nelja järjestikuse lainena: 1) inimeste üleilmne kohalolu; 2) inime-sega seotud liikide kohalolu; 3) inimjuhtimine (meie administratiivne haardeulatus); 4) kasvumajandus. Lähtudes Bangkoki näitest, on maakasutuse kontekstis võtmehüpoteesiks, et meie globaalne tsivilisatsioon on koondunud linnaasulate piirkonda, nii et ökoloogiline ruum jaotub korduvate kontsentriliste ringidena linnaasulaks – maa-asulaks – tühermaaks.

Artikkel VI   Morten Tønnessen 2010. **Wolf land [Hundi maa]**. *Bio-semiotics* 3(3): 289–297.

Artiklis kasutatakse mõistet *hundimaa* kui kahemõttelist terminit, mis viitab "hundi maale" nii hundi perspektiivist kui ka inimese perspektiivist. Esitatakse Skandinaavia hundipopulatsiooni üldine olukord, keskendudes kitsamalt Norra hunte puudutavatele vastuoludele. Nende loomade uurimisobjektiks valimist põhjendatakse järgnevalt: 1) hundid on kohanemisvõimelisemaid imetajaid Maal – sellest annab tunnistust tänane koeratõugude *(Canis familiaris)* suur mitmekesisus; 2) hundiliigi majandamine on enamasti vastuoluline, seda ka muidu rahulikus Skandinaavia kontekstis, kus see on aluseks sümboolsele võit-lusele ruraalsete traditsionalistide ja looduskaitsjate vahel, keda avalikkus seostab valitsus- ja linnaeliidiga; 3) tänast Skandinaavia hundipopulatsiooni seiret ja uuringuid on teostatud põhimõtteliselt selle algusaegadest saati – seetõttu on olemas ka rikkalik teaduslik materjal sel teemal. Artikli teises pooles seostatakse praegune hundiökoloogia artiklis välja pakutud hundimaa mõistega s.t. ruumilise käitumisega. Artikli viimases osas tuuakse välja muutuvad tegurid tänases Skandinaavia hundi ökoloogias selle semiootilist nišši ja ontoloogilist nišši silmas pidades. Lõpukommentaaris puudutatakse tänasel päeval vastu-

olulist metsiku looduse mõistet. Pakutakse välja, et oluline pole mitte küsimus, kas inimene on looduse osa, vaid milline on meie suhete täpne iseloom looduses. Teisisõnu ei peaks me mitte küsima, kas inimeste artefaktid on looduslikud või mitte, vaid mil määral nad esinevad ka teiste elusolendite omailmaobjektidena.

Paper VII Morten Tønnessen 2011. **I, wolf: The ecology of existence [Mina, hunt: Olemise ökoloogia]**. In: Ane Faugstad Aarø and Johannes Servan (eds.): *Environment, Embodiment and Gender*, Bergen: Hermes Text, 315–333.

Artiklis käsitletakse kahte teemat: hundi olemust ja inimese olemust. Need kaks teemat on kahel põhjusel metodoloogiliselt problemaatilised – inimese loomus, kuna me oleme *teema,* mida uurima asutakse ning millele seetõttu kallutatult läheneme; hundi olemus, kuna me *ei ole* hundid ja ei saa seetõttu vahetult teada, mida tähendab hundiks olemine. Arutelu on jaotatud viide ossa, millest esimesed kolm tegelevad vastavalt hundi ja lammaste poliitikaga (Skandinaavia kontekstis), *ökoloogise võõrandumisega* ja *eripärase olemisega* vis-à-vís *jagatud olemisega* (mõeldud komplementaarsete tähistustena, mis on rakendatavad nii inimestele kui teistele elusolenditele). Ökoloogilist võõrandumist võib võtta kui meeleseisundi ja sotsiaalse elu kirjeldust, milles vaatluse all oleva olendi eluilma olulised koostisosad kas puuduvad või tajutakse ja koheldakse neid ebaloomulikul moel. Artiklis väidetakse, et selline võõrandumine korreleerub ebanormaalselt madala (metsiku looduse) ja ebanormaalselt kõrge (kariloomade) populatsioonitihedusega. Tänane Skandinaavia hundipopulatsioon on vähemalt aeg-ajalt allunud säärasele kirjeldusele. Kui ökoloogiline võõrandumine eelneb järk-järgulisele väljasuremisele või toimub see taasasustamise faasis, on tegu üleminekunähtusega. Artikli neljanda osa pealkiri on "Inimene ei ole märk" ning selles lahatakse *antropotsentristlikku viga,* s.t. (väära) arusaama, nagu inimtegelikkus olekski kõik. Me tavatseme mõelda keele terminites ja keele terminites on kõik keel – kõik on inimlik. Artikli viimane osa kannab pealkirja "Otsides hundi perspektiivi" ning sisaldab Polaarloomaaia huntidele rakendatuna Sartre'i 1958 a. kuulsa lõigu parafraasi. Puudumise ja tähendusetuse reaalsus loomade elus tuleb siin taas kord välja. Selles mõttes annab peatükk oma panuse biosemiootilise suunitlusega eksistentsiaalsesse semiootikasse.

PUBLICATIONS

CURRICULUM VITAE

Morten Tønnessen

Date and place of birth:	March 22, 1976, Stavanger (Norway)
Citizenship:	Norwegian
Residence permits:	Estonia (2006–2011), Brazil
Academic blog:	http://UtopianRealism.blogspot.com
Email:	mortentoennessen@gmail.com

Education

1992–1995   Kristiansand Katedralskole (Norway) – upper secondary school.

1995–2003   University of Oslo (Norway). Cand. Phil. (comparable to MA, but 6 years, not 5) in 2002, with the thesis *Umweltforskning og ontologi: Skisse av en bio-ontologi basert på Jakob von Uexkülls Umwelt-lære* [Umwelt research and ontology: Sketch of a bio-ontology based on the Umwelt theory of Jakob von Uexküll] – supervisor: Nils Roll-Hansen. The philosophical degree includes a one-year study in literature and in "science of religion", and minor specialisations in environmental ethics/ philosophy and ontology (supervisors: Jon Wetlesen, Inga Bostad). Additional credits in 2003 (demography, social psychology).

1998–2009   Attended university courses informally at Charles University – Prague (literature, 1998–1999), University of Oslo (ethology, 2001), University of Tartu (various, 2006–2009).

2007–2011   PhD student at Department of Semiotics, University of Tartu – supervisor: Kalevi Kull; consultant supervisor: Winfried Nöth (Universität Kassel/Catholic University of São Paulo).

Academic employment and teaching

2001   Group teacher (ethics), Department of philosophy, University of Oslo, spring.

2003   Facilitator of philosophical study group at Holmlia, Oslo muni-cipality – consisting of psychiatric patients under rehabilitation. About a dozen encounters.

2007–2008   Teacher, along with Riin Magnus and Paul McLaughlin, for the seminar "Ecosemiotics and Ecophilosophy", Department of Semiotics, University of Tartu, autumn.

2009   Lecturer at University of Agder in history of philosophy (Examen Philosophicum), autumn.

2009–2010	Research assistant/advisor for the Norwegian (University of Agder) research project "Multimodality, literacy and learning" (MULL), 2009–2010.
2010	Teacher for the text seminar in "Antikkens filosofi" [Philosophy in antiquity], Department of religion, philosophy and history, University of Agder (Norway), autumn (6 classes à 3 hours).
2009–2011	Examiner (sensor) at University of Stavanger (Norway) – Examen Philosophicum.
2011	Teacher for the seminar "Semiotics and phenomenology", Department of Semiotics, University of Tartu, spring.

Participation in research projects

2007–2009	Partaking in the research project Methods of Biosemiotics (Estonian Science Foundation grant no. 6669), starting July 1st 2007.
2008–2010	Main researcher in the research project The Cultural Heritage of Environmental Spaces: A Comparative Analysis between Estonia and Norway (grant no. EEA–ETF Grant EMP 54), ending September 30th 2010.
2009–2012	A principal investigator in the research project Dynamical Zoo-semiotics and Animal Representations (Estonian Science Foundation ETF/EST grant no. 7790).
2010–2011	Senior personnel in the research project Biosemiotic Models of Semiosis (Estonian Science Foundation grant no. 8403).

Organising of international conferences and workshops

2008	– What's Wrong with Nature? An Interdisciplinary Seminar Investigating Human Perceptions of Nature and Environmental Change, Tartu – January 25–26th
2009	– The Ecology of Perception: Landscapes in Culture and Nature, Tartu – February 6–7th
	– Animal Minds, Tartu – February 9–10th
2011	– Zoosemiotics and Animal Representations, Tartu – April 4–8
	– Shared Worlds – Oslo Minding Animals Pre-Conference Lecture event, Oslo (Norway), October 14–15

Elected positions and appointments

2010–	– Member of the editorial board of *Biosemiotics*
2011–	– Secretary of the Nordic Association for Semiotic Studies
	– National representative for Norway in the Nordic Association for Semiotic Studies

– Chair for (and founding member of) Minding Animals Norway
– Minding Animals Norway Alternative Representative in Minding Animals International's Board of Directors
– Member of the board (and founding member) of "Arne i 100", an NGO celebrating the 100 year anniversary of philosopher Arne Næss (1912–2009)

Presentations at international conferences etc.

2007 – 9th World Congress of Semiotics, Helsinki (Finland)
– 7th Annual International Gathering in Biosemiotics, Groningen (The Netherlands)
– Finnish-Estonian Semiotics Seminar ("Currents in European Semiotics"), Tartu
2008 – What's Wrong With Nature? An Interdisciplinary Seminar Investigating Human Perceptions of Nature and Environmental Change, Tartu
2009 – The Ecology of Perception: Landscapes in Culture and Nature, Tartu
– Animal Minds, Tartu
– IARU congress: Climate Change: Global Risks, Challenges and Decisions, Copenhagen (Denmark)
– 9th Annual International Gathering in Biosemiotics, Prague (The Czech Republic)
– First World Congress on Environmental History, Copenhagen (Denmark)
– 10th World Congress of Semiotics/X Congreso Mundial de Semiótica, A Coruña (Spain)
– CECT conference: "Spatiality, Memory and Visualisation of Culture/Nature Relationships", Tallinn
2010 – 52nd Research Seminar of the Scandinavian Research Council for Criminology, Hønefoss (Norway)
– 10th Annual International Gathering in Biosemiotics, Braga (Portugal)
– 60th International Congress of phenomenology, Bergen (Norway)
– Kriminalpolitisk seminar (seminar series), Oslo (Norway)
– Annual Research Seminar of SKANDULV (the Scandinavian wolf project), Strömsberg (Sweden)
2011 – International Collaborative Workshop: The History, Philosophy and Future of Ethology, Sydney (Australia)
– Zoosemiotics and Animal Representations, Tartu
– Seventh Conference of the Nordic Association for Semiotic Studies, Lund (Sweden)
– 11th Annual International Gathering in Biosemiotics, New York (USA)
– Sixth Conference of the European Society for Environmental History, Turku (Finland)

ELULOOKIRJELDUS

Morten Tønnessen

Sünniaeg ja -koht: 22.03.1976, Stavanger (Norra)
Rahvus: norralane
Elamisload: Eesti (2006–2011), Brasiilia
Akadeemiline blogi: http://UtopianRealism.blogspot.com
E-mail: mortentoennessen@gmail.com

Haridus

1992–1995 Kristiansand Katedralskole (Norra) – keskharidus

1995–2003 Oslo ülikool (Norra). Cand. Phil. (võrreldav M.A. kraadiga, kuid õpingud kestavad 5 aasta asemel 6 aastat) 2002 a. kaitstud töö *Umweltforskning og ontologi: Skisse av en bio-ontologi basert på Jakob von Uexkülls Umwelt-lære* (Omailmauuringud ja ontoloogia: bio-ontoloogia visand lähtudes Jakob von Uexexternal omailmateooriast) – juhendaja: Nils Roll-Hansen. Filosoofiakraad hõlmab üheaastast kirjanduse ning religiooni-teaduse õpet ning spetsialiseerumist keskkonnaeetikas/filo-soofias ja ontoloogias (juhendajad: Jon Wetlesen, Inga Bostad). Lisapunktid aastal 2003 (demograafia, sotsiaalpsühholoogia)

1998–2009 Osalesin mitteametlikult Praha ülikooli kursustel Prahas (kir-jandus, 1998–1999), Oslo ülikoolis (etoloogia, 2001), Tartu ülikool (erinevad kursused, 2006–2009)

2007–2011 Doktorantuur Tartu ülikooli semiootika osakonnas – juhendaja Kalevi Kull; konsultant Winfried Nöth (Kasseli ülikool/ São Paulo katoliiklik ülikool)

Akadeemiline teenistuskäik

2001 Õpetaja (eetika) Oslo ülikool, Filosoofia osakond, kevad

2003 Filosoofia õppegrupi juhendaja Holmlias, Oslo omavalitsuses, osalejateks psühhiaatriapatsiendid, u 12 kohtumist

2007–2008 Õpetaja, koos Riin Magnuse ja Paul McLaughliniga, seminar "Ökosemiootika ja ökofilosoofia" Tartu ülikool, Semiootika osakond, sügis

2009 Filosoofia ajaloo lektor Agderi ülikoolis (Examen Philo-sophicum), sügis

2009–2010 Assistent/ juhendaja Norra (Agderi ülikooli) uurimisprojektis "Multimodaalsus, kirjaoskus ja õppimine" (MULL), 2009–2010.

2010	Õpetaja tekstiseminaris "Antikkens filosofi" [Antiikfilosoofia], Agderi ülikool (Norra) Religiooni, filosoofia ja ajaloo osakond, sügis (6 seminari à 3 tundi).
2009–2011	Eksamineerija Stavangeri ülikoolis (Norra) – Examen Philosophicum
2011	Õpetaja seminaris "Semiootika ja fenomenoloogia", Tartu ülikool, Semiootika osakond, kevad

Osalemine uurimisprojektides

2007–2009	Osalemine uurimisprojektis Biosemiootika meetodid (ETF projekt nt 6669), algus 1.07.2007.
2008–2010	Põhitäitja uurimisprojektis Keskkonnaruumide kultuuripärand: Eesti ja Norra võrdlev analüüs (projekt nr. EEA – ETF projekt EMP 54), lõpp 30.09.2010.
2009–2012	Põhitäitja uurimisprojektis Dünaamiline zoosemiootika ja loomade representatsioonid (ETF/EST projekt nr 7790).
2010–2011	Põhitäitja uurimisprojektis Semioosi biosemiootilised mudelid (ETF projekt nr. 8403).

Korraldatud rahvusvahelised konverentsid ja töötoad

2008	– Mis on lahti loodusega? Interdistsiplinaarne seminar inimese loodustajust ja keskkonnamuutustest, Tartu, 25.–26. jaanuar.
2009	– Taju ökoloogia: maastikud kultuuris ja looduses, Tartu, 6.–7. veebruar.
	– Looma meeled, Tartu, 9.–10 veebruar
2011	– Zoosemiootika ja loomade representatsioonid, Tartu, 4.–8. aprill
	– Jagatud maailmad – Oslo *Minding Animals* konverentsieelne loengu-üritus, Oslo (Norra), 14.–15. oktoober

Teadusorganisatsiooniline tegevus

2010	– Ajakirja *Biosemiotics* toimetuskolleegiumi liige
2011	– Põhjamaade semiootika assotsiatsiooni sekretär
	– Norra rahvuslik esindaja Põhjamaade semiootika assotsiatsioonis
	– *Minding Animals Norway* esimees ja asutajaliige
	– *Minding Animals Norway* lisaesindaja *Minding Animals* rahvusvahelises juhatajate kolleegiumis
	– Juhatuse liige (ja asutajaliige) "Arne i 100", MTÜ, mis tähistab Arne Naessi 100 sünniaastapäeva (1912–2009)

Ettekanded rahvusvahelistel konverentsidel ja seminaridel

2007 – 9. Semiootika maailmakongress, Helsinki (Soome)
– 7. Biosemiootika rahvusvaheline konverents, Groningen (Holland)
– Soome-Eesti semiootikaseminar ("Euroopa semiootika suundumused"), Tartu
2008 – Mis on lahti loodusega? Inimese loodustaju ja keskkonnamuutuste teemaline interdistsiplinaarne seminar, Tartu
2009 – Taju ökoloogia: Maastikud kultuuris ja looduses, Tartu
– Looma meeled, Tartu
– IARU kongress: Kliimamuutused: Globaalsed riskid, väljakutsed ja otsused, Kopenhaagen (Taani)
– 9. rahvusvaheline biosemiootika konverents, Praha (Tšehhi vabariik)
– 1. keskkonnaajaloo maailmakongress, Kopenhaagen (Taani)
– 10. semiootika maailmakongress/X Congreso Mundial de Semiótica, A Coruña (Hispaania)
– Kultuuriteooria Tippkeskuse konverents: "Ruumilisus, mälu ja kultuuri/looduse suhete visualiseerimine", Tallinn
2010 – 52. Skandinaavia kriminoloogia teadusnõukogu uurimisseminar, Hønefoss (Norra)
– 10. rahvusvaheline Biosemiootika konverents, Braga (Portugal)
– 60. rahvusvaheline Fenomenoloogia kongress, Bergen (Norra)
– Kriminalpolitisk seminar (seminari seeria), Oslo (Norra)
– Uurimisseminar SKANDULV (Skandinaavia hundi projekt), Strömsberg (Rootsi)
2011 – Rahvusvaheline töötuba: Etoloogia ajalugu, filosoofia ja tulevik, Sydney (Austraalia)
– Zoosemiootika ja loomade representatisoonid, Tartu
– 7. Põhjamaade semiootika assotsiatsiooni konverents, Lund (Rootsi)
– 11. Rahvusvaheline biosemiootika konverents, New York (USA)
– 6. Euroopa keskkonnaajaloo ühingu konverents, Turku (Soome)

DISSERTATIONES SEMIOTICAE
UNIVERSITATIS TARTUENSIS

1. **М. Ю. Лотман.** Структура и типология русского стиха. Тарту, 2000.
2. **Елена Григорьева.** Эмблема: структура и прагматика. Тарту, 2000.
3. **Valdur Mikita.** Kreatiivsuskäsitluste võrdlus semiootikas ja psühholoogias. Tartu, 2000.
4. **Ирина Аврамец.** Поэтика новеллы Достоевского. Тарту, 2001.
5. **Ян Левченко.** История и фикция в текстах В. Шкловского и Б. Эйхенбаума в 1920-е гг. Тарту, 2003.
6. **Anti Randviir.** Mapping the world: towards a sociosemiotic approach to culture. Tartu, 2004.
7. **Timo Maran.** Mimikri kui kommunikatsiooni-semiootiline fenomen. Tartu, 2005.
8. **Элеонора Рудаковская-Борисова.** Семиотика пищи в произведениях Андрея Платонова. Tartu, 2005.
9. **Andres Luure.** Duality and sextets: a new structure of categories. Tartu, 2006.
10. **Peeter Linnap.** Fotoloogia. Tartu, 2006.
11. **Daniele Monticelli.** Wholeness and its remainders: theoretical procedures of totalization and detotalization in semiotics, philosophy and politics. Tartu, 2008.
12. **Andreas Ventsel.** Towards semiotic theory of hegemony. Tartu, 2009.
13. **Elin Sütiste.** Tõlke mõiste dünaamikast tõlketeaduses ja eesti tõlkeloos. Tartu, 2009.
14. **Renata Sõukand.** Herbal landscape. Tartu, 2010.
15. **Kati Lindström.** Delineating Landscape Semiotics: Towards the Semiotic Study of Landscape Processes. Tartu, 2011.