From Theory to Practice: the Implementation of Welfare Biology in Rewilding

A Cognitive Framing Perspective

L.J. Bernard

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Radboud University

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COLOPHON

AUTHOR	Laura Justine Bernard
STUDENT NUMBER	s1005580
EDUCATION	Master Environment & Society Studies
SPECIALIZATION	Global Environment and Sustainability
EMAIL	l.bernard@student.ru.nl

INSTITUTION	Radboud University Nijmegen
SUPERVISION	Mark Wiering
EMAIL	m.wiering@fm.ru.nl
SECOND READER	Ingrid Visseren
EMAIL	i.visseren@fm.ru.nl

Radboud Universiteit Nijmegen

ABSTRACT

The present study was conducted to understand what effects cognitive frames have on the conception and implementation of welfare biology in rewilding projects. With this aim in mind, an explorative case study was used whereof three rewilding projects were studied and compared. The qualitative data collection consisted of fifteen interviews enriched by a document analysis. Findings show that views and practices of rewilding are directly influenced by cognitive framing through the manifestation of different visions of nature (e.g. character of bond and positionality) at different levels and different mediums. The interactions between these mediums can result in cognitive tensions and have been identified as determinants to managerial practices. It led to the conclusion that there is a causal relation between visions of nature and the action repertoire of decisionmakers and managers. Moreover, the analysis of the rewilding areas revealed a fertile ground for the development of welfare biology and the adjustment of practices towards increased accountability of wild animal suffering. On a grand scale, the reassessment of rewilding practices can contribute towards a change in the conservation paradigm. Whilst more academic research is needed for welfare biology to become an established discipline, a key element lies in the collaboration between local people, conservationists, authorities and policymakers.

KEYWORDS

ACKNOWLEDGMENTS

TABLE OF CONTENTS

CHAPTER 1: INTRODUCTION

1.1. Research background

It is now clear that we have entered an epoch where going back is not an option. According to the IPBES[1], about 1 million species are threatened with extinction (2019), leading scientists to call it "sixth mass extinction" in Earth's history. The five main drivers of this worldwide biodiversity loss are (1) changes in land and sea use; (2) direct exploitation of organisms; (3) climate change; (4) pollution and (5) invasive alien species (IPBES, 2019). With a growing population (total population is expected to be around 9.8 billion in 2050 according to a 2017 UN estimation) and higher demands on nature, the pressures on ecosystems will only increase whereas animals are already affected in many ways by ocean acidification, resources depletion and extreme climate changes (e.g. heatwaves, heavy rains, storms). Experts have also observed abnormal shifts in behaviors such as migration patterns or seasonal activities, attributed with high confidence to anthropogenic drivers (IPCC, 2014; WWF, 2016).

In this context, environmentalists and conservationists are on the forefront. A recent conservation technique has gained interest among practitioners as well as spatial planners: rewilding. As the word suggests, rewilding aims at 'making wild again'. Despite notable differences between how the term is employed and put into practice (Jørgensen, 2015; Gammon, 2018), the core elements are ecological restoration and species reintroduction and/or reinforcement. Ecological restoration, according to the Society for Ecological Restoration (n.d), is the "process of assisting the recovery of an ecosystem that has been degraded, damaged, or destroyed". It focuses on lost ecosystems services that sustain life e.g. nutrients, oxygen and freshwater production (Soulé & Noss, 1998). Another aspect of rewilding is concerned with reconnecting humans to nature in a healthy and sustainable way (Monbiot, 2013). Rewilding projects are now taking on virtually every continent except Antarctica. In Europe, the organization Rewilding Europe has initiated and coordinates no less than eight large-scale projects which involve the reintroduction of hundreds of large herbivores. In parallel a considerable number of local initiatives have bloomed over the years.

Besides, social and political interest for the animal cause has remarkably increased the past decades (Bayvel & Cross, 2010; Donaldson & Kymlicka 2014). Animal rights are taken more and more seriously, be it in the academic domain, the nonprofit world or among citizens. Worldwide, legislation to protect nonhuman animals and their natural environment has become common sense but paradoxically, the number of captured,

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[1] Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services

enslaved and exploited animals has never been so high, reaching trillions (Cudworth, 2015; Linzey et al., 2018).

Concurrently, a new discipline has emerged at the turn of the 21st century: welfare biology. This discipline bears a specific focus on the welfare of animals in their natural habitat, wild animals in particular. It goes beyond ethology and zoology in focusing on the wellbeing of sentient individuals and getting an accurate account of the quality of their lives to be best capable of providing them with help to alleviate their suffering. Welfare biology offers diverse outlooks and applications in natural sciences and also social sciences (Ng, 1995, 2016; Chan et al. 2007; Tomasik, 2015; Faria & Paez, 2015). Its premise holds that the interests of nonhumans are as relevant as our own interests and that no suffering should be disregarded based on the species or the category the animal belongs to.

1.2. Problem statement

Rewilding is becoming more popular and quickly adopted as it seems to offer solutions to a large range of issues such as farmland abandonment, landscape maintenance with minimum intervention, historical defaunation, trophic restoration, etc. On paper indeed, rewilding seems to have many assets: new opportunities for spatial planners, restoration of ecosystems services which means direct benefits for human and nonhuman life, minimal human management, creation of jobs in 'sustainable' sectors such as eco-tourism, reconnection with nature... Authors however, have emphasized several pitfalls: plurality and discrepancy of meanings leading to heterogeneous applications (Jørgensen, 2014; Lorimer et al., 2015; Kopnina, Leadbeater & Cryer, 2019) that can be attributed to (1) the persistent romantic idea of 'pristine nature' (Berg, 2018) and (2) the disagreements about what is to be conserved (Is it a historical landscape? an emblematic species? a cultural heritage? an ecosystem's services?); the exclusion or inclusion of humans (Jørgensen, 2014, Prior & Ward, 2015); different historical benchmarks (Keulartz, 2016); the effectiveness of some aspects e.g. species reintroduction (Reading, Clark & Kellert, 2002; Godefroid et al., 2011) as well as the social consequences (Klaver, Keulartz, van den Belt & Gremmen, 2002; Lorimer & Driessen, 2014).

All these aspects must be seriously addressed if we want rewilding to establish itself as a successful conservation method for the times ahead. Not any less important lies two under-addressed aspects with sizeable ethical dimensions: animal welfare and animal rights. Indeed, a considerable number of animals are subject to conservation efforts and rewilding is no exception. In fact, rewilding relies quite heavily on the breeding, release or translocation of species in order to repopulate a certain area or reinforce an existing population (Berg, 2018; Driessen, 2016). Mortality rates are considerable, be it during capture, breeding or release (Reading, Clark & Kellert, 2002; Robert, 2009). Besides the animals involved in reintroduction program, we also have to examine the situation of the residents of the areas in question.

Some cases of reintroduction have been found to threaten native species, animal or vegetal (Corlett, 2016). Wallach et al. (2018) have reported three common problems: nativism, collectivism and instrumentalism.

Nativism	Belief according which species belong in the geographic regions in which they evolved. Introduced ('invasive') species are therefore considered unwanted, thus justifying acts of cruelty and eradication.
Instrumentalism	Orientation that views and values nonhuman nature and wildlife individuals primarily (or exclusively) for their instrumental value, particularly for human beings.
Collectivism	Orientation that prioritizes entities i.e. ecosystems or populations over their individual constituents.

Table 1: three widespread ethically problematic conservation orientations
(source: author, adapted from Wallach et al., 2018)

1.3. Research aim & research questions

The objective is to study the animal condition in European rewilding projects. On the grounds of prior research, I have formulated the hypothesis that, generally speaking, rewilding projects fail to consistently include animal welfare –therefore welfare biology (Lorimer & Driessen, 2014; Bekoff, 2013; Hampton & Hyndman, 2018). This is either at an earlier stage, i.e. during the design phase (animal welfare is omitted or ignored) or in the implementation.

The following steps will be undertaken:

- Identification and description of the cognitive frames at work at the intersection of rewilding and welfare biology
- Identification and description of managerial practices and obstacles and/or favorable conditions to a sound incorporation of welfare biology at the different stages (conception, implementation) of rewilding projects
- Elaboration of recommendations for practitioners and policymakers

With this research, I have the ambition of prompting a reassessment of rewilding practices so that in the future their founding principles take the interests of nonhumans into consideration. As numerous scholars have pointed, it is crucial to tackle conservation issues from the perspective of nonhumans and drift away from anthropocentrism (Wallach et al., 2018; Crist, 2013; Washington et al., 2018). To do so I examine the foundations and claims of rewilding, contrasting them with animal rights theory (henceforth: ART), and the Capitalocene theory to explore normative implications. To carry out this examination I have chosen Cognitive Framing for both theoretical and analytical purposes. The theories used in this research have been selected not only for their strong critical potential but also because they appear to be complementary and interdependent. They explore how values and prescriptions become refracted through systems of power and privilege in political decision-making and in society.

The research question is: **How is welfare biology conceived and implemented in rewilding projects?** Three subquestions have been formulated:

➢ What is welfare biology and what does it propose?
➢ What cognitive frames do we have about nature –in particular nature preservation?
➢ How is policy implementation being influencing by cognitive frames?

1.4. Relevance

1.4.1. Societal relevance

The most important aspect comes down to a moral imperative to *"voice the voiceless"*. With this I mean ethical considerations of producing academic work that challenges hegemonic norms and dominant viewpoints for a just and fair world. The scale on which humans enforce animal oppression, exploitation and enslavement is gigantic. Our lifestyles, consumption and modes of production have driven habitat destruction, invasive species, population growth, pollution and overharvesting as well as climate change, arguably the biggest challenge of the 21st century –if not human history. While I acknowledge the fact that these are surely problematic for the livelihoods of humans I ought to underline that nonhuman animals are the first harmed (IPBES, 2019). And that is without dwelling on the fate of animals we exploit for food, fur, entertainment (ranging from circuses to recreational fishing and hunting), abduction and trafficking of wild animals to turn into pets, populate zoos or ornament walls. We are in a situation of "systematic infliction of suffering and killing" (Ferrari, 2012). In 2017 no less than 66,566,725,000 billion pigs were slaughtered (FAO, 2017).

This research focuses on the field of conservation, often seen as 'animal-friendly' by default. Because conservation pursues noble goals it is generally seen with a favorable eye (Teel & Manfredo, 2010). Truth is, it not spared by evils. Corruption, greenwashing, whitewashing and other dubious ethics are commonplace (Gibbs, Gore, McGarrell & Rivers, 2010). Besides, conservation and animal welfare do not necessarily go hand in hand. Negligence and moot trade-offs are observed (Kopnina, 2014, 2016b; Rolston, 1992). It cannot be stressed enough that introducing non-anthropocentric modes of thinking are important since people cannot and will not contemplate change if no alternatives are available (Noorgard, 2011).

This research aims at contributing to the elaboration of a new type of governance which policy- and decision-making weighs human and nonhuman interests in a fair way. Societies must reform their legislative and judicial systems to incorporate animal rights theory and address unpunished crimes against nonhumans.

1.4.2. Scientific relevance

The foundation of the scientific relevance is embedded in the advancement and democratization of a divergent type of knowledge. The current scientific knowledge is, in many regards, problematic and, in the context of this research, the biggest one lies in its anthropocentric and speciesist perspective (Haraway, 2004; Meffe, 1992). In the past, theories such as intersectional feminism, ecofeminism or post-structuralism have shed light on the heavy legacy of a scientific knowledge which used to be the privilege of white, educated male and which has actively contributed –and in some cases, sought– to erase feminine, multiracial and queer perspectives, rendering them invisible (Salleh, 1997; Shiva, 1988, Warren, 2000). Same goes for animals (Curry, 2011; Turner, 2009). As a matter of fact, the majority of AR scholars and activists consider that animal rights is the next step we need to achieve after the recognition of rights for children, women, people of color and LGBTQI people (Donovan, 1990; Haraway, 2013; Luciano & Chen, 2015; Nibert, 2002; Regan, 1987).

Rewilding is interesting to look at for a number of reasons. First, its promises are appealing: we can restore lost functional ecosystems and foster biodiversity (Soule & Noss, 1998) with minimal intervention in the processes. Second, the enthusiasm for rewilding is good for its grounding in society (Gammon, 2018). Third, and partly because of its quick resurgence, rewilding lacks the necessary assessment to reflect on its practices. I must be noted however that, if conservation techniques share the same experimental aspects as research on animals does, they are not subject to the same scrutiny (Hampton & Hyndman, 2018). In Europe, the 2010/63 regulates animal testing and research on animals. In order to get an authorization, a researcher must conform to a list a criterion including the 3R (replacement, reduction, refinement), procedures must be detailed and justified to prove the necessity of using animal subjects (European Animal Research Association, 2017).

It is believed that the adoption of welfare biology in conservation would provide both the data and the knowledge-based ethic necessary for the assessment of practices and, subsequently, the development of an independent scientifically designed audit (insofar as, it is impossible to contest or defend practices without evidence). By rejecting speciesism at its core and leaning on evidence of animal sentience and consciousness (Bekoff, Allen & Burghardt, 2002; Griffin, 1992; Parker, Mitchell & Boccia, 1994; Rogers, 2018), welfare biology has the ambition of representing the interests of wild animals. For now, it suffers from a lack of interest as well as a lack of publicity among environmentalists and life scientists. The disregard for the wellbeing on animals can partly explain this. It is therefore of utmost importance to contribute to its development in academia. Welfare biology This represents a is the carrier of numerous future research prospects, proposing several strategies to address animal suffering while paying great attention to the dynamics of the ecosystems and interrogating the place of humans in it. For example, together with the growing phenomenon of urbanization, human-wildlife conflicts (HWC) are on the rise. Welfare biology significantly helps preventing and

mitigating those in urban, suburban or industrial areas. Other examples include the design of animal-friendly devices, building infrastructures to avoid spillover effects of human expansion e.g. roadkill (Treves, Wallace & White, 2009). It can be predicted that, as the interest in welfare biology will grow, we will come up with more ways to peacefully coexist with the nonhuman.

CHAPTER 2: THEORETICAL FRAMEWORK

The chapter starts by presenting the key concepts of the thesis before introducing the Capitalocene theory, Animal Rights Theory, as well as Framing. These three chosen theories have in common the capacity to interrogate, decipher and contest dominant values and normative assumptions about our lifeworld (Salleh, 1997). Moreover, they appear to complement each other, therefore they help to comprehensively cover the topic.

2.1. Concepts

2.1.1. Rewilding

The original use of the term 'rewilding' refers to the Wildlands Projects back in 1991 in the United States, initiated by a group of biologists sharing a deep ecology vision. The goal was to release large predators in vast human-free core areas connected between themselves (Soule & Terborgh, 1999). This became known by the 3C's: Cores, Corridors and Carnivores.
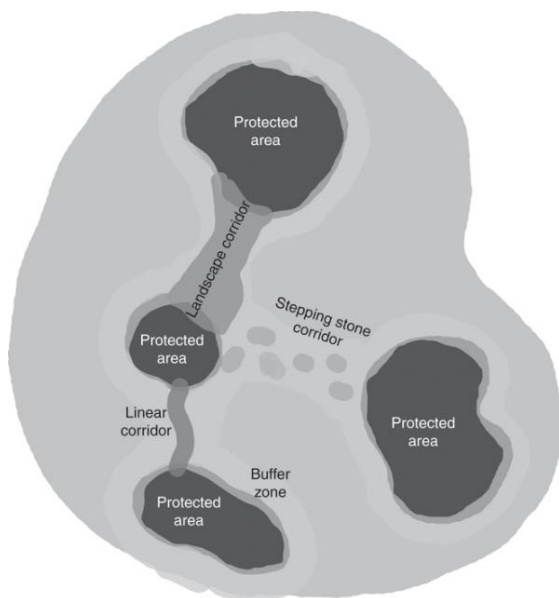
As the opposite figure shows, cores are often constituted of large patches of wilderness, primordial for the viability of carnivores. Corridors can be of different shapes and they act as conduits to enable the movements of animals without risking human contact. A meta-analysis from 2010 shows that a corridor increases individual movements between cores by 50% on average, compared to cores not connected by a corridor (Gilbert-Norton, Wilson, Stevens & Beard, 2010)

Fig. 1 (opposite): Cores (in dark) connected by ecological corridors (source: Bastmeijer, 2016)

For George Monbiot, conservation looks at the past whereas rewilding looks at the future (2013a, 2013b). Nonetheless, the prefix 're' implies a return to a certain state of wilderness estimated satisfactory. Root-Bernstein, Gooden & Boyes (2017) have examined 30 organizations practicing rewilding and clustered them into three main groupings: Those with a focus on (1) ecosystem processes, (2) baselines and (3) conserving large spaces. Unlike other conservation methods, which also promote environmental restoration, rewilding concentrates on restoring non-human autonomy (abiotic & biotic actors as well as processes) through the "gradual relinquishment of direct human management." (Jepson, Schepers and Helmer, 2018 p.2).

Lately, rewilding has emerged in spatial planning as a promising answer to farmland abandonment, a growing phenomenon in Europe. By 2030, 20 million hectares are expected to be released from agricultural use, twice the size of Portugal (Keenleyside, Tucker & McConville, 2010). This decline has both ecological and economic consequences. Conventional farming usually takes a toll on biodiversity through pollution, soil depletion, eutrophication and declination of species because of agrochemicals and/or habitat destruction, e.g. removal of hedges and woodland. In this context, rewilding takes the form of a "passive management of ecological succession with the goal of restoring natural ecosystem processes and reducing human control of landscapes" (Pereira & Navarro, 2015, p. 904). It is also promoted as an opportunity to boost a region's economy thanks to wildlife tourism (Rewilding Europe, 2020).

Summary of reference points in rewilding definitions.

Rewilding definition	Reference time	Geography
Cores, corridors, carnivores	Up to 4000 BP, but most are within last 200 years	North America
Pleistocene mega-fauna replacement	13,000 BP	North America
Island taxon replacement	16th–19th century, depending on specific island	Islands
Landscape through species reintroduction	Before species extirpation	Europe
Productive land abandonment	Up to Neolithic (c.6000 BP)	Europe
Releasing captive-bred animals to wild	When captive population created	Any

Fig. 2: types of rewilding and baselines (source: Jørgensen, 2015)

Rewilding methods sometimes focus more on the species rather than ecosystems. This is the case with reintroduction of bred animals in the wild, which, once left to their fate without human help, will become 'wild' again. The objective is to select a species that can fulfil an ecological function in the ecosystem of implementation. In fact, a lot of projects in Europe focus on bringing back large herbivores "[…] in significant and naturally balanced numbers to the lands they once belonged" (Rewilding Europe, 2017 p.15). Thought as more 'dynamic' than traditional conservation approaches (Keulartz, 2016), a noteworthy difference lies in the degree of intervention, ranging from a complete laissez-faire policy (letting nature reasserting itself via a loose human management) to a proactive approach, in which case species are (re)introduced (cf. 2.1.3).

The problem is that the theoretical background of rewilding is very much entangled with the antagonistic paradigm of nature (Nelson & Callicott, 2008). Back in the 1990s the starting axiom of rewilding was a human-free nature. The idea that wilderness is valuable only if humans are excluded is tied to the romantic vision of wild nature, the same vision that holds that wild animals have idyllic lives despite experiencing a tremendous amount of suffering. Besides, over time, the term has taken various forms revealing different understandings of 'making wild again'. Usage might share the "same ethos" (Lorimer et al., 2015 p.54) but no real consensus exists. Kopnina, Leadbeater & Cryer (2019) argue that the "semantic migration of rewilding has diluted it conceptually such that some of its originally implicit aspects, including ethics and scale, require specification or clarification". Notwithstanding this lack of clarity, rewilding faces other challenges like public resistance, important costs, and implementation issues.

While all these aspects might compromise the successfulness of projects, one dimension remains systematically underrated by practitioners: the welfare of the parties. Indeed, the deliberate release of individual animals into the wild is not without consequences on ecosystems and on the wellbeing of these animals as well as other species already inhabiting the place of release –a problem found in all conservation methods (Noss, 1992; Wallach et al., 2018; Hampton & Hyndman 2018). An Oxford University team assessed 199 conservation programs and found potential welfare issues in no less than two-thirds of them. Common issues concerned mortality, diseases and HWC (Bekoff & Ramp, 2014). Besides, with the influence of advancements in biotechnologies, e.g. gene selection or cloning, proposals to bring back extinct species such as the mammoth, the auroch or the thylacine are multiplying, confronting us to unpredictable outcomes, generating interrogations about human omnipotence and bioethical consequences. All in all, conflicting values and priorities lead to ethical dilemmas that tend to remain unaddressed (Sandøe & Gamborg, 2017). Quite realistically we can predict that rewilding will only get bigger in the future so as to restore lost ecological functions, and provide living spaces, whether recreational for humans or crucial for animals.

2.1.2. Welfare biology

Before anything else, it is essential to define what is understood by welfare biology. The term was coined in 1995 by the scholar Yew Kwang Ng who described it as the "study of living things and their environment with respect to their welfare (defined as net happiness, or enjoyment minus suffering)." (p.255). In that sense welfare biology incorporates knowledge from zoology, ecology, animal welfare science, pathology science but also wildlife management. Although the definition of Ng is rather broad, he dedicated most of its 1995 paper to wild animals whose wellbeing is predominantly ignored. Academics like Horta (2010a, 2010b, 2010c), Palmer (2010, 2015), Paez (2015) or Tomasik (2017) followed on his heels with multiple papers discussing wild animal suffering and interventions in nature. Whilst Ng (1999) admits that welfare biology is certainly influenced by values, for example ethics (and, as I shall demonstrate, the values advanced by ART should inform welfare biology) he insists that the study is itself can perfectly be objective and value-free. Henceforth, welfare biology is highly pertinent to policy prescription.

First and foremost, it must be said that the (political) relevance of animal welfare is firmly dependent on how society sees animal and cares about their well-being (Fraser, 1995; Ohl & van der Staay, 2012). Despite the tremendous advances and victories of animal rights advocates the past century and the increasing recognition of nonhuman animals as intelligent creatures provided with feelings, there is still a lack of consensus amongst people about what is animal welfare. What is a good life for a pet rabbit? Are cats happier when they have access to a garden? Is stress (indicated by high levels of cortisol in the blood) suffering? There is as much questions as there is uncertainty about the wellbeing of sentient animals and in what conditions their quality of life is maximized.

This said, experts agree that animal welfare legislation should be primarily informed by species-specific physiology and ethology (Fraser, Weary, Pajor & Milligan, 1997; Sandøe & Gamborg, 2017). Littin et al. (2014) added the combination of behavioral, pathological and psychological indicators which leaves us with a multi-variable definition that extends beyond the binary of 'good' versus 'bad' welfare. It is therefore not a state or an ability (Mc Inerney, 2004). Nowadays there is increasing consensus that the welfare of nonhuman animals is not only defined by the absence of negative states e.g. disease, injury or hunger but that positive states must be considered too (Mench & Duncan, 1998; Yeates & Main, 2008). Drawing from the five freedoms but progressively refining them in order to get the most accurate definition, Ohl and van der Staay (2017) have come up with the following proposition:

> Freedom to react appropriately and adequately to:
>
> - hunger, thirst or incorrect food
> - thermal and physical discomfort;
> - injuries or diseases;
> - fear and chronic stress, and thus,
> - the freedom to display normal behavioral patterns that allow the animal to adapt to the demands of the prevailing environmental circumstances and enable it to reach a state that it perceives as positive. (p.17)

Bracke, Spruijt & Metz (1999) summarize that "animal welfare is the quality of life as *perceived by the animal itself*" (p.318, emphasis added). It implies that animals are not passive recipients but that they can relate to their state of being and have emotional adaptability (Broom, 2010; Duncan, 1996; Mendl et al., 2010; Myers & Diener, 1995). Just like us, they have needs and desires. They prefer some states over others. In that sense, they have legitimate interests, just like us. (Boissy et al., 2007; Singer, 1975). It is not in the otter's interests to have her river being drained. It is not in the cow's interest to have her offspring taken from her. Yet, we systematically disregard the interests of nonhumans (Donaldson & Kymlicka, 2011). Jamieson (2004) argues that the "failure to value them involves failures of objectivity or impartiality in our reasoning or sentiments" (p.337). He goes on and explain:

> If I fail to value a creature who instantiates a property in virtue of which I matter morally, then the reach and power of my sentiments are in some way defective. (p.338)

But all this information does not make animal welfare less of a conceptual problem; quite the opposite actually because we then realize that, on the one hand, the complexity to measure it and, on the other hand, no matter what, animal welfare is a subset of human welfare and in no case a definitive or independent variable (McInerney, 1993). This is the reason why I have chosen to enrich welfare biology with ART because we can expect that if conflicting interests arise between our preference and the animal's preference, the former is more likely to prevail. He adds that, in the end, no matter how

scientifically informed we are because "so equally may simplistic presumptions, anthropomorphic comparisons, incorrect information and Walt Disney images" (2004, p.21). This remark applies to wildlife. Indeed, there is a largely shared assumption that animals in the wild live 'good' lives, based on the fact that wild animals have free will and make choices (in contrast to domesticated animals) and –especially when not hunted– are not harmed and supposedly live their lives to the fullest. This idyllic view is fundamentally flawed and ignorant. Wild animals are exposed to many risks such as hunger and thirst, diseases, stress, extreme weather conditions and natural disasters (Animal Ethics, 2020). Scientific evidence suggests that many animals start to feel (and, therefore, suffer) around birth time, if not before, including "most amphibians and fish […]" (EFSA, 2005 p.38). Predation, as natural as it is, causes acute stress disorder (Tomasik, 2015).

In this merciless environment it must be noted that some fare better than other. Specialists, as the name suggests, are well-adapted to a specific type of life e.g. diet, habitat. They have high rates of survival and fewer offspring. Generalist species have a very good adaptive capacity which allows them to thrive under any circumstances but on the other hand they have less chances at surviving and, as a result, have many of offspring. As an example, elephants and koalas are specialists; rats and coyotes are generalists. Although it must be borne in mind that there is a continuum between specialist and generalist with most animals not neatly fitting into any group, such distinctions have important implications for conservation and welfare biology. Qualitatively speaking, specialists tend to have better lives than generalists but they are more jeopardized with extinction; in a generalist-prevalent scenario we can assume that the aggregated welfare is rather negative with a lot of animals dying prematurely, often before reaching adulthood (Horta, 2010a; Krebs & Davies, 1993).

Faced with such facts welfare biology scholars differ in their answers. Some advocate intervention (Faria & Paez, 2015; Tomasik, 2017) and even large-scale intervention (McMahan, 2015; Moen, 2016) while others like Palmer (2010) are in favor of a '*laissez-faire* intuition' and argue that we have no duty to help wild animals we do not interact with (or seldomly). Donaldson & Kymlicka (2011) advise caution and endorse precautionary and discretionary arguments vis-à-vis the scale of our interventions in wilderness. In 'Zoopolis' (2011) they introduce a previously unseen new framework for rethinking our relations with animals, starting with the attribution of specific statuses depending on the category of animal: citizenship for domesticated animals, sovereignty for wild animals and denizenship for liminal animals who are living near human populations and depend on them (mice, pigeons, etc.).

In the context of this research we can differentiate two categories:

- animals that are reintroduced by humans
- wild animals living in the chosen ecosystems that are susceptible to be affected in second instance (be it positively or negatively)

For the former, the lack of clarity of their situation as well as the type of care we ought to provide and the applicable situations are argued over (ICMO1, 2005; ICMO2, 2011). The case of the OVP is the perfect example of that. Swart & Keulartz (2011) proposed a generalized model, though only to precise that "every case is bound to its context" (p.194).
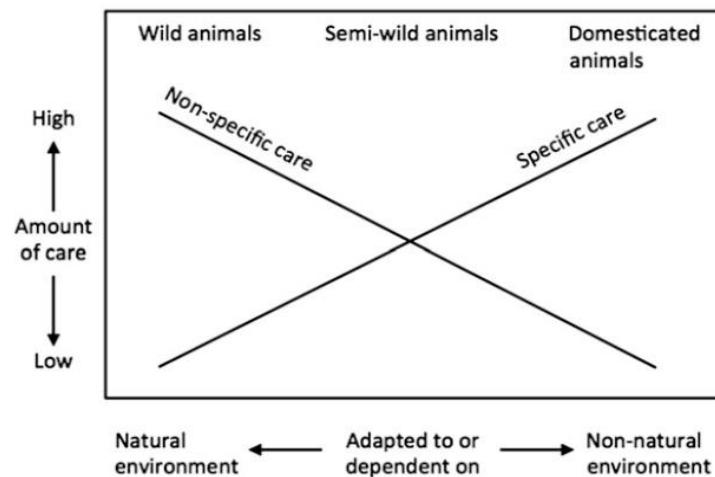
Fig.3: model of specific & non-specific care (source: ICMO2, 2011)

A sure thing is that rewilders expect reintroduced individuals to be fully independent and thriving in their new environment after the adaptation (or acclimatization) period, ranging from 2 to 5 years depending on the species. It means that, as soon as they meet these criteria, individuals may qualify and be considered as wild animals Signs of adaptation can be epigenetic e.g. thicker fur is grown to adapt harsh winters or cultural e.g. learning defensive behavior against predators, learning how to get food. Acclimatization is a factor to evaluate the successfulness of rehabilitation and release programs together with medical and genetic screening, pre- and post-release training, provisioning and monitoring (Kaczensky et al. 2018). Not only this is indispensable to further improve such programs, but it must be done coherently with welfare biology in order to ensure that the individuals are cared-for in accordance to specific physical and psychological needs.

2.2. Theories

2.2.1. Capitalocene

The Capitalocene is a word-concept credited to Jason W. Moore who criticized the Anthropocene, defined by an era where "humans have become the most influential factor in global changes–most notably biodiversity loss, climate change and changes in the earth's fossil record" (Raffnsøe, 2016, p. 4).

> "Are we really living in the Anthropocene – the 'age of man'–with its Eurocentric and techno-determinist vistas? Or are we living in the Capitalocene – the 'age of capital'–the historical era shaped by the endless accumulation of capital?" (Moore, 2017 p.596)

Other scholars have come up with alternative terms to oppose the Anthropocene: Hornborg with *Technocene* (2015) or Delanty & Mota with *Cosmopolocene* (2017). Donna Haraway herself had few attempts at it: *Capitalocene, Plantationcene* and *Chthulucene* (Haraway, 2015; Haraway et al. 2016). All these alternatives capture the destructive character of the era and most importantly they are "indispensable in thematizing the relationship between the social world and nature from the viewpoint of the former." (Simon, 2017, p.242). My motivations for choosing the Capitalocene is that today –and arguably for many centuries before our time– our conceptualizing and understanding of nature and animals must be theorized in the light of the economic system. According to John Barry (2016), the economic system is "the material metabolism between the human and the nonhuman world" (p.7).

Capitalocene scholars point out that using Anthropocene puts too much emphasis on human beings, giving them a central role while avoiding calling out capitalism for which they are responsible. In addition, it is incorrect if not completely unfair to blame the entire human species for climate change, pollution and environmental destruction when we know that global west corporations and countries are the ones who have precipitated the Great Acceleration. One can see similarities in Bookchin's (1987) critique of deep ecology for it ignores gender, class, ethnic differences, imperialism and persecution "by creating a grab bag called Humanity that is placed in opposition to a mystified Nature, divested of all development" (p.17). The Anthropocene reveals no interest in dismantling societal hierarchies and understanding that the ecological crisis lies in structures of domination of "women by men and of men by other men" (Ibid p.9)

What Moore proposes is a theory that deals with the driving forces of our planet-wide adopted economic system. The Capitalocene explains the world-ecology we live in and our interaction with nature for at least the past three centuries. Though the separation between society and nature predates capitalism, it is inherently modern and emerged during the Scientific Revolution with, at its core, Cartesianism. At the heart of the analysis lies the capitalist world-ecology which has enslaved staggering proportions of people, precipitated the extinction of millions of plant and animal species, driven the

loss of countless cultures and languages and led to an unprecedented ecocide (IPCC, 2014). This "limitless appetite for resource exploitation" (Haraway, 2004, p.17) is tied to the law of Cheap Nature that rules over the '4 Cheaps' which are food, energy, raw materials and human life (Moore, 2016). Behind this, the well-oiled mechanism of capital accumulation works through appropriation of skills, technologies and markets set up for profit maximization (Kopnina, 2014). Together with the creation of wealth arose inequality, poverty and dispossession, affecting the impoverished in the first place. Since the beginning, capitalism has heavily relied on the unpaid work/energy of women, nature, and colonies (Mies, 1986). As Marx was explaining in 1967 "the rate of profit is inversely proportional to the value of the raw materials" (1981, p.111). The neoliberalism of today emerged as early as the 70s and constitutes a political philosophy with a radical *laissez-faire* approach to capitalism characterized by unregulated markets, privatization, and reduced intervention of governments in economy. Its status quo rests upon the human supremacy mindset that "has enshrined a no-limitation way of life –including no limitation on reproduction, no limitation on consumption and economic growth" (Crist, 2013 p.47). There is considerable evidence that this destructive model of economy does not contribute to the flourishing of people and states but rather encourages undifferentiated growth, manufactures the elite, justifies an unequal distribution of income and wealth and is harmful to nature, society and even democracy (Wilson and Swyngedouw, 2014). And although most economists discredit it (Hudson, 2015; Matthaei, 2018; Piketty, 2015, 2019 to cite a few), neoliberalism still reigns supreme.

For Moore (Ibid), "such transformations worked through direct violence, class exploitation and the manifold expressions of the Cartesian revolution" (p.606). Cartesianism is not only *philosophically* but also *practically* violent. It is reflected through its way of organizing nature and people, isolating and fragmenting (as things that could be mapped, abstracted and quantified), ascribing values and dismissing categories of beings i.e. women, people of color, LGBTQI people, the disabled, indigenous and, the most vulnerable of all, nonhuman animals. Now, it is important to mention that if nonhuman minorities can, in most countries of the Western world, live much better today than they use to (for that they experience less structural and direct violence, are better represented and protected by laws), the fate of the overall majority of nonhuman animals has not changed much. Still considered as a cheap nature, they are objectified, instrumentalized and stripped off their agency (Reagan, 1980; Washington et al., 2017; Wallach et al., 2018). Proof of this is the emerging 'new conservation science' which explicitly endorses the "better management of nature for human benefit" (Dunkel, 2011 p.38), something that Sullivan (2006) and Kopnina (2016a) see as ineluctable in a profit-driven neoliberalist system based on speciesist and discriminatory foundations (Kidner, 2014). These 'new' conservationists (Kareiva, Lalasz & Marvier 2011; Marvier, 2014) promote a shallow view of conservation which dismisses intrinsic value in nonhuman and fails to offer a critical and integrated view of the economy (Barry, 2016).

2.2.2. Animal Rights Theory

In the pursuit of biodiversity preservation, conservationists have paid little attention to whether the use of animals is defensible on moral grounds. Needless to say, rewilding is no exception and there is a fear that concerns stop at meeting the welfare requirements imposed by the law without looking beyond. That is why, in addition to rejecting speciesism, I argue that welfare biology must rest upon animal rights theory. First coined in 1970 by Richard D. Ryder, speciesism has since been subject to many definition attempts. Australian philosopher Peter Singer has largely popularized the term in his book Animal Liberation (1975). For this research the following definition is adopted:

> a failure, in attitude or practice, to accord any sentient being equal moral consideration of interests and respect due to that being's species or having characteristics that are generally associated with a particular species. (Perz, 2006, p.50).

"Having characteristics [...] associated with a particular species" stresses that speciesism also occurs not uniquely with regards to the membership of a given species but on the basis that a certain species possesses traits that are characteristics of a species Fish, for instance, are more discriminated against than apes. Brown (2015) explains that, as we do not detect facial expressions and do not get vocal cues from fish, we hardly empathize with them whereas apes have a lot in common with humans. This is what we call *phylogenetical proximity* i.e. similar evolutionary history. Speciesism is a persistent problem that also manifests itself in animal protection movements and organizations dedicated to species preservation (Singer, 1975; Sollund, 2011).

ART describes a political standing which condemns the use of animals as instruments or commodities for human ends and advocates for the abolishment of speciesist practices. It recognizes that nonhuman animals possess rights based on criteria such as consciousness, intentionality, and sentience (Regan, 2004). The premise of animals possessing rights has led to the elaboration of new concepts of justice like ecological justice (or ecojustice). Ecojustice is not a new concept, in fact, it has been previously explored in green thought by Naess (1973), Dobson (1998) and Shlosberg (2001). It has nonetheless been ignored by the majority of scholars, feeling uneasy about giving equal moral consideration to nature. Ecojustice is "the idea of doing justice *to* nature" (Wienhues, 2017 p.368). It is informed by ecocentric values which attribute intrinsic moral value to humans and animals as well as other organisms and ecosystems (Curry, 2011; Washington et al., 2018). In line with this a new concept has gained ground: bio-proportionality. It advocates for a more equitable distribution of resources and territories between earthlings. In practice it imposes limits to human expansion. Wilson (2016) is the most radical proponent with a half-Earth proposition: allocating half of the Earth for humans and the other half for nonhuman life. The application of such ideas would involve "optimization of populations of all species, including territory proportional to species requirements" (Kopnina, 2016b p.181). For such a system to work it would

require human representatives to stand for nonhuman interests (Higgins, Short & South, 2013) like proposed in the Nonhuman Rights Project by Steve Wise[2].

Turning to practicalities, *Zoopolis* written by Donaldson and Will Kymlicka (2011) is a key book with groundbreaking propositions. The authors go beyond the negative rights of animals on which most AR scholars agree e.g. right not to be killed, right not to be harmed, etc. and highlight the positive obligations humans have towards nonhuman communities. As mentioned earlier, their proposal hinges on differentiated statuses depending on the type of animal and the relation (or absence of relation) it has with humans. The following section will focus on wild animals since they are those concerned in this research. Wild animal sovereignty arises from two observations: humans, on the one hand, commit acts of direct deliberate violence towards wild animals and massively contribute to habitat loss through resources extraction, building, pollution or climate change. On the other hand, humans can positively intervene in nature in order to reduce wild animal suffering which is, as it has been said before, immense yet very common (Tomasik, 2015). On this basis, the authors argue that, for wild animals to be protected, we must acknowledge their sovereignty and self-determination and recognize their fundamental inviolable rights, e.g. a right to land or the right not to be exploited and/or enslaved (Donaldson & Kymlicka, 2011). The right to land is, in the case of rewilding, a particularly sensitive point. The authors notice that when we visit a foreign state, we cannot decide to settle or exercise a control over local inhabitants, nor can we "unilaterally reshape according to our desires or our conception of its needs and desires" (p.170). They assert that we ought to adopt a similar approach vis-à-vis wild territories and recognize the sovereignty of populations to manage and flourish where they have established themselves. For wild animals precisely, their well-being mainly depends on their natural environment and the degree of human interference (contrary to domesticated animals). In this light, failing to recognize wild animal sovereignty amounts to failing to care for their well-being.

2.2.3. Framing

Concepts of frame and framing have been widely used across disciplines such as sociology (Benford & Snow, 2000), conflict and negotiation research (Lewicki, McAllister & Bies, 1998), management (Creed, Langstraat & Scully 2002), psychology (Levin, Schneider & Gaeth, 1998) but also science and technology studies (Davidson, 2002) and institutions (George et al., 2006). Frames, according to Goffman (1974) are the organization of our experiences as individuals, groups or societies, and the categorization and interpretation of things. Weick (1995) qualifies frames as 'sense-making devices'. Basically, it is how we feel about what surrounds us; places, people, situations and how we label them. Therefore, frames are intrinsically linked with language. They are also dynamic and act as "guides for doing and acting" (van den Brink, 2009 p.21). As our perceptions are not static, frames are created, reproduced and transformed by the users,

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[2] https://www.nonhumanrights.org/

particularly in interactional contexts. When people assemble perceptions of reality into their own world, they naturally position themselves. This process is called 'appropriation' (Benford & Snow, 2000). Dewulf et al. (2009) have sorted out the conceptual approaches to framing to differentiate two types: cognitive representation and interactional co-construction. The difference is paradigmatic, i.e. these traditions have distinctive ontological, epistemological and methodological approaches. Frames as cognitive representations are understood as a repertoire of memory structures, a toolkit that varies from individual to individual and with which we match perceptual inputs (new experiences) like a message read on a sign, the loss of a loved one etc. (Minsky, 1975). According to this theory, frames are considered as "static entities that extend indefinitely in time" (Dewulf et al., 2009 p.159), contrary to interactional frames which are dynamic and likely to change as they are negotiated in interactions.

Another element to consider is *what* gets framed. From the existing literature three categories are identified: (1) interactions (processes), (2) issues and (3) identities and relationships. Although each of the three categories can be identified in both cases studies, a special emphasis has been put on identities and relationships. The rationale behind this choice lies in identity formation, a process inseparable from the presence of 'otherness'. It means that defining one's identity is being done by emphasizing differences and similarities. Relationships largely contribute to identity formation through inter- and intra-group interactions. It is within communities that those social constructs are reproduced and reinforced via mechanisms of reward and punishment. In the environmental field we can argue that the main axis of research is based on the relationship humans have with their environment i.e. nature and nonhuman animals. The construction of humanhood in particular has evolved over time as our perception of, and interaction with, nature changed. Strydom (2010-2011) discerns three models:

- **'Organic nature'** is the pre-modern model. In Ancient times nature was traditionally given a female gender ('Mother Nature') and deified. Humans were part of the Great Chain of Being, a cosmic holism. The Koran, Bible as well as the Torah have in common the reverence for sacred life and the idea that humans are guardians and they owe a duty of care to the divine (Hulme, 2009). Accordingly, moral constraints would prohibit damaging activities.

- **'Mechanical nature'** is a radical turn which took place in the 16th and 17th centuries. During the Enlightenment, man "renounced religion, myth and traditional social order in the name of reason" (Dryzek, 2013 p. 195). Positivism and Cartesianism turned nature into a 'problem to solve'. With the Scientific Revolution nature became a machine. This mechanistic view allowed the manipulation, control and domination over nature (Merchant, 1990). New techniques and tools after the Industrial Revolution permitted to fully exploit the *cornucopian* nature which is limitless in its resources.

- **'Reflexive nature'** stands for a new paradigm that emerged in the 1960s. It stems from the problematization and relativization of the previous model and tries to conceptualize the "relation between self-producing and self-organizing nature and humans" (2010-2011 p.4). Basically, we are now rediscovering our place and role in nature. New words like 'environment' or 'ecology' emerged as new signifiers.

As shown p.21, each model is accompanied by rules and guiding (cognitive) principles. The difficulty today resides in the plethora of possible rules and principles as there are a lot of social vehicles i.e. collective agents participating and promoting discourses (Strydom, 2010-2011). Additionally, the action repertoire designates actions undertaken by collective and individual participants in function of their respective cultural model.
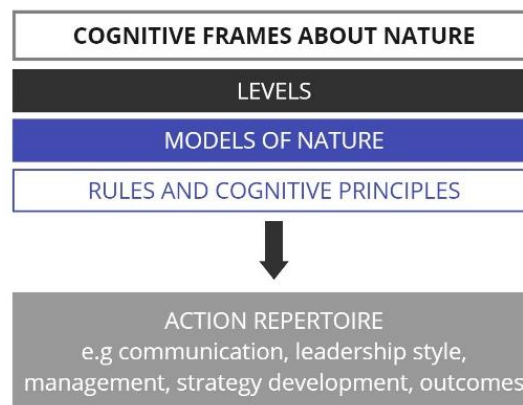
Fig.4: modus operandi of cognitive frames (source: author)

Moreover, cognitive frames operate at different levels. The macro level or "deepest strata of world interpretation" (Mannheim, 1980) has become established over time. It is where Schutz locates the basic 'stock of knowledge' that is "intersubjectively shared, naively accepted, diffuse, enabling yet limiting" (Strydom, 2009 p.12). The macro level is a prerequisite for agents to experiment, categorize and describe their social and natural environment. The macro level has a directional function particularly obvious in the modernity frame "embodied in constitutions and legal systems" (Ibid, p.14). The macro frame is an overarching shared cognitive structure that is the result of the activities of collective and individual agents and has stabilized over time. The second level is the meso level where collective actors such as groups, communities, corporations etc. decide on problem situations that come from discursive processes at the individual/micro level. As for the meso level, it is composed of framing devices such as norms, habits, rules of conduct, moods and emotions hold by each one of us. It is also where identity formation and reproduction take place.

Each level manifests itself differently but continuous interplay happens. The master frame is the result of historical circumstances during which the meso and macro frame align to bring about social movements. When a master frame emerges, it is accompanied by "a new selective set of cognitive structures coordinating the competing

frames in proportion to their degree of power and acceptability to the public" (Strydom, 2009 p.7). Whether a master frame can disrupt the macro frame depends on two elements; first the social movement and "its ability to insert its interpretation or perspective into public communication and discourse" (Strydom, personal communication, 21 November 2019), second, the capacity the public sphere (meso level) has on influencing the minds and perspectives of public and dominant agents like the state, corporations, science, etc. Once, and only if these two conditions are met, the master frame is likely to spell some reconfiguration or change of the macro frame.

	GIVEN COGNITIVE ORDER	PROCESS RESULT/OUTCOME
MACRO	Cultural frame	Reproduced/transformed cultural frame
	Modernity frame	Reproduced/transformed modernity frame
	Historical frame	New master frame
MESO	Problem situation frame	Current situation frame
	Collective actor frames	Reproduced/transformed collective actor/identity/action frames
MICRO	Framing devices	Reproduced/transformed framing devices

Table 2: cognitive frames in process of medium and discourse (source: author, adapted from Strydom, 2009)

Fig. 5: the emergence of a master frame (source: author, adapted from Strydom, 2009)

2.3. Operationalization

CONCEPT	DIMENSIONS	DEFINITION	CRITERION
	Fitness	Satisfactory functioning of the biological system	Health, nutrition, normal development and and normal capacities, injuries, malformation, illnesses or parasites, stress. *Indicators: appearance, behavior, movement, appetite, faeces, skin/coat, temperature, pulse rate, respiratory rate*
WELFARE BIOLOGY	Sentience — Emotional lives — Affective experiences or feelings Pain/pleasure — Empirical experiences of suffering or wellbeing		"Being free from prolonged and intense fear, pain and other negative states (hunger, thirst) and by experiencing normal pleasure [...] such as comfort or contentment" (Fraser, Weary, Pajor & Miligan, 1997 p.191) *Indicators: cf. fitness and naturalness, resources availability, presence, type and intensity of predation and human activity*
	Naturalness	Ability for an animal to perform their full behavioral repertoire (Kiley-Washington, 1989); naturalness and quality of living/housing conditions; fulfilment of the animal's genetically encoded nature (Rollin, 1993)	Presence of suitable environment that allows individuals to live according to their own nature. *Indicators: habitat degradation, spillovers (pollution, infrastructures, noise, lighting, trafic)* Reproduction, parenthood, migration patterns, skills, intra and/or inter-species interactions

CONCEPT	DIMENSIONS	DEFINITION	VECTORS

CONCEPT: COGNITIVE FRAMES ABOUT NATURE

LEVELS

- **Macro** — Virtually unchangeable all-pervasive and presupposed high-level cognitive structure — Subconscious cultural cognitive structures operating at inferior levels

- **Meso** — Collective actors + problem situation frame = collectively defined issues — State, institutions, school, church, sport association, companies, NGOs and organizations

- **Micro** — Frame construction devices: values, emotions, experiences, etc. — Individual agents and their upbringing, professional life, private life, race, class, gender, sexual orientation, religion, nationality

MODELS

|	Rules	Cognitive principles
Organic — Ancient times and Middle Ages philosophy of cosmic holism. Important of morals and religion: sacredness, harmony.	observe, limit, preserve, conserve and revere	harmony cosmic holism appropriatedness
Mechanical — Modern times: advent of Science and Cartesianism. Desacralized nature, commodified and exploited.	gain power, increase efficiency, control, prestige, progress and profit	mastery efficiency effectiveness common good
Reflexive — From 1960s to contemporary era: problematization and questioning of previous models. Quest for a new paradigm.	reflexively monitor, economize circularly, regenerate and recycle	sustainability common good responsability justice equality

2.4. Conceptual model

The conceptual model in its most refined form presents 3 variables which are *'Conception of welfare biology'*, *'Implementation of welfare biology'* and *'Cognitive frames'*. Conception means two things: it first describes the transformation of abstract ideas into a concrete plan. But it also stands for the way in which something is perceived or regarded. It is precisely our perceptions that form the first layer of cognitive framing. The literature suggests that the influence of frames happens at early stages of decision-making which are when abstract ideas formed or devised into a concrete plan of action (the conceptional stage). As for the implementation, it corresponds to the process of "putting a decision or plan into effect" (Merriam-Webster, n.d.).
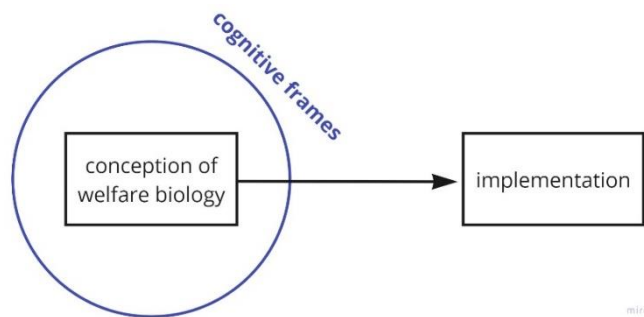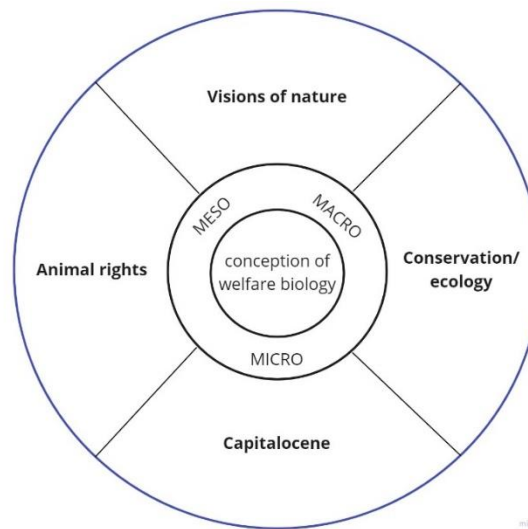

Conceptual model step 1
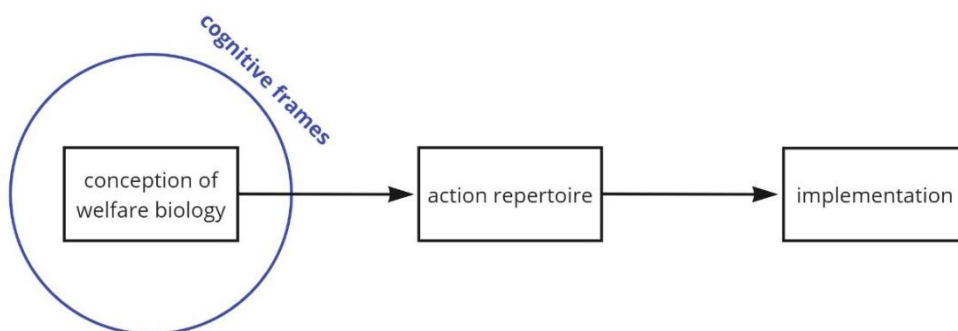
Conceptual model step 2

The diagram below is a zoom-in of the *'Cognitive Frames'* variable. It features the framing categories that have been withdrawn from the desk study. They show obvious influence on the concept of welfare biology, therefore they are the most relevant for answering the research question. The chart also presents a second circle which features the three levels. Each of the four frames operates at three levels: micro, meso and macro which means that, in theory, in total, there are no less than twelve invisible arrows influencing the conception of welfare biology. In practice however, there is some overlap between the levels which depend on each other and influence one another.

It is to determine during the data analysis what level(s) from what frame(s) have the strongest effect on the main variable.

Conceptual model step 3

Where it is obvious that the origins and propositions of Animal rights theory and the Capitalocene are behind the categories of the same name, the bedrocks for *Visions of nature* and *Conservation/ecology* must be introduced. *Conservation*/ecology was a self-imposed choice as it refers to both conservation as a field and conservation as a set of techniques. As for *Visions of nature,* it largely draws from the works of De Groot, Drenthen & De Groot (2011) and Flint et al. (2013). The later actually reviewed the work of the former as well as 18 other papers to come up with dimensions of human-nature relationships, according to sets of characteristics based on positionality, character of bond and understanding of nature e.g. fragile, dangerous, unpredictable, generous etc.

Mastery over Nature
1. Human beings have the right to alter nature radically
2. Technological progress will enable us to solve environmental problems in the future
3. Human beings have more value than nature
4. Because I can think, I am more important than nature
5. We must especially protect animals that are useful for human beings
Stewardship of Nature
6. Human beings have a responsibility to conserve the natural environment
7. We have to ensure that we leave enough nature intact for future generations
8. Although we stand above nature, we do need to take good care of it
9. Human beings are part of nature and are also responsible for it
Partnership with Nature
10. People and nature are of equal value
11. Nature wants to grow, prosper and develop, just like humans do
12. We must not set ourselves above nature, but must work together with it
13. I would like to have a relationship with nature just like I have with my friends
14. I can have a relationship with nature just like I have with my friends
Participation in Nature
15. When I am surrounded by nature I experience something greater than mankind
16. I often feel an intense connection with nature
17. I would like to spend a week entirely alone in the forest, in order to feel one with nature
18. Human beings are part of nature
19. I sometimes feel one with the universe
20. It would be wonderful to join the wild geese on their yearly journey
21. Natural sites are important, even if they are not useful to us human beings

Dimensions of human–nature relationships

Positionality dimensions
Anthropocentric/ecocentric
Humans/nature above
Humans part of/separate from nature

Character of bond dimensions
Intention of action
Biophilia/biophobia
Responsibility/rights
Role of technology
Spirituality
Instrumental/intrinsic
Connectedness/apathy

Understanding of nature dimensions
Mode of learning
Fragility/resilience
Predictability of nature

Fig. 6 (left): HaN (Human and Nature) scale statements corresponding to each relationship (source: De Groot, Drenthen & De Groot, 2011).

Fig. 7 (right): Dimensions of human-nature relationships (source: Flint et al., 2013)

CHAPTER 3: METHODOLOGY

The research approach, design and the justifications for the methodological choices will be outlined in the first section of this chapter. The second section (3.2) lays out the method to collect and analyze the data.

3.1. Research method

3.1.1. Research approach

This research is a theory-based qualitative study and relies on an embedded single case design. The type of case study is both descriptive and interpretive, as it seeks to describe data as they occur and to extract the phenomena within the data. A case study appeared best suited to the context of the rewilding projects in order to get in-depth knowledge of an issue in a bounded context (Creswell, 2013). As mentioned by Flyvbjerg (2006), the strength of the case study lies in the 'power of example'. The main level of inquiry is rewilding projects, as suggested by the research question. Then three subunits have been chosen, namely the natural reserves of the Oostvaardersplassen in the Netherlands, Monts d'Azur in France and the rewilding area in Eastern Rhodopes of Bulgaria. The embedded design was preferred to a holistic one to better investigate the multiplicity of evidence and compare the subunits in their practices (Scholz & Tietje, 2002). The aim was to be able to derive generalization about rewilding projects; whether they incorporate welfare biology or not and why this is so
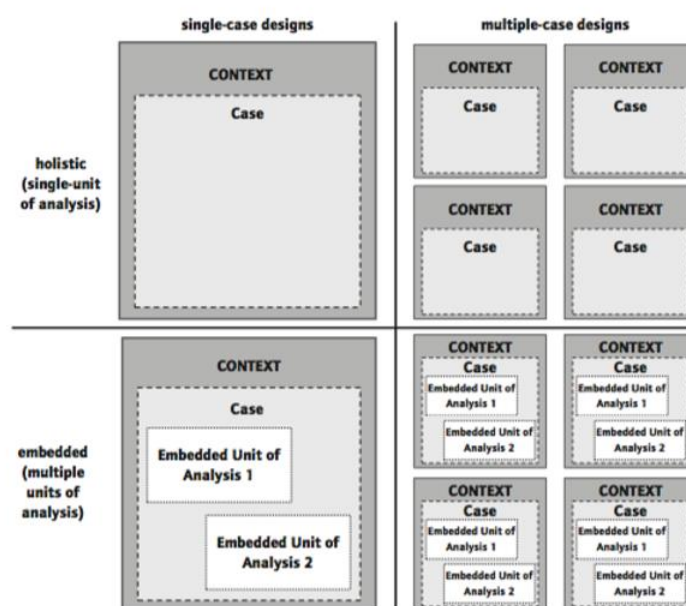

Fig. 8: the four basic types of design for case studies (source: Yin, 2003)
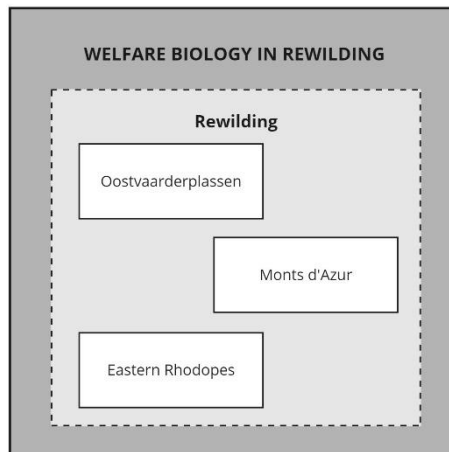
Fig. 9: close-up of the embedded single-case study design (source: author)

Although an embedded case study allows qualitative and/or quantitative data collection, the former was preferred. On the one hand this choice was motivated by my familiarity with the research method and one the other hand (and most importantly), existing literature suggests that a qualitative approach is best suited to the interactional paradigm in framing research which predominantly relies on the analysis and transcription of observations and interviews (Dewulf et al., 2009). However, attention must be paid to what Yin (2014) describes as the main pitfall of embedded design: the failure "to return to the large unit of analysis" (p.23). A solid and consistent blueprint appears to be crucial in order to avoid this.
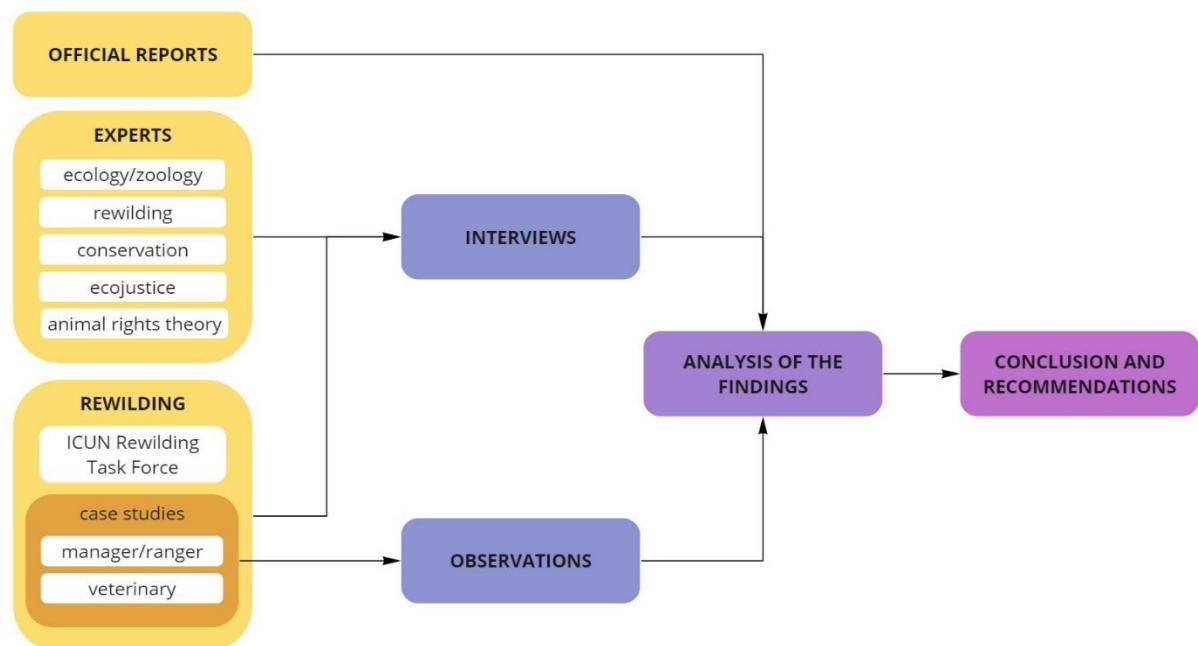

Fig.10: research design (source: author)

3.1.2. Analytical approach

The starting axiom of the analysis was to "develop conceptual categories, supporting or challenging the assumptions made regarding them" (Zainal, 2007). In this regard it was both deductive and inductive. After the collection, the data was organized into previously identified framing categories (or themes) and levels. The goal was to explore how cognitive schemas influence actors in their view of animals and welfare biology. All interview guides had a common structure (cf. Annex 2). Levels of frames were identified through the following:

- Micro: questions about the respondent's background
- Meso: questions about the structure and proceedings of the organization e.g. decision-making, type of hierarchy, collaboration or not etc.
- Macro: broad questions about worldviews, universal values and 'outside forces' e.g. economic constraints.

The transcripts and documents were imported and coded in Atlas.ti, a software for qualitative analysis. In the first coding phase, 983 codes were retrieved, later reduced to 961. The analysis started with structural coding which allows the researcher to start organizing their data around specific research questions (Saldaña, 2009). For this, ten code groups were created according to theoretical coding consisting of five themes, three levels and two additional categories for clarity purposes ('*Animals'* and '*Emotions repertoire'*). As for the rest, In Vivo coding, open coding as well as value & emotional coding were used. Magnitude coding was added to the coded datum ANTHROPOCENTRISM to indicate intensity e.g. ANTHROPOCENTRISM: H (high), M (medium) or L (low).

3.1.3. Research paradigm

The inquiry paradigm largely draws from critical theory. Critical theorists are interested in changing society by criticizing it. They scratch under the surface of what is assumed to be reality and unfold dominant narratives and structures of power. Critical theory assumes an apprehensible reality consisting of historically situated structures shaped by social, political, ethnic, economic and gender values (Guba & Lincoln, 1994). These structures are believed to have crystallized over time, for example the heteronormative culture (Yep, 2003; Butler, 2004). Feminism, anticapitalist, queer and animal studies fall within the trend of critical theory. This research as well as the outcome have essential political undertones since it wants to contribute to the articulation and mainstreaming of nonhuman interests through ART and ecojustice.

The epistemology suggests that knowledge is value-mediated because of the interaction between investigator and objects of investigation. The variable *'Implementation'* leads us to have a look at critical theory in management studies in which attention is paid to the practices of power, inequality and domination. Communication pattern are examined in the hope of removing systematic communicative distortions of misrepresentation (Alvesson and Willmott, 1992) to form an accurate, honest and legitimate communication that provides the basis for rational, reflective and moral

decision-making (Lawrence and Philips, 1998). As for the methodology, there are some central principles: interpretative (hermeneutic) dimension of social relations; recognition that structures may be species-specific and sometimes consciously transformed; variability in the meaning and structure depending on time and space (Fui, Sek Khin & Wei Ying, 2011).

3.1.4. Case selection

For this case study three subunits have been selected; the first one is the reserve of the Oostvaardersplassen located in Flevoland in the Netherlands, the second one is the Réserve biologique des Monts-d'Azur in France and the last one is the Eastern Rhodopes rewilding area in Bulgaria. They are represented by the green pins in the map below.
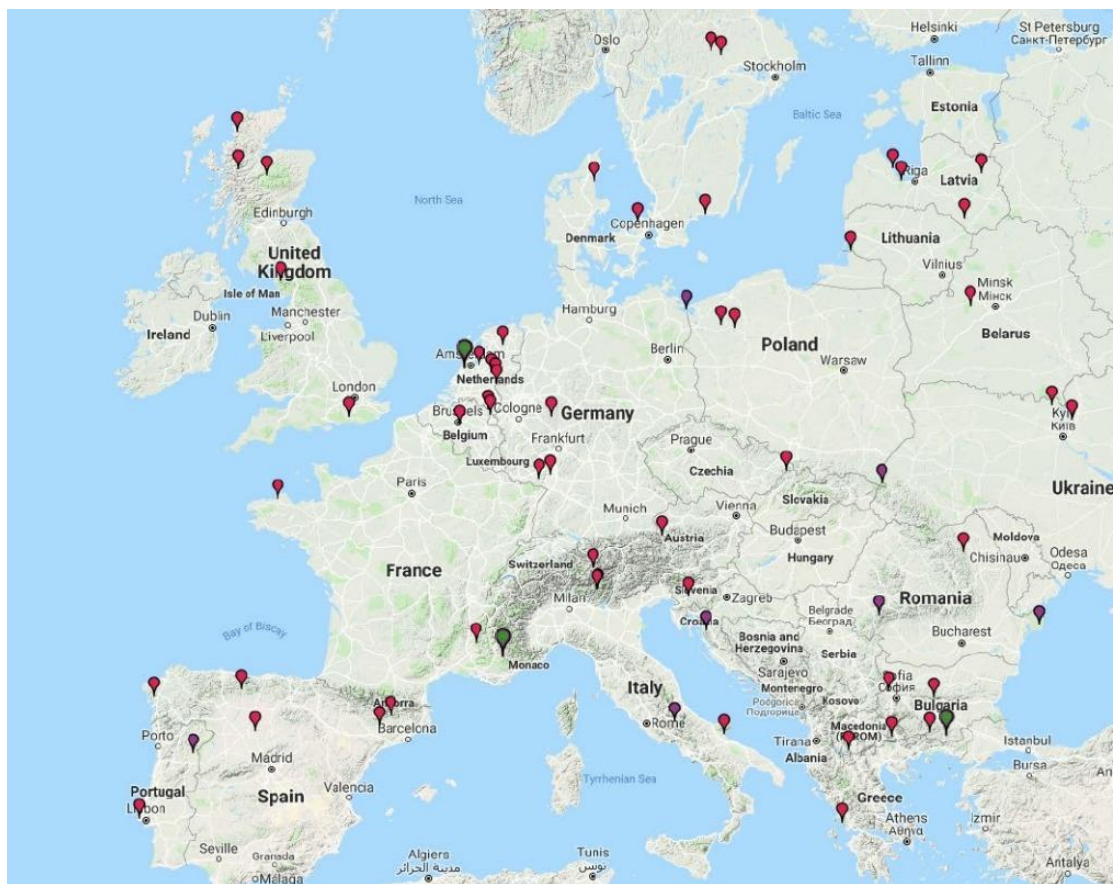
Fig.11: map of European rewilding initiatives with the Oostvaardersplassen
(source: European Rewilding Network, modified by author)

The Oostvaardersplassen was suggested by my supervisor during my time at Animal Ethics. I started looking at it as part of my internship which consisted in examining the welfare of the large herbivores over the years. The selection of diverse projects from different countries was because I wanted to illustrate the variety of European rewilding and to analyze how their differences play a role in how they understand and deal with animal wellbeing. The main differences were the type of management, the size of the area and the biotope constitution (especially the presence or absence of natural predators). Nonetheless they also have common points: all cases rely on large herbivores translocation rewilding by means of reintroducing captive-bred animals and/or translocating wild animals. They share a similar goal which is the restoration of the lost megafauna of Europe in order to fulfill gaps in the trophic chain and eventually benefit a given habitat and the local biodiversity.

CASE STUDY	Oostvaardersplassen	Monts d'Azur	Eastern Rhodopes
Location	Flevoland, The Netherlands	Alpes-Maritimes, France	Kardzhali region, Bulgaria
Type of landscape	Grassland, marshland	Mountain, grassland and wetland	Mediterranean temperate forests, river valleys, grassland and steppe
Area size	5600ha	700ha	250 000ha
Principal species	Red deer, Konik horse, Heck cattle, grey goose	Bison, Przewalski horse, red deer, moose, wild boar, roe deer, chamois, vultures, birds of prey, wolves, lynx	Red deer, fallow deer, roe deer, Karakachan horse; Konik horse, vultures, wild boar, birds of prey, wolves, Golden jackal
Management	Flevoland, Staatsbosbeheer	Patrice & Alena Longour	Rewilding Europe, Rewilding Rhodope

Table 3: Comparative table of the 3 case studies.

1/ OOSTVAARDERSPLASSEN

"Flagship project" for Rewilding Europe (2018), "pioneer project in European rewilding" (Lorimer & Driessen, 2014) or, quite the reverse for Fisher (2019) who talks about "maniacal experiment in Dutch nature development, [...] a zombie idea in ecology, an idea that should be dead but isn't" while Monbiot (2013) soberly calls it "failure", the OVP is a 5600 hectares nature reserve located in the North of the Netherlands. Though the managers have sought to dissociate themselves from the term rewilding, it is widely recognized as a rewilding experiment. Back in 1968, while a vast inland sea was being drained to host an industrial site, a handful of environmentalists including Frans Vera lobbied the Dutch government to design a Paleolithic landscape where large herbivores would graze and maintain a favorable habitat for birds. In place of aurochs –an extinct species since the mid-17th century– Heck cattle *(Bos taurus)* was brought in, together with red deer *(cervus elaphus)* and Konik horses *(Equus ferus caballus)*. Other species such as foxes, geese, buzzards, gray herons and kestrels were progressively spotted. In 2006, against all odds, a couple of white-tailed eagles chose to nest in the reserve, the first individuals to breed in the country since the Middle-Ages.

Favorable conditions led populations to rapidly increase. However, successive harsh winters caused thousands of animals to starve, leading the Dutch government to appoint in 2005 an International Committee on the Management of large herbivores in the Oostvaardersplassen (ICMO), which was given the mission of giving recommendations on how to improve wild animal welfare in the reserve. In 2010, the ICMO was summoned again after extraordinary turmoil. Following this, a strategy of early reactive culling was implemented.

Fig. 12 (opposite): Konik stallions fighting (source: Rewilding Europe)

Before the winter season, park rangers shoot animals deemed too weak to survive. It is estimated that 30 to 60% of the animal population die as a result of culling. The worst winter by far was that of 2017-2018 with a total of 3,300 deer, cattle and horses dying. The reserve got a lot of public attention, dividing Dutch citizens on the question. About the controversy Frans Vera declared "[It] *only has to do with the acceptance of people [...] and nothing, in my mind, to do with the suffering of animals."* (Kolbert, 2012). In 2016 the government transferred the responsibility to the province of Flevoland which gave the Van Geel Commission the task to submit new policy guidelines.

2/RÉSERVE BIOLOGIQUE DES MONTS D'AZUR

Located in the region Provences-Alpes-Côtes-d'Azur in South-East France, this 700ha private reserve was created by Patrice Longour, a veterinary who has worked many years in African nature reserves. Formerly agricultural land, Monts d'Azur is a prime example of ecological succession with a competition between coniferous and deciduous trees.

Its diverse landscape hosts a rich fauna and flora including red deer, chamois, roe deer, wild boar but also a large variety of birds (more than 70 species including 10 rare ones), insects, amphibians and plants. Several packs of wolves (*Canis lupus lupus*) have established themselves in the region as well as few lynx (*Lynx lynx*). Two emblematic prehistoric species, the European bison (*Bison bonasus*) and the Przewalski horse (*Equus caballus przewalskii*) have contributed to the fame of the reserve, both introduced in 2005-2006. Around twenty horses can be found in the reserve. The first individuals came from zoos (Prague and Gramat) and a farm in Lozère. New stallions arrived in 2009, initiating a new generation. From the fifty something bisons counted in the reserve, 3/4th were born there. Last species in date to join the reserve is the moose.

Monts d'Azur represents an appealing case because it is, in many aspects, a success story. The healthy populations of Przewalski horses, bisons and good natality rates testify the proper integration of these species in a new ecosystem, completing the trophic chain with large herbivores. Indisputably, herbivores play a crucial role in the trophic chain and large herbivores in particular have a considerable impact on autotrophs (also called primary producers) e.g. trees, plants, algae etc.

Fig. 13: European bison and calf by the humid zone (source: 2016 © Jean François Noblet)

3/ EASTERN RHODOPES REWILDING AREA

Fig. 14: Panoramic view of the Studen Kladenets reserve (source: 2019 © Bogdan Boev)

The Rhodopes are a mountain range stretching at about 15 000 square meters mainly located in Southern Bulgaria (83%) with the remaining part reaching into Greece. Its rich landscape, composed of separated ridges, deep gorges and mountain lakes and valleys is home to countless species including the grey wolf (*Canis lupus*) golden jackal (*Canis aureus*), souslik (*Spermophilus citellus*, also called ground squirrel), brown bear (*Ursus arctos*) as well as many birds of prey like the Eastern imperial eagle, the saker falcon or the Levant sparrowhawk. It is the last remaining breeding area of black vulture (*Aegypius monagus*) in South-East Europe and the only Bulgarian breeding colony for griffon vultures (*Gyps fulvus*). The Eastern Rhodope rewilding project started in 2009 through a Dutch-Bulgarian collaboration called 'New Thracian Gold'. This project itself was an upgrade of the long-standing work of the Bulgarian Society for the Protection of Birds. In 2014 Rewilding Europe took over, now working with Rewilding Rhodope.

The core areas are Madzhavoro, Byala Reka, the Studen Kladenets game reserve and Chernoochene. They are connected via green corridors. Besides the LIFE Vulture project, the GrazeLIFE project has been launched in 2019 and will continue till the end of 2021. Its objective is to evaluate different grazing models involved both domestic and wild/semi-wild herbivores, prevent wildfires and human-wildlife conflicts and assess the role of grazing in the protection of ecosystem services (GRAZElife, 2020).

Fig. 15 (opposite): Golden jackal and fallow deer in the background, captured by a camera trap. (source: Rewilding Rhodopes)

3.2. Data collection

The following methods were used to collect data:

- literature review about the concepts introduced in chapter 2
- document analysis of 5 official reports
- 15 semi-structured interviews
- observations collected on the fieldwork

When selecting instruments, the researcher must question their appropriateness considering limitations of time and resources (Creswell, 2013). The collection of diverse documents including academic sources, archival records, administrative or policy reports (like those emitted by organizations or the ICMO) was considered secondary data. The primary data was found in the interviews.

3.2.1. Interviews

The strategy for the primary data consisted of semi-structured interviews with experts and rewilding practitioners in a purposeful sampling fashion with some snowball sampling to take advantage of the participants' social network. It was determined that the variety of respondents should be adequate to provide a window of the framing processes surrounding rewilding. Prior to the data collection, the literature review helped establishing fields of interests. Experts were selected on the basis of field expertise, their familiarity with rewilding and/or some case studies. Moreover, discussions with experts enabled knowledge acquisition that was missing regarding specifics such as welfare indicators or protocols concerning the reintroduction of species. This information was imperative to the welfare biology evaluation. As for the case studies, the selection was systematic and led to the selection of identified key agents (veterinary and manager/ranger) in each of them, i.e. two respondents per case except Monts d'Azur where Patrice Longour occupies both positions.

3.2.2. Desk study & document analysis

The desk study gathered extensive literature review about conservation practices, rewilding, welfare biology, animal welfare, welfare biology, zoology, ecology, cognitive framing and theories of management (especially implementation). The document analysis was centered around the following reports which were coded and analyzed with the help of Atlas.ti:

- Rewilding Europe Annual Review 2017
- Rewilding Europe Annual Review 2018
- ICMO "Reconciling Nature and Human Interests" published in June 2006
- ICMO "Natural processes, animal welfare, moral aspects and management of the Oostvaardersplassen" published in November 2010

- Staatsbosbeheer "The Oostvaarderplassen in the picture: Towards a dynamic and amazing landscape" February 2019

The combination of instruments permitted triangulation, which is the use of multiple "data sources, methods, and investigators to establish credibility." (Creswell, 2013 p.157). Triangulation is widely recognized as an important component of a trustworthy research (Guba & Lincoln, 1994; Yin, 2014). Eisner (1991) uses 'credibility' instead of validation and talks about a detective compiling pieces of evidence to come out with a "compelling whole" (p.110). Another useful lead is proposed in the following pyramid proposed by Whittemore, Chase & Mandle (2001) showing a hierarchy between primary and secondary criteria (fig.16). The authors highlight that "primary criteria are necessary to all qualitative inquiry; however, they are insufficient in and of themselves. Secondary criteria provide further benchmarks of quality and are considered to be more flexible as applied to particular investigations." (p.529).
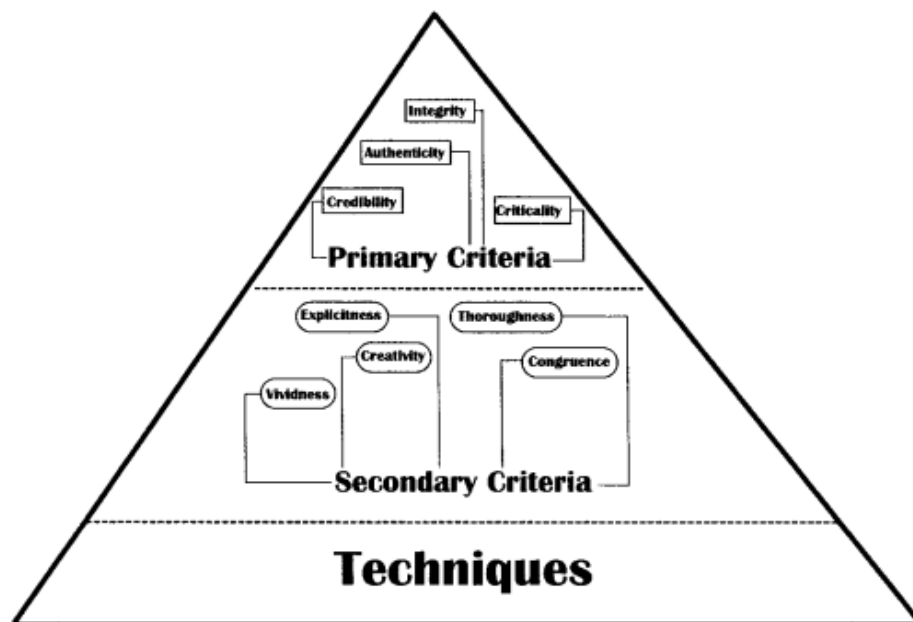
Fig. 16: synthesis of validity criteria in qualitative research (source: Whittemore, Chase & Mandle, 2001)

This research's validation perspective resembles Angen's (2000), i.e. "a judgment of the trustworthiness or goodness of a piece of research" (p. 387). The researcher ought to be authentic and to put aside her/his personal beliefs, political opinions, values and experiences that might interfere with the research and writing. This is what we call reflexivity. Hammersley & Atkinson (1995) indicate that "one characteristic of good qualitative research is that the inquirer makes his or her 'position' explicit" (p.46). This is the reason why I have expressed my critical standpoint in chapter 1. Reflexivity is both important to the credibility as well as for the sake of research ethics which I will address in the following section.

3.3. Research ethics

Ethics in qualitative research represent an important matter. Indeed, heavily relying on interviews, observations and collections or artefacts means that negotiation happens beforehand. But even once the permission is granted, one may experience ethical dilemmas that had not been anticipated (Field & Morse, 1992). Different issues can arise in the design itself, relations between researcher and participants and last, subjective interpretations of findings (Ramos, 1989). With regards to data collection, confidentiality, informed consent and privacy are primordial (Orb, Eisenhauer & Wynaden, 2001). Additionally, it was important to encourage disclosure and trust. First, all participants were explicitly informed of my motives as a researcher i.e. the purpose of my research and what information I sought to obtain. This was expressed twice, both during my first contact with the person (usually via email) and reiterated thoroughly a second time before each interview. Second, all informants had the choice between being referred to by an anonymous alias or their name. Such choice also applied to their professional occupation. Before each interview, respondents were informed that they could skip a question or stop the interview if they wanted to. Attention was paid to signs like vocal cues and body language to observe if the person seemed comfortable. Preference was always given to the respondents to choose the place and time of interview.

3.4. Generalization

As this research carried a descriptive nature, the collection of specific observations through interviews aimed at discovering similarities or rules. In qualitative research generalization permits to go from specific observations to the general formulation of a theory which, hopefully, can apply to different cases. It is my personal goal that this research can inform rewilders and, in general, conservationists. However, poststructuralists in framing theory would argue that how people interact and communicate always have multiple interpretations which generate an inherent indeterminateness and make generalizations void (Denzin & Lincoln, 2008). In addition, it must be considered that, as a rule (of critical theory), one can only generalize findings when similar context (political, cultural, ethnic, values etc.) across settings is found (Guba & Lincoln, 1994).

In order to elucidate if generalization can apply to this research, focus drives towards Larsson's lines of reasoning (2009). Larsson indicates that generalization is possible through (1) context similarity and (2) patterns recognition. The former is best suited for qualitative studies that provide prominent context data while the latter relates to the heuristic validity of qualitative research which produce configurations (or patterns) recognizable in the empirical world (Larsson, 2009). Moreover, instead of striving to attribute a singular meaning to generalization, we can see it as an "act [...] completed when someone can make use of the situations or processes" (Ibid. p.34).

This statement implies that the audience itself (practitioners, scholars or students) judges whether it applies to a given situation (Kennedy, 1979). Guba & Lincoln (1994) add that "the art of descriptive research [...] is in portraying the case at hand so well that readers themselves make the generalizations for us. In that sense they fill in or complete the pattern work that we outline only faintly" (p.113). That is the reason why good descriptive studies ought to present the phenomena in a broad range so that, across contexts, similitudes can be found.

CHAPTER 4: RESULTS

4.1. Introduction

This chapter will introduce the results of the data collection. The inquiry was focused on isolating data into five themes which will be consecutively examined in this section. The first theme deals with welfare biology as seen by respondents (experts and practitioners) and put into action in the three rewilding projects. The four remaining themes correspond to each framing categories introduced in the conceptual model. *Visions of nature* deals with the variety of values, opinions and beliefs over nature and nonhumans as well as positioning vis-à-vis human influence, footprint and responsibility. *Animal rights theory* is specifically about the academic concepts in animal advocacy such as agency, sovereignty and autonomy and what they mean to the respondents. It also tackles ethics and morality, responsibility and justice. The *Capitalocene* covers the nature/society binary as well as human activities and it does so in reference to the three other themes. Last, the *Conservation/ecology* groups key concepts in conservation, rewilding and connects practices to management methods in each case. A systematic comparison of the main angles of analysis can be found in Annex 3.

4.2. Themes

4.2.1. Welfare biology

This part will talk about how the concept of welfare is approached and put into action by rewilders. Most experts had heard about welfare biology before, compared to none of the rewilders. When looking at practices however, the application of some dimensions was observed with fitness and naturalness prevailing over sentience (cf. 2.3).

The habitat was one of the top conditions cited. Before considering the reintroduction of animals, it is imperative to assess the suitability of the chosen area. Criteria were presence of shelter, availability of resources and size of the area, as stressed by Steve Carver from the IUCN Rewilding Task Force:

> You know if you're talking about rewilding you've got to have the right habitat and sufficient space and the appropriate trophic interactions for those animals then behave in a natural way. (Carver, 2019)

How things are done in Eastern Rhodopes may seem rather unorthodox, but they assert the extra attention paid by the rewilding staff:

> I go before this to check food availability, shelter, [...] they have good shelter with trees.. also water availability [...] very pure and clean water for horses is very important but I also test the water everywhere by my... how to say, I drink this water... (H., 2019)

There was a large consensus about the fact that a diverse habitat is good and that "a good state of habitat" is desirable for the animals in the ecosystem. Having said that, both in Bulgaria and in the Netherlands, the respondents questioned the rigidity and usefulness of animal welfare legislation:

> *H.*: For horses we have now a battle with our veterinary system and human understanding, we don't like to chip them, to take blood samples, to change them, to make huh [chuckles] so many interventions… these interventions they are not happy with this.

> *D.*: It's human requirements. For example, the Karakachan horses they are so happy to live outside all year. We have requirements to have shelter, like a farm [stable] and we would build the shelter and we are, a hundred percent sure that these animals will never, but really <u>never</u> go there. But because of the requirements for animal welfare, we have to do that. (2019)

This view was shared by Tom Stout, who talked about the domestic horses he works with:

> *Laura Bernard*: And do you think sometimes we do things for domestic animals that are not so necessary but it's more like that you must comply with what's in…

> *Tom Stout*: …in the welfare code. Yeah sometimes. Yeah. So we make rules for the horses. So now it's becoming more and more –I'm not saying it's good or bad– but you shouldn't only have one horse; if you have a horse it needs to have another one with it. Because horses are social animals. Ok. Do we know if they suffer if they're on their own? Dunno, if they have companionship from a goat, sheep, a dog, a person... is that worse, I don't know. Now we have some horses much calmer if you keep them with a sheep or goat.

> *Laura Bernard*: Yeah but there's still companionship.

> *Tom Stout:* Okay but does it need to be another horse?

> *Laura Bernard*: It specifies that it should be with another horse?

> *Tom Stout*: I think so. More and more. Yeah. And then it specifies exactly how big the box needs to be. [asking himself:] Based on what? I was specified for the horses that we own, the research horses, how many hours exercise they have to get a day. Do we know the horse wants to be exercised for four hours a day?

For D., the root of the problem lies in the policymakers:

> And the laws are written by the people who stayed in the capital and most of them have never seen horses or cattle or sheep or I don't know what, animals in the wild. Or maybe they see them only during some trips... from the window of the car. So they have no understanding of actually what these animals need. (2019)

With regards to interventions, all veterinaries preferred minimal intervention:

Tom Stout: [...] But female animals, you could sterilize a lot of female animals surgically but if your future project is about welfare what do you think about that as a welfare suggestion? We gonna catch them all. We anesthetize them. We operate on them and then we let them go again.

Laura Bernard: Yeah I think, I think it's a lot of intervention. Well it's heavy intervention.

Tom Stout: It's a pretty heavy intervention.

At the Oostvaardersplassen too, veterinary interventions are limited to what is deemed necessary:

If we can help them in the field with a simple treatment we will give it. If the condition is so that it won't heal in the field, we will euthanize the animal. This goes for the Heck cattle and Konik horses. Red deer aren't treated by a veterinarian. Sedating animals in the field is difficult, especially when it's a (lead) stallion, since he might be killed by other stallions while wakening. (Folkertsma, 2019)

This opinion was shared by Patrice Longour:

[...] We try to intervene as little as possible. It means that when we have benign pathologies we do not intervene. If a pathology puts the animal at risk of death, we might intervene... well, we will intervene but in different ways: either the animal can recover and you help, but it's if a non-recoverable injury [...] the chances that the animal will be able to live a normal life again are low, we may euthanize then. (2020)

The whole paradox is that veterinary care, which aims at improving the welfare of an animal, features adverse effects when the animals are not used to it. A very important one is stress. For wild or semi-wild animals, being handled can be highly traumatizing.

Capture and handling of the animals on a regular basis is not only strongly interventive but carries associated welfare issues of high stress and possible injury in capture. (ICMO2, 2010 p.39)

[...] especially human management, housing, handling conditions have the highest chance to cause impairments of welfare. (Arndt, 2019)

Besides habitat and interventions, a major element common to all case studies was found in the adaptive capacity which Saskia Arndt defines as follows:

> I believe in a welfare concept in which **nature enables animals to adapt to certain things they encounter, and which finally allows them to reach a state that they perceive as positive again.** [...] behaviour is the major parameter for emotional states and adaptive capacity and, if possible, you should support it with physiological data maybe even neurophysiological data, that can be very helpful. (2019, emphasis added)

> The problem is if the animals can't adapt to the stress. So if they have the **opportunity and the ability to adapt to that stress then there's no problem** [...] Are they **equipped to deal with the challenges?** [...] if you put them in circumstances which allow them to do most of which is normal and natural for them, there will be challenges but they have the opportunity to adapt, then it should be Ok. And that should be the goal for rewilding. [...] if they can't, or if they have to go to extreme lengths to try to cope, so a polar bear in a cage going round and round in circles, stereotypic behavior. It is a coping mechanism but it's also a sign that the animal is really struggling to adapt and to cope. (Stout, 2019, emphasis added)

The quotes above are from two experts in the fields of ethology, zoology and equine veterinary science. But in the field, rewilders also emphasize the importance for adaptive capacity:

> *Laura Bernard*: What indicators do you use to consider that rewilding is gonna be successful? Do you have like natality so if after some time you have new babies... I guess it's good right?

> *H.*: Yeah it is it is but **I think the best sign that it will work is that then when the animals are well-adapted**, their system to react to parasites, diseases etc. and they can survive in the nature without being sick and if you have babies the social group can help protect the offspring from the wolves. (2019, emphasis added)

Here, H. points to the following factors: health, immunity, survival and self-defence capacity. The reason why slow release is opted for in Eastern Rhodopes is precisely because it is better for the adaptive capacity, which means higher chances of survival for the animals.

> [...] this is our role. When you make reintroduction, it is always stressful for the animal. They change their habitat... if you imagine that, it takes... even for the people it's hard, if you start you know, from Bulgaria for example to go to the Netherlands you will be pretty shocked. The habitat is different, food is different, air is different, water, etc. And that's why, at least we try to make this transition very slowly. To ensure not only that animals will be healthy adapt about but also that they will survive because sometimes if you make mistakes during this first period of adaptation, you might lose a lot of animals. (D., 2019)

At Monts d'Azur gentle acclimatization is also seen as a key ingredient for long-term success. The reserve recently acquired three moose from a zoo.

> Right now, they are confined in a pen to 'rewild' themselves, re-learn what wildlife is and get to know other species because obviously in a zoo they cannot. Everything is stressful and amazing for them, a roe deer, a wild boar passing by... The acclimatization is progressive because this pen is adjacent to the reserve so through the fence animals get to know each other. They will be there till March. We also need to understand how they are with their food habits and they need to get used to us. That's why every day we go in there, by foot, with the carriage, with a little electric car... All vehicles that they will eventually encounter in the reserve so that, when it happens, they don't go 1700m high and we never see them again. (Longour, 2020)

Besides, family structure and social organization also constituted important factors regarding positive emotional states experienced by animals. It starts during the selection of individuals to reintroduce:

> So they're selected as a social group because it is very important to reintroduce the social group of animals... It is definitely the case for the horses, they're very sensitive. (D., 2019)

Attention was also paid to interspecies cohabitation. At feeding points, things can get a bit stormy as competition arises for food. At Monts d'Azur and OVP, the feeding points are thought in a way that all animals can feed quietly, even the weakest. Furthermore, I collected some stories from the rewilders about relationships between animals. In Eastern Rhodopes, the Studen Kladenets reserve is a hunting area but there is a ban on bisons and deer which means that bisons are now in a fenced area.

> In the fall, the fallow deer would use uh.. in the bisons [pen] for example for protection of the small deers. The mothers would put the babies among the bisons because it's a better place. It was like a kindergarten [all laugh], the mothers came around the fence and started to call the babies and it was incredible to see, actually it's like a hundred of small deers that go out to the mothers. They managed to find protection. (D., 2019)

Another example is the mutualism when it comes to food or protection:

> *D:* [the bisons] are much more browsers than grazers so they eat bushes and trees and also if the tree is weak the bison manages to break it [...] So the bisons eat part of it and just let it, continue to go and eat branches, or leaves etc. and after the bisons there is a group of deer that follows them and they eat the rest of the branches.

> *H.*: It's complementary.

> *D.:* Yes and also for example in one area, at the beginning, with all the horses they all came in one meadow where all the cattle were over for the night and in the night the roe deer from the area they also go and sleep between the cattle and the horses, they search for protection.

Policies about euthanasia appeared to differ. As said earlier, there are no predators at the OVP, contrary to Monts d'Azur and Eastern Rhodopes. In an ecosystem with a complete trophic chain, predators and scavengers deal with old, sick or injured individuals who get excluded from the group and/or isolate themselves. These intakes also keep the numbers in check. At the Monts d'Azur reserve, animals may be culled in case of unnecessary suffering if there is no chance of survival. Dead bodies are brought to a plateau where vultures can access them. In Eastern Rhodopes, the hands-off policy prevails except for bisons and endangered birds because the populations are still fragile (7 bisons only). It means that veterinary help will be provided to try and save a life. At the Oostvaardersplassen, as the culling strategy aims at preventing the suffering of starvation during the cold season and regulating the deer population, it is nonetheless a considerable source of negative emotional states for the animals:

> Shooting families, disrupting the whole social networks of animals. Every year again by shooting so many... Talking about animal welfare [ironic]. (Drenthen, 2019)

It is something that the staff is noticeably aware of.

> *OVP ranger*: And sometimes it's from a nature-wise, from ecological basis it's sometimes... [grimace] it's scratching a little bit but it's okay. What I say this new policy it's for a couple of years, it's now this winter, it's not especially a happy winter with the bringing down the numbers because that's.. –that's more persona– I have a hard time..

> *Laura Bernard:* Shooting so many deer you mean?

> *OVP ranger*: Yes so bringing this out in the short period, I mean you could do it another way but that's what we agreed on. [...] I as a ranger, it's *"when is that animal is going to last, die or..."* that's not... That's, that's..[stutters] in animal welfare state it's lower then...

> *Laura Bernard*: It lowers the...?

> *OVP ranger:* Yeah yeah yeah. It's not the standard but um, yeah.

Meanwhile, three respondents objected the pain resulting from starvation:

> [...] that might be, from a biological perspective, a possibility because emotional experience is energy-intensive. [...] all the energy is given to life saving, no energy anymore for having an emotional perception either being negative or positive. That's a theory. [...] However, the question is when does that process will start? Maybe they are suffering for weeks and that at a certain point it's off. And that's maybe five minutes before they actually die. (Arndt, 2019)

> Ecologists show that saying death by starvation is a fairly mild way of dying, apparently. [..] And even people who go on hunger strike say that having... having real hunger is a fairly mild way of dying. (Drenthen, 2020)

Animals get used to it. It's not a mechanism that make them suffer. But they adapt their behavior to change circumstances so they lower the energy use and they will keep quiet and do not do any extra activity whatsoever. (Siepel, 2020)

An aggregate was found in Tom Stout's view of culling:

Honestly, I tell you from the beginning if someone says that they're going to shoot the deer and they do it cleanly, then I don't have a problem with that. It's not bad for their welfare because they were alive one moment then they get shot through the brain then they're dead. They don't know anything about it. (2019)

4.2.2. Visions of nature

Since the core topic is about rewilding, the notions of wilderness, wildness and what is 'natural' received particular attention. The code REWILDING itself co-occurred several times with the words 'natural' or 'unnatural', e.g. *"rewilding programs seldom reach their goal, or lead to 'fauna vervalsing', the wrong type of unnatural fauna"* (Hogenboom, 2019); *"[...] unless you fluctuate the number of grazers but that is seen in rewilding theory as unnatural"* (Siepel, 2020).

There was co-occurrence between the preciousness of nature, natural resources and/or ecosystems services and together with the codes DUTY, PROTECTION or CARE. The data was representative of the plurality of views about nature preservation. Below, D. explained to me how in Bulgaria, urban dwellers differ from rural inhabitants, both in their interests and experiences:

Laura Bernard: So for you do you think that putting the emphasis on economic opportunities like job creation or recreation for instance [...] Do you think it's necessary when you sell a rewilding project?

D: For the people from the towns yes. People from the rural area, you should have a different approach. I will give you a small example. We are in a small area where we get, let's say, deer and vultures etc. And to the people from the town I say *"OK you can go hiking, biking etc"* but for the local people who have cattle around, biking and hiking means disturbance of their own animals because the people from the town they don't understand and go past through the herd. Which is not good for the herd. So it's really.. the difference is between understanding and thinking of people on the town and people from this.. very.. how to say, isolated areas. But yes, if you have to preserve nature, it is good. It is good for the people from the town who can go and touch again the nature and it is good for the people from rural areas because it will give some opportunities, if they want to develop some different activities. It is not just be proud of what's going on in the area. (2019)

Rewilding as, you know, it has anthropogenic benefits and we need to realize those we need to sell those to gain support for rewilding [...] at the same time we have to realize the biocentric, the ecocentric benefits of rewilding. But at the end of the day, even those come down to having a wider broad scale anthropogenic benefit. If we're worried about.. literally about human survival, then we're not going to survive on this planet if we modify

> every single ecosystem and ecosystem process. We rely on those basic supporting services, and [...] having an appreciation of wonderment. You know wild nature in wild landscapes, huge wild landscapes that spurs me on. I just think well, we need to protect these places because once they're gone, they're gone. You can't bring them back again. (Carver, 2019)

> Nature and natural processes can be our ally in solving modern socio-economic challenges. Working with nature can protect us from floods, store carbon, prevent wildfires, secure drinking water supplies, boost climate resilience and ensure human health and wellbeing (Rewilding Europe, 2018 p.10)

Mentions of climate change resilience were also present in ICMO1 (2006), both Rewilding Europe Annual Reviews (2017; 2018) and personal communications with Steve Carver and the ranger at the Oostvaardersplassen. As patterns emerged, levels of frame could became visible. It was observed that instances of low anthropocentrism were connected to a micro frame specificity:

> My grandfather and the family of my grandfather, they were all owners of very big herds of sheep. And all this attitude to animals I have from my grandfather who has taught me I have to respect the nature and respect the animals. (D., 2019)

> I already had an interest in environment from the fact that my parents were [living] remote far north for the hikes and somehow the love of nature was, I think, probably inborn. (Kopnina, 2019)

> It all began of course in my childhood, so I was raised with animals. My parents spent a lot of time to teach me to respect animals as sentient beings, taking care of them. So we always had a lot of animals at home. [...] We went to zoos. We went to see animals outside so it's now that nature-inclusive idea. That's I think how I became addicted to animals a little bit and later on, I decided to study biology. (Arndt, 2019)

> My parents were keen amateur... naturalists I suppose you would say. And so I was brought up in a family who, you know, we were interested in everything to do with nature. They were keen bird watchers. So, we travelled around the UK. But since then... You know I've travelled in Europe. I've travelled in North America, Australia, [...] A lot of places. And for me being in those wild places makes you realise that humanity is not everything. (Carver, 2019)

The meso level manifested itself in managerial practices as the problem situation frame melds with collective actors (e.g. Staatsbosbeheer, Rewilding Rhodopes, partner organizations etc.), forming collectively defined issues, e.g. climate change mitigation, rural abandonment, etc. This last quote sums up the workings of cognitive framing; the love and respect that D. has for animals was transmitted by her grandfather (micro) and

she consciously reflects on the contradictory influence of the communist state (meso) on Bulgarian traditions where primeval knowledge sustains (macro):

> Keep in mind that in Bulgaria, we have very time long communist state. Before that, Bulgaria was country of more owners of plants and animals and these people were very collective with their animals. And the communistic people they destroyed this connection. It is very hard to explain now why you feel this way. [...] That tradition that was maybe destroyed by the Communist government but still, maybe I was happy but I was taught... I learned from my grandfather [pause]. Everything has respect, you have to respect them and they will respect you.
>
> [...]
>
> People, they don't know ecosystems services, for example the local people who are very rarely educated, they cannot... They own some primitive way of understanding everything. (D., 2019).

The following part will examine each rewilding project one by one.

OOSTVAARDERSPLASSEN

As said before, choosing the Oostvaardersplassen was a choice more motivated by the peculiarity of the case and the societal unrest around it rather than a decision based on the rewilding affiliation of the reserve. Regarding the philosophy, the staff at the reserve reiterated that birds are the priority, a fact confirmed by the latest report (Staatsbosbeheer, 2019). To my surprise, there was a consensus among respondents that the OVP *"should be kept as it is [...] and observe how the area develops"* (Hogenboom, 2019).

> I can't say that we made mistakes or my colleagues, former colleagues, made mistakes, they just said "well this is good" at that time, you know, **the paradigm is changing**. And so what I said, 20, 30 years ago it was just "oh we want rewilding areas" and **now it's more like society wants more controlled population, controlled areas** where the human beings can.. So.. Following that, you don't make changes, just learn and you go on. So it's hard to say in this context if something went wrong. (OVP ranger, 2019, emphasis added)

Both Martin Drenthen and Saskia Arndt see significant societal and scientific potential to the OVP:

> What I mean is you are doing something **unique** here. You have a once in a lifetime opportunity to study certain things. This has never been done before. So you have more obligation to do as much science as there is to be done. (Drenthen, 2019, emphasis added)

> When it comes to the Oostvaardersplassen that's a great area where you could **test out different strategies** because then something needs to be done there. [...] You have that great area which is fenced so we can try out a lot of things (Arndt, 2019, emphasis added)

But nowadays it seems that disappointment has taken over:

> Ah it stopped being interesting. Now this is just another… Another of these highly managed areas like they have so much of in the Netherlands already. (Drenthen, 2019)

> Well initially I was excited about it. It was something new. It was an interesting experiment but latterly I have become more and more disillusioned with the Oostvaardersplassen (Carver, 2019)

By the same token, the experts commissioned in ICMO2 think that "a lot of discussion in Dutch society on the OVP has been caused by different interest groups implicitly using different definitions of carrying capacity" (2010, p.18). They identified 3 types: (1) population-based carrying capacity, (2) ecosystem-based carrying capacity and (3) society-based carrying capacity. The first two refer to what an ecosystem can sustain in terms of populations. The last one is defined as "the level of population which will be accepted or tolerated by humans (often in relation to levels of impact on agriculture, forestry or conservation habitats which may be tolerated)" (ICMO2, 2010 p.18). In all likelihood, the portrayal of the Oostvaardersplassen has been hugely influenced by the movie *The New Wilderness* by Mark Verkerk (2014) who won a Rembrandt in 2014 (equivalent of an Oscar in the Netherlands). The movie presents the area as 'nature reborn 20 miles from Amsterdam' and earned the OVP Serengeti comparisons. It seems to have made an impression on many people: *"they had all these beautiful little animals too and even foxes"* (Kopnina, 2019*); "there was this huge enthusiasm about this movie. Because it's a nice story to believe. As a simple story there's real nature."* (Drenthen, 2019).

According to Martin Drenthen, it was the article from *The New Yorker* (Kolbert, 2012) that revealed the cracks in the storyline:

> And then someone, only one journalist, has to go over there and sees what happens and shows the fence and all of a sudden, **this whole story about wilderness crumbles**. Because that's clearly not true. […] this attempt to sell it as a new wilderness, […] that **backfired** a lot. And especially the movie er.. it's a beautiful movie but it's… so it's best to exclude the things that are so obvious there, that there is a train line, there are power lines, these apartment buildings and everything has been shot out. (2019, emphasis added)

> The New Wilderness. I'm like... yeaaah… [rolling eyes] But it's it's not nature. It is not nature for me. For me it's a big park. (Arndt, 2019)

The professor in Environmental Philosophy regretted the inconsistencies within the narrative:

> And that's really the real failure I think, that Staatsbosbeheer should have made much more serious attempts to come up with a serious genuine interpretation of what this place is about and what the value of this place is (Drenthen, 2019)

The backlash was especially strong to the extent that *The New Wilderness* presents idyllic nature. *"People don't like to see animals like that suffering"* (Carver, 2019); *"it is horrible to see it, of course"* (Arndt, 2019).

> It's the one that bothers me a lot because it's in my face whenever I go past it by train and it's been pretty obvious a year ago, two years ago, that it just looks pretty bad. It just looked bad. Even if you're a child and you look at it and you see dead trees and dead animals and just no... Nothing like it was in the film. Everything is just gone. (Kopnina, 2019)

Helen Kopnina could not help but wonder if the situation would be different with a less charismatic species:

> I mean, those those big grazers they evoke a lot of emotions in humans because, you know, it's that perception of cuteness, '*schattigheid*' in Dutch. If it really would have ugly [emphasis] deers or something like that, I wonder whether this society would be so concerned. (2019)

This element, together with the witnessing of die-offs, is certainly what drove the turmoil. This is supported by the fact that mortality figures –natural or caused by hunters– in the Veluwe forest are as high, if not higher: *"70 to 90% of the wild boar are shot every year".* (Drenthen, 2019). "The *big difference between Veluwe & Oostvaardersplassen is that at the Veluwe, also animals die in harsh winters, but society is not aware of that or not interested"* (Arndt, 2019). It chimed with the thoughts of Martin Drenthen when I asked whether building the Oostvaarderswissel (corridor connecting the OVP to the Hosterwold woods) would improve the wellbeing of the large grazers:

> It would help solve the static problem of animals standing next to a fence, not being able to move and being able to change their faith. That would be it um… But that's an aesthetic problem, that's our problem much more than this problem of those animals. (2019)

So is it, as suggested Frans Vera, a problem of human perceptions and exaggerated anthropomorphism or are societal concerns legitimately based? Whether the former or the latter, on this question Saskia Arndt was categorical:

> […] if society wants those big animals in there, we have to do something about it. And if they have those perceptions of animals potentially suffering is something humans do not want to see you have to do something about it. (2019)

As for reintroduced animals, the prima facie criteria seem to be their degree of wildness as well as the habitat they live in:

> The moral evaluation and public acceptance of management practices largely depend on whether these free-ranging animals are understood to be truly wild living or effectively as "kept" and managed by man. However, whether considered wild or "kept", there is a moral

> obligation on managers to take all necessary measures to minimise the extent of any unnecessary suffering. (ICMO2, 2010 p.15)

> I did see an argument that they're treated worse than farm animals because indeed farm animals would not be allowed to die slowly of starvation. (Kopnina, 2019)

> Again, a lot of knowledge or argumentation related to suffering is based on insights we have regarding kept animals. So, my question is: can we translate that to non-domestic animals as well? (Arndt, 2019)

> *Patrice Longour:* [...] If one day I would work in a zoo, my position would be different.
>
> *Laura Bernard:* The responsibility is different.
>
> *Patrice Longour:* Exactly. No matter the species, I would take all the necessary steps to effectively tend to the animal... But then it's a zoo, we're not talking about a wild animal! For me anyway a zoo animal is not a wild animal. (2020)

> When I'm thinking about the Oostvaardersplassen and I'm thinking about it in more context, thinking *"well, that's a non-natural system because of the fence"* and the fence implies, or rather to me anyway, says that we then have a responsibility to intervene. (Carver, 2019)

EASTERN RHODOPES

The Eastern Rhodopes project takes place in a vast region with low human density. The informants live in the Kardzhali region (biggest city is Kardzhali with 43,880 inhabitants) and mainly work in the Studen Kladenets reserve. Traditional livelihoods persist despite the rural exodus:

> Everybody wants to have good standards and a job. They cannot find it here so they move to other areas, for example in one of the parts this... we have a lot of Turkish[3] people there, most of them go to Belgium for work. (D., 2019)

A lot of villagers depend on agriculture and livestock farming is encouraged by the Bulgarian government through subsidies. The lives of farmers are however not easy; it is a lot of work to make a living out of farming and the presence of big fauna, particularly wolves, frequently lead to human-wildlife conflicts. Exasperated by wolves preying on their cattle, some farmers resort to poisoning which causes disastrous effects on the whole ecosystem:

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[3] Turks represents the biggest ethnic group (66%) followed by Bulgarians (30%).

> There are people who try to solve their problems with poison which is very nocive for the biodiversity. We had such case several years ago here in our area, a person put poison to poison the wolf and to protect some cattle and as a result there were, I think 7 wolves, 3 wild boars and a lot of animals that died from the poison.. It was horrible. It was good that no vultures died but... (D., 2019)

And again, the stark contrast between categories of people:

> These are people who live in the nature and **they're part of the nature**. [...] For them, the nature is their own home which is not understandable for the people from the towns. [...] absolutely not understandable. [...] I think that **we have two groups of people already**. And these people that live close to nature, they care for their own animals etc. and they speak a completely different language than the people from the towns. (D., 2019, emphasis added)

This baseline divergence explains the ways in which a rewilding project will be seen (and therefore accepted) by the local population:

> If I tell you that OK, we are going to reintroduce animals and it will be a good base for ecotourism, etc. you will understand it. But if I go and explain that to somebody from the village, they will not understand. But they understand that it is good to have other animals because if we have diversity of animals it will make the grass richer for their own animals. That's its completely different base; here they have tourists but they don't call them tourists, they call them guests. (D., 2019)

> I'm originally from the Black Sea and one old man was explaining that –and he was a fisher– that there's enough fish for the bird, for the dolphins and for the people. We always... the people always live... they are together with nature and with other fishes, of course they have losses but still.. there was some coexistence. But now I think we make all our attitude to the nature economical that's why the people the people are very bad with when they have loss from the wildlife. I think we have to change our attitude, that **we are part of it**. (D., 2019, emphasis added)

MONTS D'AZUR

Monts d'Azur is the project of one man: Patrice Longour. The reserve is his idea and together with his wife, it represents an achievement which took many years to complete. The Longours are responsible for the management of the reserve and Patrice deals with the veterinary care. *"That's his whole life. He can be difficult to work with because he rarely delegates"* an insider told me. This implication was very much felt in the elements of language used during the interview with the repeated use of "*I*" and "*at ours*" to designate the reserve. As a matter of fact, the family house is located in an enclosed perimeter within the territory of the reserve.

Patrice Longour vigorously position matches with the partner & participant position (De Groot, Drenthen & De Groot, 2011). He assured *"humans must exist […] but they must find their place in nature"* and insists that we must realize our dependency on nature and accept it. Their flyer describes the reserve as an "ecotourism pilot project" where the objective is "not to create a place where the animal is a merchandise but instead enabling the conciliation of tourism and ecology on a remarkable natural site where men are not masters but simple guests of nature". It immediately echoed the informants at Eastern Rhodopes who told me that, in the Kardzhali region, tourists are called "guests". The reserve, entirely funded by visitors, proposes a range of activities like hikes, horse-carriage visits or workshops.

For him, there is a huge potential in recognizing the status of 'nature producer' where humans are custodians of natural resources. In his opinion, such a status would play an important role in assessing resources at fair value and avoid the "capitalization of nature". He thinks this would also add value in the moral aspect and make people aware of their responsibilities towards nature. He has personally embarked on this project to make the French justice system realize that *"we're completely mistaken"* and it is urgent to maintain wilderness and preserve "*what we don't know yet".*

> Currently, 70% of medicines are made out of plants which can be identified. Treatments are then identified from customs and traditions. In fact, laboratories work like this. So, if we so-called "modern men", aren't capable of land-planning with big spaces dedicated to wild ecosystems […] we are eradicating a huge part of our future, I am telling you. Undoubtedly, there is a drug potential in nature that is for now completely unknown. For instance, a tragedy that is not just limited to the Amazon. (Longour, 2020)

4.2.3. Animal rights theory

The ART theme was the less profuse category, but the data obtained revealed interesting elements. To start with, animal rights were often seen as the natural consequence of extensionalism, i.e. the extension of rights attribution as it has been done over time, starting from men to women and minorities. Parallels were established between the causes, here for example:

> It's a very slow societal process in which the idea **of justice for minorities has been rather progressive** in a good way. So, by extension, it does seem very logical to me, [to have animal rights] and I think sometimes we see advocates of ecojustice or animal welfare put in the position to explain why we think so and I think it should be the other way around (Kopnina, 2019, emphasis added)

The key principles of ART are the rejection of speciesism, the acknowledgement of agency and autonomy (or self-determination). Some of these notions were fairly represented in the interviewees with rewilders. In all three cases, there was an understanding and respect of the wild character of the animal when it comes to

intervention. It is sometimes problematic as health problems arise. As I was discussing pregnancy issues with Patrice Longour, he revealed that:

> 9 times out of 10, animals in difficulty go hide in some places and you don't see them again… **I think we have to be modest** and say that the ones we see are just a small portion… when you are facing such problem, in function of the reaction of the animal… for example me, I helped a [bison] cow, she let me approach, I put her to sleep very lightly and practiced an episiotomy. […] **I don't compel any animal.** (2020, emphasis added)

The same attitude was found in Eastern Rhodopes about collecting animals for the night:

> It is enough to collect them [cattle] if you want –or **they want** to do that– in some open places for the night so they can sleep in protective shelter" (D., 2019, emphasis added)

> If one of the animals is hurt or sick, we might intervene with veterinary care, but we are very limited since these are wild animals. (Folkertsma, 2020)

However, a consensus surfaced from the data: most participants emphasize values of care and responsibility and mentioned the importance of a holistic approach where all levels (individuals, species & ecosystems) are taken into consideration.

> You've got to think about animal welfare at the ecological scale in terms of having all the components in the ecosystem present to enable those natural trophic interactions to take place (Carver, 2019)

> We need to make space for wilderness in order for animals to be able to achieve their life cycles. (Longour, 2020).

The possibility to achieve one's life cycle (from birth to death including reproduction) is widely agreed upon in ecology as what corresponds to animal welfare, i.e. their flourishing. Yet, this is a view that has been fiercely criticized in the recent years from scholars writing about wild animal suffering:

> […] their view is overly optimistic when it comes to animals in the wild. They believe that animals in the wild are able to, you know, deal with the challenges that they meet, and they think this because they are thinking and the continued existence of population. But anyone who looks at the reality of the lives of animals, anyone who is familiar with wild animal suffering knows that when it comes to individual sentient animals, this is not the case at all. (Horta, 2019)

Whether or not they were experts or practitioners, participants unanimously agreed on the necessity to reduce our footprint:

> The question for me is what do we do extra to hurt those animals? compared to, well, their normal life. (Siepel, 2020)

> Nature is full of animals killing other animals, and our response to this shouldn't be to add to the killing. (Donaldson, 2019)

> Our influence as human beings in a negative way, I want to diminish that. (OVP ranger, 2019)

> Should (Western developed world) humans accept a reduction in our current welfare (less opportunity, less wealth) in order to benefit others including future generations? Of course we should. But that's because we were never entitled to our lives of excess consumption in the first place. Our very high level of wellbeing exists at the cost of violating the rights of others, and so lowering our standard of living does not involve a violation of rights. (Donaldson, 2019)

> [...] you should somehow respect that sovereignty of nature by not interfering at all but then your humility is to make yourself less important. (Drenthen, 2019)

Persisting dilemmas were evoked, e.g. animal autonomy versus welfare.

> *Tom Stout:* And sometimes the people who are in favor of the animal rights would.. So they would probably be against contraception.

> *Laura Bernard*: Why?

> *Tom Stout:* Because we're taking away the ability of the animal to reproduce. We're making the choice for them. (2019)

As mentioned in chapter 2, collectivism and instrumentalism are frequently found in conservation. This research was no exception to the rule. Collectivism was observed through the large prevalence of SPECIES, POPULATIONS and ECOSYSTEMS over mentions of individual animals or the highlighting of biodiversity and ecosystem services. Clearly identifying instances of instrumentalism, however, proves not so easy since the use of keystone species to restore natural processes is at the heart of rewilding. In the Oostvaardersplassen the large herbivores were introduced in order to maintain the previous habitat necessary to rare Nature 2000 bird species. It is also made clear in the last SBB report (2019). The first bullet point of the list of tasks, intitled "Birds first" reads:

> From its beginnings in 1968, the Oostvaardersplassen has been internationally known as an extensive wet- land, with an enormous wealth of bird species. [...] This means that the conservation and improvement of the habitat of special bird species, which depend on the large wetland, is of paramount importance. (p.1)

This information was confirmed both during my field trip to the reserve as well as in my interviews with staff members. In 2010 however, the conclusion of ICMO2 stated:

> ICMO2 has found [...] no evidence that the present high grazing pressure would negatively affect numbers of Natura2000 species. On the other hand, nor did ICMO2 find evidence that the current high grazing pressure is a prerequisite for maintaining the numbers of most Natura2000 bird species. (p.25)

There is also an aspect of instrumentalism in Eastern Rhodopes as the reintroduction of bisons was partly motivated by providing carrion for the endangered vultures of the region: "The reintroduction of wild herbivores such as Tauros, horses, bison, red deer and fallow deer across our operational areas is increasingly boosting the availability of carrion for local scavengers" (Rewilding Europe, 2017 p.51). And let's not forget that anthropocentric motives are, at best considered as equally important as non-anthropocentric ones, at worst (in capitalist logics for instance), they override any other centres of attentions.

4.2.4. Capitalocene

As explained in the theoretical framework, the Capitalocene theory makes sense from the critical theory standpoint of this research. The Capitalocene frame is all-encompassing. In this section the connections between the Capitalocene concepts and the remaining framing categories will be explored. In Annex 2 can be found the classification of the codes in the Atlas.ti *Capitalocene* group.

A similarity across cases revealed that money can get in the way quite significantly. It is one of the reasons why the Dutch government abandoned the project of building the Oostvaarderswissel corridor together with political disagreements and why contraception at the Oostvaardersplassen was first dismissed because considered "prohibitively expensive" (ICMO1, 2006 p.39). The lack of funding can also interfere with managerial practices when it comes to expertise, as illustrated below:

> *Laura Bernard:* And how do you know when you select the species that it's going to be adapted to the biotope of the territory? [...]
>
> *D.:* You have to know what kind of food and what kind of habitat [...]
>
> *Laura Bernard:* do you also have a biologist? Or other people studying the environment before and saying "OK I think it's good, you can start"?
>
> *D.:* It will be great to have such experts, but you don't have enough money to pay them (2019)

In parallel, conservation is also affected: the rapid progression of species extinction and habitat destruction has been accompanied by a monetization of natural resources as they become scarce. The power of money creates antagonistic situations like in the example of big game hunting:

> [...] people pay thousands and thousands of dollars or whatever to, you know, to shoot a lion. I mean I wouldn't want to do it, but I can see some of the benefits that accrues to conservation in general. It's a difficult question. But I can see the arguments in favor of it. Similarly, I just find it distasteful. (Carver, 2019)

Nevertheless, alternative solutions exist and are as ethical as profitable:

> I might pay a much more... more people, you know, a large number of people would pay a smaller amount of money to take photographs of those creatures in the wild. And if that could outweigh the money which is generated from a hunting license, then that would be the best solution in my mind. But I know it's not always that easy. (Carver, 2019)

It is difficult not to draw a parallel with the Oostvaardersplassen which profits off the selling of the deer meat, sold and advertised as premium high-quality product[4].

> Basically, it became a biological farm because they shoot animals, they sell meat which is very profitable. [...] money is misused and should have been used for conservation rewilding. (Kopnina, 2019)

Many times over, when talking about visions and positions to nature, respondents tellingly pointed to the nature/society dualism:

> *Laura Bernard*: [...] local farmers, they have trouble imagining cattle and horses being wild considering the fact that once they were domesticated animals and that it would be the consequence of divergence in their baselines so what do you think about this?
>
> *Helen Kopnina:* Well it is just like **nature and nurture** [...]

> *Martin Drenthen:* And the real problem I think is that we have difficulty thinking in a non-dualist way, manner about this nature/culture divide and that something is either nature or culture or purely culture and that's how we spoke to say nature doesn't exist in the Netherlands which is just preposterous of course
>
> *Laura Bernard:* And why do you think this binary division is so persistent?
>
> *Martin Drenthen:* Because it's easy.
>
> *Laura Bernard:* Easy for who? Easy for what?
>
> *Martin Drenthen*: It lets us off the hook. So if you say "oh of course I'm for nature." I'm for nature that means "I'm for that thing over there in the fence, you know, then I paid my dues to the *Natuur Monumenten* [Dutch nature protection organization]". But it doesn't have any consequence for what happens there, doesn't have any consequence for how I live my life here. [...] makes life easy if that's the case because then we are always in charge and always define the dominant and we... We are the boss in the place we live.

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4 https://www.koopeenhert.nl/

> *Laura Bernard:* So we are reinforcing our position?
>
> *Martin Drenthen:* Yeah.

During my conversation with Henk Siepel, the topic of wild animal suffering was brought up and as I was arguing that pain can be found in multiple situations, he replied:

> *Henk Siepel*: Yes, always. But **we are not part of that anymore**.
>
> *Laura Bernard*: We're not part of that anymore?
>
> *Henk Siepel*: No, we don't like pain.
>
> *Laura Bernard*: True. I mean they don't like pain either!
>
> *Henk Siepel*: Yes but we are in the situation that we can avoid it. We have painkillers. (2020, emphasis added)

What is implied here alludes to the progress of medicine –made possible thanks to the Scientific Revolution– which tremendously improved human health around the world and that this knowledge distinguishes us from the rest of the animal kingdom insofar as we can shirk pain. Patrice Longour, on the contrary, was adamant in condemning this separation:

> I would like us to stop with this ambiguity of always preventing… opposing wild and human. Man must find its place in wilderness and we have to be humble enough to accept our dependence. Finding our place and respecting nature. (2020)

Elsewhere, remnants of Cartesianism were observed, in particular in the natural sciences where positivism and post-positivism continue to prevail:

> So one of the issues I have with ethological theory is a lot of it is still relatively anthropomorphic always based on assumptions, it's not… So **I am a scientist, I like to be able to test something and show and prove that it's true**. (Stout, 2019, emphasis added)

> [I]f you're into this re-establishing natural ecosystems in a rewilding framework then there's a duty of care and you have to monitor to provide **evidence of results**. (Carver, 2019, emphasis added)

> Scientific monitoring and applied research conducted in our rewilding areas, providing **evidence of rewilding impact** (Rewilding Europe, 2018, emphasis added)

Skepticism was palpable when the questions concerned animal welfare as well as animal rights:

> But what is good welfare? That is a tough one. I don't know [sighs]. Too much of it in rewilding, in my opinion, is done from what we think should be good for the animals which is to leave them alone and **leaving them alone should be good for the welfare** [...] I think you have to be slightly careful in how you interpret welfare. That's quite **complicated and difficult.** And I think people oversimplify it. And you can make it too animal-centric. **We decide** that it's good for their welfare. [...] Too anthropomorphic. (Stout, 2019, emphasis added)

> [...] **there's no research on that**. [...] we also use terms like suffering impairment of welfare by **reflecting on ourselves, of course it's all anthropomorphic driven** –which is fine, absolutely– and the majority of scientists, if I talk about emotions and animals if I even go further and talk about the possibility of feelings in animals, they ask me "*OK you have to prove that an animal is also capable of experiencing an emotion.*" I approach it the other way around because I look into evolution and I think "*OK if we humans are capable of experiencing emotions, you have to prove that animals are not capable of experiencing that.*" So that's... But that's very, you know, it's very polarizing also, this statement... usually it's the other way around. (Arndt, 2019, emphasis added)

That is where the Capitalocene meets Animal Rights Theory inasmuch as the former engenders the commodification and objectification of sentient animals that is rejected by ART scholars. These two characteristics are what makes the use of animals problematic, i.e. from instrumentalization to instrumentalism. Hegemony, oppression and commodification are seen in codes such as colonization, ecocide, animal overexploitation, human rights abuse, etc. (cf. Annex 3).

A fierce critique of capitalism was found in Patrice Longour's discourse:

> We prefer to waste wild territories for highways because it's cheaper. No matter if the distance is longer, the consumer pays for the kilometre, so the longer the better. [...] The entire capitalist economy is based on this thing. **Natural resources are worthless, that's the capitalist economy, that's the theory of capitalism**. What you pay is extraction, transport and transformation. [...] Natural resources are considered free, it's even written in the law. [quotes:] '*Nature is a common good'.* But the problem for capitalists is that nature is on private lands, so that's the first hiatus. **Supposedly it's a common free good but in fact it's entirely privatized.** (2020, emphasis added)

4.2.5. Conservation/ecology

The biggest subgroup in this category was *Management.* In *Management,* different management styles or approaches as well as idea formation, decision-making, deliberation, challenges, trajectories, outcomes, etc., were gathered and ranked according to their groundedness (cf. Annex 3).

Conservation is a "broad church" according to Steve Carver. It was confirmed in the data with no less than seven branches: fortress conservation, New Conservation, preservation, ecological restoration, species protection, compassionate conservation and rewilding. Martin Drenthen distinguishes two main types: the traditional "stewardship" conservation and another one, which includes rewilding, characterized by hands-off management in which the "*ecosystem is allowed to take of itself again*", i.e. nature is autonomous. He said that in their extreme form, they both turn problematic: stewardship becomes paternalism, "*leads to a zoo or a park*" while *"extreme rewilding in the sense of only giving room to nature leads to indifference* [of species dying out]". According to him, "*the gist of rewilding is to loosen control. Step back. To step back and to trust that natural processes will produce something worthwhile*". Paradoxically, he, as well as other participants, wondered if human influence is escapable at all:

> You always have human influence […] That's us deciding… how it should look […] That's our position. We are the ones determining the meaning of things, we are the other ones having that discussion. (2019)

> Humans as nature make choices. (OVP ranger, 2019)

> We make that decision, we make that call. (Siepel, 2020)

> However, we're saying you know that's nature-led but it's us making this decision. […] who are making the decisions as to what to do, where using natural processes that are enabling natural processes to re-establish themselves. (Carver, 2019)

Unexpectedly, and unlike what the literature suggested, the respondents' definitions of rewilding were rather unanimous, i.e. restoration of the big natural components with the help of keystone species such as apex predators, (those at the top of the food chain) or large herbivores. Nevertheless, there were some distinctions in the practices, for instance with reintroduction. Soft release focuses on acclimatization while hard release does not include provision of food or shelter (Kleiman, 1989).

> We prefer to work with soft release. This takes much time and effort… Is more difficult but everything has to… all the processes should be very slow. Different steps slowly slowly through exchange of herbivores. From domestic animals to the wild. (D., 2019)

For the rewilders in Eastern Rhodopes, the adaptation period is the most crucial moment, the first weeks in particular: *"In the first week it's very important not to have additional stress and to make the transition from food they were used to the new food"* (H., 2019). The adaptation period is the transition period during which the individuals will accustom to the life in the wild. It means managing to find food, water and shelter. The social organization is particularly important too: *"If the horses don't know how to protect themselves at the beginning they have very high chance after some month the wolves attack the group of horses"* (D., 2019) In order to help them, they revealed some of the tricks they use:

> we uh.. put some Karakachan dogs that is good protection at the beginning from the wolves just to give warning, a little bit of distance for the horses to recognize wolves, to have... animal smell that this is danger. Also we gather horses together with cattle at the beginning, cattle from many years they know wolves and they know how to defend themselves and this trick... is.. takes 1 to 3 years. And the new generation of horses, later on, they have social group good enough for the protection against wolves. The group is stronger. (D., 2019)

Indeed, the first years of the Konik horse reintroduction, not only a foal was eaten by the wolves but also a stallion and some mares got attacked, which is very unusual. *"It was visible they could not protect themselves"* explained the rewilding officer. *"And after this case they actually became stronger".* With reintroduced captive horses, the collective aspect can be a challenge. My guide at Monts d'Azur confirmed this, explaining that horses in captivity have no experience of what a herd is like. The Przewalski mares struggled quite a lot with their first foals and it took time for the hierarchy to constitute itself. The fact that bisons and Przewalski horses had not cohabited for thousands of years was also an aggravating factor (Longour, 2019).

> To adapt maybe they learn from other animals... they don't know. How to find places with mineral but also there are some plants or trees that treat them against parasites or other problems. For example in our area a lot of animals if they have stomach problem they started to eat a specific bark and there are some... it helps them to clean themselves from some parasites. [...] When you asked me when we know if this is successful so when they use the food they have in the area for treatment or to feel better, it means that, ok, they now are ready to be completely free (D., 2019)

Besides, it appears that practitioners rely too strongly on science for policy and decision-making when it comes to rewilding. Mainly they cited concepts such as (bio)diversity, grazing, ecosystem services, regeneration of flora, natural processes, trophic cascade or trophic interactions and connectivity or green corridors. All rewilders collaborate with biologists, ecologists and/or botanists. These experts oversee monitoring, taking censuses of species of plants and animals and play a role in the projects through the advice given. At the Monts d'Azur reserve, the Longours have been collaborating with Jean François Suret from the Pic Vert organization; the ecologist Peter

Cornelissen is in charge at the Oostvaardersplassen and botanists are also involved in the Eastern Rhodopes for assessments. Yet, good adaptation and solid scientific expertise are not the only ingredients for successful rewilding: D. who is a coordinator of the Eastern Rhodopes rewilding project and works for the LIFE vulture project repeatedly stressed the crucial aspect of local support:

> You cannot go somewhere and just put some animals, explain to the people "*it will be so nice to have, for example deer"*, to put some animals and to disappear... No. You should make it together and they should feel happy with what is going on. [...] In general, every rewilding should be made by people and you should involve the local people and search for their support. Otherwise it is better not to do it. [...] without local people you are completely lost. (D., 2019)

This vision is shared by Steve Carver, who mentioned *"bottom-up buy in"* and that "*community-led*" projects are essential. To incorporate this dimension the IUCN Rewilding Task Force developed their own 3C approach:

> [...] we dropped the carnivores entirely. Because not all rewilding projects necessarily include carnivores. It is very similar conceptually but different in the detail and it's still called the Three C's model but that new 3Cs model is 'Cores, Connectivity and Coexistence' (Carver, 2019)

He explained that replacing 'corridors' with 'connectivity' was a way to keep the aspect of ecological connectivity while including people. *"So, connectivity between people. And wild spaces".*
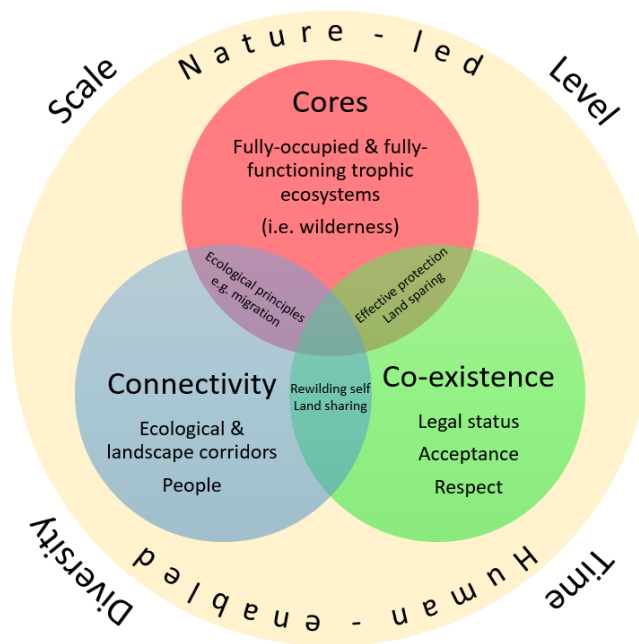

Fig..17: the new 3C (source: © IUCN CEM Task Force)

Similarly, decisions and policies must be embedded in society: *"you need to be embedded in society and if society wishes to change that policy that's okay"* (OVP staff, 2019). In keeping with this topic, collaboration was evoked several times as an important dimension with hunters, farmers, residents and authorities.

> *Laura Bernard*: How is it with the hunters, the... You know, dialogue and discussion and negotiating like no-take zones and things like this?
>
> *D.:* Depends on the people. But er.. it's.. sometimes it's different, sometimes it is easy but on the highest level, we work with them very successful together. [...] For Eastern Rhodopes there is more than 30 years' work with local people. (D., 2019)

> We have very good connection with the livestock farmers. They also keep animals where our animals are, they give very good feedback and information because they also take of animals, they have eyes to see if your animal is okay or not. For me personally this is the best assessment because the people who work with it. (H., 2019)

The same situation applies at the Monts d'Azur reserve, where Patrice Longour confesses *"getting along with hunters"* and advises against excluding them from discussions:

> Everyone must be present at the table and we need to listen to everyone and progressively reach positions which are just and balanced. (2020)

Associations with nongovernmental structures are also very common in rewilding: "Rewilding Europe is working with partners such as WWF, BirdLife and scientists from across Europe" (Rewilding Europe, 2018 p. 10). The project in the Eastern Rhodopes includes no less than 8 different actors.

CONSERVATION SCOPE

The focus of conservation can concern ecosystems, species, individuals or a combination of these elements. But dilemmas might occur. In Eastern Rhodopes for instance, the animals get an antiparasitic treatment, but this treatment turns out to have adverse effects on smaller organisms such as insects:

> *H.*: Animals in the nature, a lot of insects like beetles [...] they eat a lot of eggs of parasites and small parasites. They make the nature better. But some time of the year, some treatment, veterinary drugs, from the time of year that the beetle[population] is high... it has possibility to kill the beetle and you have to give veterinary medicine every year
>
> *Laura Bernard*: like a vicious circle?
>
> *H.*: Yes. You have to find the time in winter or to choose this veterinary medicine that is safe for beetle because the vulture eat the body of dead animals and it protects other animals from diseases. So, they eat the parasites' eggs and they protect them [other

animals] for the future. And this is not so easy, you must do so many things for nature, make decisions to make your population healthy but also to protect nature. (2019)

On this topic, the experts' views were concordant:

We need to keep these different levels in mind. Animal individuals can't thrive in failing ecosystems. On the other hand, there can be a 'thriving' ecosystem in which many, even most, individuals live a hellish life. Ideally, of course, we would hope for thriving ecosystems full of thriving individuals. Unfortunately, this isn't how our world is structured. We die, often in difficult circumstances, and our deaths are often an opportunity for others to live. There is an inherent tragedy and suffering to all life on earth, and we can't fundamentally change that. (Donaldson, 2019)

[It is] a nested series of priorities I suppose as you move up through the ecological scales you become less concerned about the welfare of the individual, more about the species and then the broader ecological scale of the ecosystem itself. (Carver, 2019)

When his opinion was asked about helping wild animals in case of natural hazard, ecologist Henk Siepel said:

You should help the ecosystem because when your help only one of two species, that attracts the attention for one way or another. Then helping the population is no guarantee that you really help the ecosystem. When you help the population at a higher level it can have a disturbing effect in the recovery of the ecosystem afterwards. (2020)

CHAPTER 5: DISCUSSION

In this chapter, the findings are discussed and analyzed to subsequently answer the research question. After grouping data into cognitive themes and identified levels of frame, the goal was to explore barriers and favorable conditions to the incorporation of welfare biology in the case studies.

5.1. Analysis of the results

5.1.1. Cognitive tensions & levels

The results showed that all themes feature conflicting views associated to the nonhuman. They are found at multiple crossroads; between clashing models of nature and overlapping levels of frames. From these interactions, our visions of nature emerge which, in conservation, directly affect the action repertoire of practitioners. In the same fashion, the conception of welfare biology is tied to frames that deal with the value we attribute to animals. In the Capitalocene frame, animals are commodities whereas in ART they are considered as sentient autonomous subjects. Moreover, perceptions are accompanied by emotions, as Saskia Arnd rightly points out:

> So in these kind of discussions it's mainly about emotional perception and it's very difficult to change emotional perceptions, how people react to things. (2019)

Several tensions were identified. The first and central one is the nature/society divide. It is an explicit point of contention in the premises of rewilding as the meaning and naturalness of 'wild' is interrogated. The OVP case demonstrates that if a situation is deemed abnormal or unnatural, its authenticity will be challenged. After reaching a semantic agreement, questions about outcomes and strategies remain: what is the baseline? How do we achieve that? And, how much of wilderness is human society ready to accommodate? The degree of social acceptability of each case study confirmed that "nature is experienced within specific spatial and temporal contexts, a snapshot of 'wildness' in time and space." (Van Maanen & Convery, 2016 p.303), with a distinct demographic fracture in Eastern Rhodopes.

On the one hand, the omnipotence and omnipresence of humans was admitted and questioned, revealing a consensus that we ought to diminish our footprint, "step back and sit down" but on the other hand, we simply struggle to let go: nature is expected to provide resources, ecosystems services as well as aesthetic recreational spaces. *"Trust that nature will produce something worthwhile"* (Drenthen, 2019). In other words, trust that nature will produce something "worth the time, money, or effort spent; of value or importance." (Merriam-Webster, n.d.). Here, an innocent statement at first sight reveals the capitalization of nature. Even when we "trust nature" and let things unfold, we do so with the hope that, at the end of the day, there is something to gain. Do we expect something in

return? Because of a prior investment or because we feel entitled to a reward? Worthwhile *for whom*? This leads to the second and most important dilemma: '*For whom do we do it?*' followed by 'Are we entitled to make this decision for someone else and if yes, on what basis?'.

The second tension is cause by a conflict between conservation scope and welfare biology. Welfare findings hitherto solely concerned reintroduced individuals and not the wild native species already present in the area. If evidence shows that there is a link between trophic chain and biological diversity (Duffy et al., 2017; Galetti, Pires, Brancalion & Fernandez, 2017), data about rewilded trophic chains is still scarce (Bakker & Svenning, 2018). Van Klink and (2018) indicate that, at moderate densities, large herbivores increase grassland arthropod diversity but when present in large numbers, they have the opposite effect. They might even destroy ecologically interesting species such as the levee in the Millingenwaard (Sýkora, Stuiver, de Ronde & de Nijs, 2009). The example of the Yellowstone park in the United States is the most used example to sing the praises of rewilding. Whilst the return of the wolf has indeed contributed to boost the biodiversity through the ripple effects provoked by the new 'landscape of fear' (Peterson, Vucetich, Bump & Smith, 2014), predation was clearly not good news for the elks. In fact, it seems to have been more auspicious to generalist species than specialists (Horta, personal communication, 13/12/2019). Horta (2010) argues that if intervention is not inherently wrong, we should do it from a nonspeciesist viewpoint and reject biocentrism for that

> those who can be benefited or harmed are those individuals who have the capacity to have positive or negative experiences. [...] ecosystems are entities which are not conscious. Only the individuals who live in them are. Hence, the latter are the only ones to be morally considered, not ecosystems, biocenoses or biotas as such. (p.180)

Therefore, it is essential to compare the state of the rewilded area with a non-rewilding situation and to monitor changes as they develop in vegetal and animal communities (Van Klink & WallisDeVries, 2018). This is where welfare biology proves useful as it explores the interconnections between fitness, repartition, diversity and behavior of animals and welfare states. And if –or *when*– we are able to evaluate the aggregated wellbeing of sentient beings in a given ecosystem, we should restrict our conservation practices to positive interventions only.

Third, while veterinary care is certainly helpful in some situations, e.g. surgery, contraception, treatments, etc., flaws still persist. Whereas contraception would greatly reduce mortality, moral questions ensue: What about the biological drive to have offspring, the natural bond between a mare and her foal? What animals need individually is different from what they need collectively, and this results in dilemmas about the scale, scope and nature of interventions in the wild. Thus, at the heart of welfare biology and from the start, the concept of animal welfare is burdened with difficulties. Though technical and practical challenges (e.g. funding, legislative framework) are major

obstacles, the biggest determinant lies in the willingness of the rewilders. In the eyes of Rewilding Europe –which declined participating– the priority seems to be elsewhere, despite the ever-increasing number of animals used in breeding and reintroduction programs as well as growing financial capacity[5]. In the field however, rewilders may well be ahead in a more general sense with practices revealing favorable ground for the incorporation of welfare biology, despite Eastern Rhodopes and Monts d'Azur having already applied certain practices ahead of time.

The micro level data illustrated that the familial context played a part in the participants' perception of nature and, consequently, adherence to cognitive principles and rules. These multiple interpretations "are intertwined with different notions of personal and social identity" (Drenthen, 2016 p.2) and influence one's personal development, particularly as they choose an education and a career path. Thus, visions of nature carry weight in how they live their lives and behave in social contexts. This is where the link between micro and meso is revealed as interactive collective contexts happen and the workplace is no exception to that. Cognitive frames inevitably influence views and strategic decisions upheld by organizations, even more so in family businesses (Harris, Martinez & Ward, 1994). With respect to implementation, structural views and interpersonal process views are important in the elaboration of strategies (Skivington & Daft, 1991). The degree of consensus, i.e. shared understanding and commitment, as well as the communication between managers (vertical and lateral) are of major importance. Rewilders must assess both internal and external dimensions of the strategic context. Internal means the organizational structure, the structure and the leadership; external is characterized by the environmental uncertainty. It is where practitioners encounter most difficulties as they run into the "all-pervasive, virtually unchangeable, context-setting" macro level (Strydom, 2009 p.6). Differences between countries proved insightful for the analysis. The case of the OVP and the polemic which crystallized around it hinges on the Dutch idea of a managed environment (Van der Heijden, 2005), reflecting the human fetish for controlling nature (White 1967; Holling & Meffe, 1996). It is noteworthy that René Descartes wrote most of his major work in the Netherlands, "model capitalist nation of the 17th century" (Marx, 1977 p.916). With France, the same legacy prevails as the 18th century *Lumières* embraced the Scientific Revolution. Likewise, Bulgaria carries a legacy of 50 years of communist regime in Bulgaria which affected organic traditional values.

So, are we doomed to stay in clashing biosemiotics environments? Against all odds the organic, mechanical and reflexive models of nature, though dissimilar, are not mutually exclusive and can coexist. "Western representatives of the reflexive model are reaching back towards the organic model to save certain of its qualities for integration and articulation at the more complex reflexive level of contemporary society" explained Piet Strydom (personal communication, 21/03/2020). For the rest, it is plausible that the animal rights movement would reach macro level frames, e.g. the cultural frame, and "play

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[5] their budget estimation for 2019 was 4.5 million euros and a 6-million-euro loan agreement was conceded by the European Investment Bank in 2017

a central role in [the] institutionalization and hence the organization of society" through the master frame (Strydom, 2009 p.15). If such a thing would happen, it would lead institutions to adjust and update legal and regulatory frameworks (McInerney, 2004).

5.1.2. How to rewild? Synthesis of management approaches

Concerning the wellbeing of animals, it was observed that the notions guiding the rewilders commonly covered the three dimensions of welfare biology, i.e. fitness, sentience and naturalness. Naturalness being the most fought over, it was also the most ambiguous one. In rewilding, a good or a bad welfare is entangled with where the animals are located on the wild-domesticated spectrum (fig. 3 p.12). It must be kept in mind that, as Saskia Arndt summarizes, *"optimal welfare doesn't exist"* for humans or the nonhuman animal; the adaptive capacity is the determining factor for assessing the welfare of rewilded animals as it enables them, in a situation of negative welfare state, to reach a state they consider as positive. At last –and that is what welfare biology puts the emphasis on–, a contextualization is necessary to examine both the biological environment, e.g. type of biotope and biocenosis (or biotic community) and season (cf. carrying capacity variation), as well as the societal one.

That said, conservation methods in the 21st century are evolving and adapting to societal concerns over animal welfare while simultaneously being conditioned by the economic system in which they arise. Neoliberal capitalism imposes a model of continuous growth, profit maximization and Cartesian rationality so much that any business model is obliged to abide by the rules in order to survive which means being economically viable and building up scientific credibility. In the field of rewilding, it seemed inescapable as modest income families seek guarantee that rewilding programs are accompanied by financial resources, qualified by Tanaescu (2017) in her study of the Rewilding Europe Danube Delta project as "economic rejuvenation" through the "commercialization of wildness". The data also revealed that the involvement of the locals is seen not only as a prerequisite but also as an ingredient of success and a guarantee of durability. Locals should be informed at the early stages of the project and be given the chance to be actors of the project in order to "own it" (Carver, 2019). Where a participation or collaboration was present, it could be associated to three main reasons:

- **A sentiment of pride.** In Eastern Rhodopes, locals are proud of the efforts undertaken in their region and proud of their emblematic local species (e.g. vultures or Karakachan horses) and today this pride extends to the newly introduced bisons and deer. At the Oostvaardersplassen, the pride is rather associated with economic considerations and the role of ambassadors.
- **Perceived benefits** in having a rewilding project in the area. Economic benefits predominate, especially for people with a low income who can, thanks to tourism, diversify their activities and sources of income, followed by recreational purposes (hunting, ecotourism, hiking, etc.)
- **Ecosystem services** which include carbon sequestration, oxygen production, resources production (timber, fish, game) and, increasingly important in the eyes

of the people, climate mitigation. Not to be ignored were mentions of aesthetic appreciation as well as consideration for the intrinsic value of wildlife and the importance of preserving species and habitats.

These elements can now prove useful in facilitating the incorporation of welfare biology. As the market for ecotourism is increasing, animal studies show enormous desire for wild encounters –or as D. said, "touching nature", echoing Monbiot's "rewilding of our own lives […] fill them with wonder and enchantment" (Sahn & Monbiot, n.d.). I believe this desire can be geared towards what Chilla Bulbeck names 'respectful stewardship of hybrid nature' whose advocating foundations rest upon "emotive and intellectual approach to wildlife understanding and management" (2005, xix). Firstly, all three case studies showed that locals, in particular the rural community, care a lot about animal welfare. Secondly, the presence of perceived benefits was correlated with local support. Therefore, an assumption can be made that support for a given rewilding project is accompanied by expectations concerning (1) how the animals will be treated[6] and (2) economic interests. Where these align, the blueprint for ethical ecotourism is formed. It remains to be seen what limits conservationists and promoters will impose, knowing the negative impact of increased human activity on animals and ecosystems (Bötsch et al, 2018, Hambler and Canney, 2013; Larson et al. 2016; Taylor & Knight, 2003). For Patrice Longour, ecotourism facilitates economic acceptability through which social acceptability occurs. He argues that social acceptability goes hand in hand with the recognition of wild nature, the acknowledgement of our dependence and the imperative of protecting it. Again, this finding echoed another of Tanasescu's (2017):

> The fundamental conundrum of rewilding is how to bridge what rewilders perceive as ecological imperatives with the reality of the meaning of those practices in actual human lives. (p.344)

To help bridge this gap, a shared vision is primordial. With 'vision' I refer to what I will call an 'ontological framework', i.e. a structure in which essential concepts are laid out: who we are in and vis-à-vis the nonhuman world? What is society? What is nature?, etc. Then, parties need normative agreement: What is good, right, just, enjoyable, etc.? as well as the opposite. This represents the foundation for desires to "become structured and norm-aligned" (Therborn, 1999 p.18). Lastly, –and perhaps most important as rewilding appeals to hope and wonder– the realm of possibilities and its boundaries in which ambitions but also fears materialize. This final element places "our sense of the mutability of our being-in-the-world" (Ibid) and delineates change. Together, these elements form what Therborn calls modes of ideological interpellation.

In each project, the management represented manifestations of the meso level. Overall, there were many common points between Monts d'Azur and Eastern Rhodopes,

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[6] The case of the Oostvaardersplassen however, show that baseline divergences lead to misunderstandings and conflicts.

some quite striking like the identical use of 'guests' to qualify visitors. In the same fashion, rewilders shared the view that humans are not entitled to monopolize resources and territories, as well as humility, modesty and deep respect for nature and animals. Similarly, they both have a 'familial' management approach. As for Patrice Longour, he has absolute free rein and indisputably, his philosophy is everywhere. The Eastern Rhodope team is rather small too. On the contrary, the Oostvaardersplassen management is multi-layered with three main stakeholders: the province of Flevoland, the Van Geel commission and Staatsbosbeheer. Added to that, the public attention that it receives feeds a constant feedback loop. When talking to staff members, I could distinctively identify the legacy of the bad press. Nearly ten years after, the shadow of the socio-political uprising is still present and so is the relative pressure. Because they are not subject to such scrutiny, the other rewilding areas enjoy more freedom and can afford to make mistakes; the repercussions would be smaller. On top of that, they benefit from the support of the locals whereas, from the beginning, local farmers have expressed their discontentment with the OVP.

To sum up, the findings suggested that decisions must be made in a comprehensive way and that opting for a holistic approach is the preferable option to all scenarios, i.e. in the words of Okumus "a comprehensive view and look at content, context, process and outcome simultaneously" (2003, p.878). Societal and political discussions are multidimensional, as highlighted by ICMO2 (2010), and this is the reason why attention must be paid to both the multiplicity of stakeholders *and* the diversity of cognitive schemes –including inconsistencies which, of all, require extra scrutiny.

5.2. Conclusion

Before concluding on the research question, a brief overview of the subquestions is fundamental. **"What is welfare biology and what does it propose?".** Welfare biology is a new field concerned with the wellbeing of animals in their natural environment which combines insights from zoology, ecology, animal welfare science, pathology science, as well as wildlife management. It seeks to gain a better understanding of animal lives, particularly wild animal suffering. Its prospects in the field of conservation are enormous, from both a theoretical and a practical perspective but as demonstrated, it ought to rest upon Animal Rights Theory in order to safeguard animal interests.

"What cognitive frames do we have about nature –in particular, nature preservation?". As Strydom (2010-2011) stresses, "there is unitary contemporary culture of how to relate to nature in our late-modern world" (p.8). The backdrop of the nature cognitive frames articulates itself around three models of nature (organic, mechanical and reflexive) manifesting themselves at different levels (macro, meso and micro). In order to comprehensively cover our interaction and positioning vis-à-vis nature, animals, and society, four themes (*Conservation/ecology, Visions of nature*, *Animal rights theory* and *Capitalocene*) were selected. There is no doubt that many more can be identified and fit alternative research purposes. The results confirmed that the field of

rewilding is at the crossroads of different models of nature, some hardly compatible like organic and mechanical because of conflicting rules and principles. These incompatibilities are the source of cognitive frictions like the nature/culture dualism. Yet, conciliation and complementarity can occur.

"How is policy implementation influenced by cognitive frames?". It has been observed that there is a direct relation between the cognitive frames upheld at different levels and the appreciation of animal welfare which is the major variable influencing the implementation of welfare biology. The combination of cognitive orders indicates the action repertoires chosen by the parties in function of their respective cultural model. The incorporation of welfare biology in the practices of rewilders is first influenced by the micro and meso levels to a large extent and the macro frame to a relative extent, e.g. institutions and government in place, national culture.

To conclude, I will return to the research question **"How is welfare biology conceived and implemented in rewilding projects?"**. This case study offered insights of semiotic practices in rewilding and especially the "intimate ways in which people make sense of themselves and their surroundings" (Tanasescu, 2017 p.339). The findings showed that *Conservation/ecology*, *Visions of nature* and the *Capitalocene* are predominantly influential with regards to management whereas *Animal Rights Theory* was lagging. Though the veterinary care is nearly identical for all three areas, the perceptions of animals differed among rewilders. It seems more connected to the positionality of the rewilders (anthropocentrism) and character of bond, and less so to the rewilding vision. The comparison showed that welfare biology is inconsistently incorporated by rewilders, more so in the implementation phase than in the design of the project. It was particularly true for the Oostvaardersplassen as a number of ICMO1's recommendations were ignored the years following the report (ICMO2, 2011). In this regard, Eastern Rhodope and Monts d'Azur fared better. They both had co-occurrences of low anthropocentrism, animal rights values and a comprehensive approach to animal welfare, i.e. one that includes fitness, sentience and naturalness. These create favorable conditions for welfare biology to take root, together with social acceptability. Social acceptability can be achieved through the involvement of local actors and the emphasis of benefits –be them anthropocentric or not. Since no single position is achievable concerning animal welfare, agents should instead work towards an ''overall vector of preferences and valuations'' (McInerney, 2004 p.31), a synthesis that is the result of the collective diverse and divergent viewpoints. By incorporating a critical animal rights standpoint, I have sought to ground the foundation of rewilding practices in a way that decisions are made together with animals and not on their behalf or at their detriment.

It is of utmost importance that conservationists unflinchingly examine the motivations of their projects and self-reflect on these before rushing into new strategies and interventions. Such examinations should include a thorough assessment of the parties' interests based on sentience and bio-proportionality to avoid nativist, collectivist and instrumentalist pitfalls. Besides, I argue that the ontological framework in conservation needs to change. The normative agreement's basis should be the cessation

of illegitimate power over animals and the establishment of processes "in which mutual negotiation is possible" and where animals are "empowered to make their own decisions" (Donaldson, personal communication, 11/04/2020). To this date, compassionate conservation seems to offer the best integrative model (Bekoff, 2013; Wallach et al., 2018). Whilst more research is needed for welfare biology to establish itself, it is certain that education, awareness campaigns to the public and workshops destined to authorities, policymakers and conservationists will contribute to its mainstreaming.

5.3. Limitations and reflections

In this section, the shortcomings of the research will be laid out and then I will reflect on my methodological choices and finally, compare the findings with the theory.

Because of time considerations, I deliberately avoided going in-depth regarding the policy implications of rewilding projects. Although I have tried to be as systematic and thorough as possible, limitations are observed, for instance in the data collection. I encountered several obstacles during the contact phase. It should be noted that Rewilding Europe declined participating in this study, which is regrettable considering its dominant position in the European rewilding field and the considerable scope of its projects. For the Oostvaardersplassen, I did not obtain the interview with the herd manager nor with the veterinary which obliged me to fall back on the assistant herd manager.

5.3.1. Reflections on methodology

Concerning the data collection, the systematic analysis was somewhat compromised by disparities among interview guides. The Oostvaardersplassen was the first case study and a lot of specific questions were asked to the detriment of questions about underlying themes. My selection of respondents was a gradual process as was the constitution of interview guides, which explains the important variation across interview guides. While going in depth is not an issue per se, with hindsight I see that some questions did not prove very fruitful and that other inquiries would have been more appropriate and relevant for the bigger picture.

5.3.2. Reflections on theory

The results reflected the linkage between views on nature and "diverse political responses to and engagements with nature" (Van Herzele, Aarts & Casaer, 2015 p.540). As Dubois et al. (2017) report, the study showed that the attention devoted to animal welfare in conservation appears to be growing. However, grey areas persist: uncertainty about species assemblage (Ruscoe et al. 2011) and underestimated consequences on aggregate wellbeing (Horta, 2010). Besides, it confirmed that collectivism and instrumentalism are still commonplace to meet biodiversity and ecosystem stability criterion (Wallach et al., 2018) at the detriment of individual animal wellbeing. In that sense, the hypothesis (see 1.3.) was confirmed, i.e. the incorporation of welfare biology is

flawed (the OVP was particularly representative of the mismatch between design and implementation) but the use of cognitive framing was revelatory in identifying implementation prerequisites. Flint et al., (2013) observe that the perception of ecosystem services articulates itself "in the nexus of anthropocentrism, utilitarianism, and notions of nature as separate from humans". To some extent, the rewilding visions in this study corroborate this statement, but ecocentric values were found to be rather dominant, as observed by De Groot, Drenthen & De Groot (2011). The practices echoed the contextual care approach advised by Swart (2016) and the identified local pride backed numerous wildlife studies in supporting the evidence between acceptability, multi actor collaboration and shifts in values (Glikman, Frank & Marchini, 2019; Messmer, 2000; Swart & Keulartz, 2011). For Washington et al. (2018), who declare that ecocentrism is the pathway to sustainability, the analysis demonstrated that nonspeciecism is certainly the pathway for welfare biology to establish itself in rewilding.

5.4. Recommendations for future research

While cognitive frames represent substantial barriers to paradigm change in conservation, the cultural socio-economical context and the legislative framework should be considered too. These factors are what might restrict the generalization of the findings in the sense that, as they differ across time and space they interfere with the models of nature, levels and frames depicted, despite commonalities. It is advised to extend the scope of the research to examine the influence of external collective agents such as governmental actors (national and local) and the science-industry-business collective in order to get a full comprehensive picture of the content, context, process & outcome simultaneously (Okumus, 2003). In conservation, more research must be conducted to assess and measure the impacts of introduction and translocation on the individual wellbeing of sentient animals already present in the target area with consideration for the generalist-specialist spectrum (Chapman, 2012).

ANNEX 1: Overview of interviews

Respondent	Job/field of expertise	Mode of interview	Place and date	Length of the audio
Helen Kopnina	Sustainability, environmental education, ecojustice & conservation	Face to face	Amsterdam, 12/06/2019	1h22
Oostvaarderplassen informant	Ranger	Face to face	Oostvaardersplassen, 7/06/2019	00h52
Saskia Arndt	Animal behavior and welfare	Face to face	Utrecht, 19/06/2019	1h03
Martin Drenthen	Professor in environmental philosophy	Face to face	Nijmegen, 20/06/2019	00h55
Quintijn Hoogenboom	Member of De Fauna Bescherming	Email		
Rewilding Europe insider		Skype	10/10/2019	00h20
Sue Donaldson	Philosophy and animal rights theory	Email		
D. H.	Eastern Rhodopes Administrative coordinator Rewilding officer and veterinary	Skype		1h36
Steve Carver	ICUN Rewilding Task Force, Director of the Wildland Research Institute (WRI)	Skype	24/10/2019 and 25/10/2019	1h28
Oscar Horta	Moral philosophy, animal ethics	Skype	13/12/2019	1h13
Tom Stout	Equine contraception and reproduction	Face to face	Utrecht, 20/12/2019	1h24
Henk Siepel	Animal Ecology	Face to face	Nijmegen 15/01/2020 and 22/01/2020	1h42
Patrice Longour	Manager and veterinary at Monts d'Azur	Phone call		1h23
Mikal Folkertsma	Assistant herd manager	Email	February 2020	

ANNEX 2: Coding scheme

Theme 1: Background of interviewee

Theme 2: Rewilding

2.1 Rewilding vision and philosophy

2.2 Economic impacts and interests

2.2 Practices i.e. management

2.3 Decision-making

Theme 3: Welfare biology

3.1 Vision and indicators of animal welfare

3.2 Veterinary care

Theme 4: Conservation and views

4.1 Perceptions of nature and conservation motives

4.2 Animal rights

Most grounded codes in *Management* (excluding document analysis): HANDS-ON (24), HANDS-OFF (24), SUCCESS (20), EMBEDDED IN SOCIETY (11) WITH LOCAL PEOPLE (23), MONITORING (11), SUCCESS (16), GOAL (9), CONTROL (9), TRAJECTORIES (7) ALTERNATIVE(S) (5) and OUTCOMES (5)

sub-category	codes
*Food	AGRICULTURE, ANIMAL HUSBANDRY, MEAT SELLING, MEAT EATING, CONSUMPTION, FISHING, HUNTING, FOOD PRODUCTION, RESOURCES
*Energy	ELECTRICITY, RESOURCES
*Raw materials	TIMBER, LOGGING, MINING, WATER, RESOURCES, MEDICINAL PLANTS, RESOURCES
*Human life	MINORITIES, PRIVILEGE, JOB OPPORTUNITIES, HUMAN RIGHTS (ABUSE), ECOLOGICAL COLONIZATION, DISPLACEMENT
Ecocide	OVEREXPLOITATION, ROADKILL, HUMAN: NEEDS & WANTS, NATURE DESTRUCTION, ENCROACHMENT ON WILDERNESS, HUMAN FOOTPRINT, HUMAN: NEGATIVE INFLUENCE
Economy/Finance	PROFITABLE, BUSINESSPEOPLE, ECONOMY, FUNDING, CAPITALISM, CAPITALIZATION, REVENUE, MONEY, PROFITABLE, WORTHWHILE, COMPANIES, LOBBY
Values	ANTHROPOCENTRISM: H, HUMAN: NEEDS & WANTS, VALUE: SELFISH, PROMETHEAN, RECREATION, HUMAN: ENJOYMENT

Table 4: classification of the codes in the Atlas.ti Capitalocene group.
*The words with an * are part of the 4 Cheaps.*

ANNEX 3: Systematic data overview

Questions / Case	Veterinary care		Management			Local support		
	Treatment & drugs	**Interventions**	**Monitoring**	**External audit**	**Decision-making**	**Presence of local support**	**Perception by rewilders**	**Pride**
OVP	None; possible treatment for cattle and horses if simple and easy Research on contraceptive vaccine	Euthanasia Capture for translocation Prophylactic feeding in winter	yes	yes	SBB is under the authority of the province of Flevoland *Natura 2000 legislation*	Discordant: no for farmers and animal welfare groups; yes for local governments who see economic opportunities	"You need people to be proud of the area or you need people to be enthusiastic about nature because otherwise you can't have any funding or... I don't know."	
Monts d'Azur	Complete check-up before arrival Blood samples	Euthanasia, Anesthesia Surgery Capture for translocation Prophylactic feeding in winter Identification and branding for bisons	yes	yes	Patrice and Alena Longour	Strong local support from and collaboration between various parties (villagers, farmers, hunters, national and local authorities)	Seen as important Actors should be brought around the table for discussion and collaboration	n/a
Eastern Rhodopes	Complete check-up before arrival Blood samples, Anti-parasites, Vaccination	Euthanasia Possible intervention on some species Identification	yes	Only for Karakachan horses	Collaboration with Rewilding Europe *Natura 2000 legislation*		Absolutely necessary. The acceptability depends on the support.	Strong

	View of animals/animal rights	Visions of nature				Conservation
Questions Case		Vision of rewilding	Selling rewilding	Anthropocentrism*	HaN scale affiliation	"Why should we preserve nature and species?"
OVP	Negative human footprint should be reduced because plants and animals have a right to be there The most important things are the non-interference with the social group and freedom (free roaming, free partner choice, etc.)	Originally based on Frans Vera's theory: test of his hypothesis. Preserving a specific habitat for the geese	Attracting tourists with recreational activities, selling the experience in wild nature	High/medium	Partnership Stewardship	Human enjoyment; experience of wild nature Biodiversity is good for resilience, especially with climate change
Monts d'Azur	We do not own wild animals; we must respect their sovereignty Objection against res nullius "We must be in position to allocate the necessary space for wildlife"	Showing people that wilderness is beneficial to them, educational purpose	Educational and awareness objective through ecotourism, selling the experience in wild nature	Medium/low	Stewardship Partnership Participant	We are dependent on nature, we must respect it Inherent value
Eastern Rhodopes	Respect of the autonomy and agency of animals Rejection of speciesism Guardianship "you take responsibility for the life and for the soul of the animal"	"restoration of the wild nature of Europe as it was before" Preserving rare species and protecting nature	Catering to different segments: Recreational activities, ecotourism for tourists and urban people; economic opportunities and ecosystem services for local rural people	Medium/low	Stewardship Partnership Participant	We must preserve nature because nature is our home

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* found magnitudes of the code ANTHROPOCENTRISM in interviews

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