THE ZOOLOGICAL PARK AS TWO-PIECE INSTITUTION: NATURE CONSERVATIONIST AND ENTREPRENEUR

A discourse analysis of the transitions of nature commodification and nature conservation practices of Dutch zoological parks

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For quality of life

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Follow, follow the sun
And which way the wind blows
When this day is done
Breathe, breathe in the air
Set your intentions
Dream with care
Tomorrow's a new day for everyone
A brand new moon and brand new sun
[Xavier Rudd – Follow the Sun]

Abstract

At a time where biodiversity loss is increasingly prioritised on political agendas globally, zoological parks (zoos in short) are presenting themselves as a modern Arc of Noah for endangered animal species, contributing to nature conservation at both an ex-situ and in-situ level. For zoos to fulfil their role as conservationist, they depend on their visitors to provide the vital financial resources. Zoos can be considered practitioners of nature commodification as they define a certain monetary value to the animals in their collection, which leads to a certain entrance fee that zoos charge their visitors. Yet, zoos do not operate in isolation, but in wider governance regimes that involve a multitude of actors, institutions, and knowledges. Considering such regimes is essential for understanding how zoos present themselves, and how zoos are perceived in society, which can be done by studying discourse. This thesis follows a Foucauldian approach by arguing that discourses are social constructions that depend on power/knowledge relations. These are not fixed in time and space, but in this case depend on the specific socio-economic and historical contexts in which zoos act. Because discourses are so distinct, this thesis focuses specifically on Dutch zoos. The aim of this thesis then is to increase understanding of the contemporary contributions of Dutch zoos to nature conservation, and their future potential for nature conservation, while taking into account their commercial objectives and strategies. Based on this context, this thesis answers the following main research question: In what ways have hegemonic discourses of Dutch zoos shifted historically in terms of nature commodification and nature conservation, and how can this shift be explained in the context of power/knowledge in the external governance practices of Dutch zoos?

The method of discourse analysis is used first to study the historical background of zoos, based on a literature analysis. This section has found that Dutch zoos have made a historical shift from being a private institution for the most affluent individuals to a public institution that must meet the expectations of their visitors, who are zoos' main source of income. Second, storyline analysis is used to study the contemporary meanings assigned to Dutch zoos, focusing particularly on practices of nature conservation and nature commodification. This section has found that Dutch zoos profile themselves as a multi-purpose institution with roles that include entertainment, education, scientific research, conservation, and green space. Related to conservation, zoos justify their entertainment role, and thus their practices of commodification, with their financial contributions to in-situ nature conservation. However, anti-zoo actors argue that these roles are rarely fulfilled, as they are only a cover-up for zoos' profit motive. They argue that keeping and breeding animals in captivity is a violation of their welfare and their intrinsic value. Overall, the interviewed actors have a strong focus on knowledge production and sharing to present objective facts that verify their idea of the truth to society. In turn, power dynamics define the types of knowledge that are being produced and shared with zoo visitors, and societal and political actors more generally. These findings lead to the conclusion that zoos justify their practices of commodification through several different roles. Because the most powerful actors can re-establish their version of the truth by producing and spreading knowledge that supports their claims, zoos' justifications are supported by the contemporary power/knowledge dynamics in zoos' external governance regimes. Yet, the anti-zoo discourse might become hegemonic, if and when sufficient knowledge disputes the non-commercial aims of zoos, demonstrates the harmful effect of captivity on animal welfare and evades refutation of that knowledge by the pro-zoo discourse. One interesting opportunity for further research then is to help clarify to what extent zoos' educational role actually contributes to visitors' intentions for sustainable behaviour.

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List of abbreviations

CSR	Corporate social responsibility
EAZA	European Association of Zoos and Aquaria
IUCN	International Union for Conservation of Nature and Natural Resources
NDV	Nederlandse Dendrologische Vereniging (translation: Dutch dendrological association)
NPM	New Public Management
NVBT	Nederlandse Vereniging van Botanische Tuinen (translation: Dutch association of botanical gardens)
NVD	Nederlandse Vereniging van Dierentuinen (translation: Dutch association of zoos)
RZSA	Royal Zoological Society of Antwerp

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1. Introduction

1.1. Research topic

Since the nineteenth century, zoological parks ('zoos' in short) mainly served as living museums to entertain its visitors (Maynard, 2018). Over the last couple of decades, however, many have shifted their focus - to a bigger or lesser extent - to roles such as nature conservation and public education (Catibog-Sinha, 2008; Kolbert, 2013; Maynard, 2018). To illustrate, ever since Martha, the last Passenger Pigeon, died at Cincinnati Zoo in 1914, the need for captive breeding programmes by zoos has become increasingly recognised (Kolbert, 2013). Conway (2003, p.11) even argues that *"other zoo priorities [than conservation] must be secondary."* Yet, the rapidly increasing, human-driven biodiversity loss, combined with the high financial costs of conservation projects, make it difficult for zoos to keep up with their conservation and education programs (Conway, 2003; Kolbert, 2013). Furthermore, zoos need to at least partially focus their collection on charismatic animal species such as lions, which paying visitors prefer to see, even though animals such as many amphibians could be considered more pressing subjects for conservation (Kolbert, 2013). The choices that zoos make regarding their collection thus influence the future of the species they keep, and indirectly the future of the species that are left out (Conway, 2003). This brings us to the concise conclusion that zoos must find a way to combine several different interests: *"The single most important challenge of modern zoos is to balance conservation goals with economic imperatives,"* (Catibog-Sinha, 2008, p.166). The question then is whether economics and conservation can work in synergy, so that zoos can be a significant actor in the sector of nature conservation despite their commercial motives, or whether they are inevitably conflictual so that sacrifices on both ends are required.

The involvement of global capitalist economics in nature conservation is often legitimised by the argument that nature can be protected through market workings by means of financial valuation (Evans, 2012). This thesis will specifically focus on one method thereof, namely nature commodification: the process of fitting natural resources into the 'supply and demand' scheme of market workings (Daily and Ellison, 2012). Market workings in conservation can be illustrated again by Martha's case, as more unique and threatened species are valued higher in monetary terms than more common species (Herman, 1948). Another example is the ecosystem services approach, which was designed to monetarily value the products and services provided by ecosystems that are considered vital to human survival, such as fish, timber and the purification of water and air (Daily, 2003; Evans, 2012). The goal was to establish a long-term vision on the costs of damaging ecosystems, instead of the often-preferred short-term economic gain (Daily, 2003). Commodification is thus founded on major capitalist elements, including self-regulating markets, privatisation of public goods and services, and monetary valuation of resources (Heynen and Robbins, 2005; McCarthy and Prudham, 2004). However, there is also a widespread critique on the commodification of nature and its resources. Heynen and Robbins (2005, p.6) formulate the argument behind this critique as follows: *"Revolutions in law, policy, and markets are accelerating the ongoing commodification of natural things, laying bare the structurally driven and environmentally destructive tendencies of capitalism."* Consequentially, a plethora of social movements is resisting such capitalist practices (McCarthy and Prudham, 2004), including zoos. One example is the 'Blackfish effect' – the major, negative impact that the documentary *Blackfish* has had on public perception on keeping orcas and other marine mammals in captivity (Burford and Schutten, 2017).

These conflicting views on nature commodification suggest that also different viewpoints on zoos exist. Such viewpoints are conceptualised here as discourse: *"An ensemble of ideas, concepts and categories through which meaning is given to social and physical phenomena, and which is produced and reproduced through an identifiable set of practices,"* (Hajer and Versteeg, 2005, p.175). As zoos'

discourses have changed in different ways over time, so have their roles as entrepreneurs and nature conservationists (Scollen and Mason, 2020). These discourses exist in the larger context of national and international trends in economy, conservation, and socio-cultural dynamics, and the relations between these trends. Hence, to study the practices in which discourses of commodification and conservation by zoos are (re)produced and changed, this thesis considers zoos in relation to governance. Governance denotes who is involved, what actions they can and cannot take, and what resources are demanded (Heynen and Robbins, 2005). More specifically, external governance entails the discussions and negotiations between zoos and stakeholders such as civil society, other zoos, (non-)governmental organisations, and the private sector (Catibog-Sinha, 2008; Scollen and Mason, 2020). This approach considers the different actors involved in enabling or prohibiting zoos from performing certain actions, rather than the internal decision-making process of a zoo.

The concept of power then defines which discourse is taken on as the truth in a governance regime, referred to here as the hegemonic discourse, and which discourses are rejected (Bevir, 1999). In turn, knowledge shapes the 'realities' in which we live as human beings, laying the foundation for action and intervention as tools of power (Foucault, 1980). This intertwined relation of power/knowledge forms an important basis for understanding how discourses are defined as 'true' or 'false' (Bevir, 1999; Foucault, 1980), and thus for studying the *how* and *why* of zoos' changing discourses. Furthermore, consideration of the historical and the socio-political context is crucial for comprehending the course of zoos' changing discourses over time (Scollen and Mason, 2020), as each action of commodification has its own strategies, practices and outcomes (Bakker, 2010).

1.2. Research focus

This thesis specifically focuses on Dutch zoos to study how zoos participate in nature commodification and nature conservation from a national point of view. However, recognizing that this sampling group is most likely not a hundred percent homogeneous, but that differences between Dutch zoos' external governance practices may very well exist, one specific institution is chosen as an exemplary case. The use of this case is to compare it to other Dutch zoos, aiming to identify differences and similarities within the sampling group. The zoo serving as an exemplary case in this thesis is ARTIS, a zoological park established in 1838 in the city and municipality of Amsterdam. There are several reasons for this choice. First of all, as ARTIS is the oldest zoo in the Netherlands (ARTIS, 2020), it is considered an interesting case for studying the historical transitions in zoos' discourse. As a green area in the city, ARTIS fulfils an ecological and recreational role (Musterd and Salet, 2003), indicating a role in urban nature and conservation thereof. Furthermore, ARTIS is a member of multiple (inter)national associations for nature conservation, and receives financial resources from the Dutch government, funds, businesses and civilians (ARTIS, 2020), indicating interesting external governance practices.

To perform this study, the method of discourse analysis is applied. A combination of literature analysis and interviews is used to gather textual data, which will be studied in relation to its social and political context, to uncover which meanings have been assigned to zoos from a historical point of view, and what meanings are assigned to zoos presently. For a more thorough analysis of zoos' contemporary discourses and their use in everyday practice, this thesis applies storyline analysis, which can be explained as the simplified narratives on specific issues or events within a discourse. The goal thereof is to reveal how zoos present themselves, focusing especially on the positions of nature conservationist, commercial organisation, or both. Additionally, the goal is to reveal what other actors in their external governance regimes consider them to be. This information is used for understanding the contributions that zoos make to nature conservation now, and what potential they have for conservation in the future.

1.3. Research questions

By analysing the different discourses on Dutch zoos, using ARTIS as an exemplary case, this thesis aims to help fill the knowledge gap of how and why discourses of Dutch zoos have transitioned over time, including the roles of commodification and conservation, and how these two roles are part of the current hegemonic discourse. This leads to the following main research question**:**

- In what ways have hegemonic discourses of Dutch zoos shifted historically in terms of nature commodification and nature conservation, and how can this shift be explained in the context of power/knowledge in the external governance practices of Dutch zoos?

This key question is divided into four different sub-questions:

- How have discourses of Dutch zoos transformed throughout history, considering the concepts of nature commodification and nature conservation?
- To what extent do power/knowledge dynamics in the external governance of Dutch zoos contribute to shifting discourses?
- To what extent are Dutch zoos representative of different commodification practices applied by other zoos around the globe?
- How will the current hegemonic discourse on Dutch zoos likely develop in the future?

First, the following chapter will provide a more in-depth explanation of the main concepts in these questions, as well as the connections between these concepts. Chapter 3 then elaborates on the methodology of this thesis. Next, chapter 4 provides the results of a literature analysis on the historical transitions in zoos' discourses to dive into the first sub-question. Chapter 5 focuses on the last three sub-questions by presenting the results of the qualitative data gathered in this thesis. After that, chapter 6 discusses these results to provide an answer to the research questions presented above. This chapter also elaborates on the limitations of this thesis and makes three suggestions for further research. Finally, chapter 7 concludes this thesis.

2. Theoretical framework

2.1. The impact of power/knowledge on governance

2.1.1. Power/knowledge

Power is a central concept in studying the perceptions of zoos' changing roles and discourses in external governance. As described in the introduction, power shapes the concepts 'true' and 'false' in society. In fact, *"To study politics becomes to trace the operation of power as it creates subjects, discourses, and institutions through time,"* (Bevir, 1999, p.353). This quote holds on to the traditional definition of power being objective, however. Instead, this thesis will follow through on the arguments made by the influential French philosopher Michel Foucault, who has contributed extensively to the theory of discourse analysis, truth, power, and knowledge. This chapter will therefore explain the power/knowledge concept, link this concept to governance, and elaborate on the working of discourses in the context of power/knowledge and governance.

According to the Foucauldian approach, power shapes our view of the world, our beliefs and our behaviours (Foucault, 1980). Power is thus not portraited negatively by just placing constraints, but rather as a creative force that produces and defines (Foucault, 1989). An important notion is that power is not something objective that is held, lost or shared by a person or an organisation (Foucault, 1984). Rather, it is a relational, complex situation that becomes exercised through different practices, techniques and procedures (Foucault, 1984). One such practice is knowledge production. Foucault (1980) thought of knowledge as a circumstantial situation, and construction of truth as dependent on power. In turn, power depends on the production and legitimisation of knowledge to found action and intervention as tools of power (Foucault, 1980). Foucault defined this intertwined relation as the concept of power/knowledge.

Foucault opposed the objectivist epistemology of value-free knowledge, and argued instead that knowledge is always affected by societal inputs and regulations, as well as power (Foucault, 2005). More explicitly, knowledge is affected by the underlying ontologies, epistemologies, and methodologies of its producers (Aurenhammer, 2016). Still, nowadays objective knowledge is most often the aim to ensure transparent, valid, democratic and effective governance, as claims can be epistemically tested against a 'truth' by society (Turnhout, Neves, and De Lijster, 2014). In fact, knowledge is the basis for doctors, economists, and many other societal actors to work with, creating the conditions for what is expected in society (Foucault, 1980). Such objective, scientific knowledge steers political agendas and actions through the epistemic authority that scientists hold. In turn, its topics and aims are highly influenced by political actors' needs, problems and interests (Turnhout et al., 2014). This mutually influential process is here defined as the science-policy relation.

One example hereof is the European Commission, who formulated the objective to make their policy-making more knowledge-based (Meuleman and Niestroy, 2003). Related to commodification, especially *scientific* knowledge can identify its related issues and opportunities (Turnhout et al., 2014). Furthermore, there seems to be *"a pressing need for zoos to excel in science and research,"* (Catibog-Sinha, 2008, p.165). All these cases demonstrate the relevance of the science-policy relation to this thesis. A major issue of this science-policy relation that then needs consideration is that of knowledge often being produced to strengthen the contemporary hegemony: the whole of dominant ideas that creates the world (Hajer and Versteeg, 2005). This limits the possibilities for researchers to discover new issues or information on different topics, and instead fosters the extension of knowledge on certain identified (political) problems (Turnhout et al., 2014). Science is highly steered into certain directions, rather than being free to explore new ones. When knowledge becomes a form of control, rather than a tool, it becomes a goal on its own (Turnhout et al., 2014).

2.1.2. Power plays in governance

The concept of power/knowledge thus has a major impact on governance through the science-policy relation, with knowledge production being a goal in itself. 'Governance' here is used as an umbrella-term for new forms of government (Kooiman, 1999), with central elements such as the changing role of the national government (or 'state') through decentralisation, increased steering using information, and increased participation of societal and corporate actors (Evans, 2012). As all these aspects can differ with each practice of governance (Evans, 2012), this thesis refers to different types and their different principles, norms, rules and procedures as governance regimes (Meuleman and Niestroy, 2003). Governance regimes tell us something about the location of power (Meuleman and Niestroy, 2003), as power can either stimulate and create, or reject and oppress governance actions (Evans, 2012). Yet, power is not (always) an 'all-or-nothing' type of concept: most often power is distributed and shared amongst different actors in governance (Arts and Van Tatenhove, 2004).

Governance actors generally range from governmental to non-governmental (Arnouts, van der Zouwen, and Arts, 2012), forming autonomous, self-organising networks (Colebatch, 2009). Actors in a network can have different interests, motivations, goals, and amounts and types of resources. Resources can involve for example financial means, knowledge, social status, and legal rights. The extent to which an actor is able to utilise these resources is defined as resource potential, which is partially dependent on the power an actor has within the network (Arnouts et al., 2012). Such self-organising networks then create an inevitable power dependence, as different types of required resources can be provided by different actors. *"The capacity 'to argue, to name and to frame' on the basis of which outcomes in deliberations can be achieved,"* can thus vary enormously between different contexts and actors (Arts and Van Tatenhove, 2004, p.340). The decision on which actors are involved in a governance regime, and which are excluded, depends on its access rules (Arnouts et al., 2012). Interaction rules then determine the correct and incorrect manners of behaviour towards other actors, and responsibility rules state which actors are responsible for which aspects of the governance regime (Arnouts et al., 2012). A network of actors can thus be weaker or stronger, and more or less binding, depending on the rules (Arnouts et al., 2012).

Recognition of rules is crucial for functional governance (Evans, 2012). Here, the set of established rules and practices that enable or constrain certain behaviours and actions for specific actors in specific situations is defined as 'institutions' (Helmke and Levitsky, 2004; March and Olsen, 2006). These 'rules of the game' create patterns in political processes through order and predictability, and reflect its history and future visions (March and Olsen, 2006). Yet, institutions are dynamic and can change in different, sometimes unpredictable directions over time, dependent on contexts such as the contemporary definitions of 'truth' or 'legitimacy' (Helmke and Levitsky, 2004; March and Olsen, 2006). Foucault emphasised that for institutions to continue existing, they need to be constantly recreated (Bevir, 1999). Following such reasoning, Evans (2012) explains that institutions are a social construction, defined by individuals and defining of individuals. From a Foucauldian perspective, it is the way in which institutions are created, sustained, and changed, through attributed meanings and ideas in practice, that is of interest then. Examining how commodification is exercised in Dutch zoos' external governance, such as what meanings are excluded and included in the hegemonic discourse that lay the foundations for its practices, may then contribute to our understanding of that discourse.

2.1.3. Significant actors in governance

The state is a prominent actor in most governance regimes. It often acts as a mediator and collaborator along with one or several other actors (Evans, 2012). State power has been elaborated by Foucault, in his concept of governmentality, arguing that power is exercised not merely through the state and its regulations, but more so through the people and institutions that take on these

power roles in their behaviour (Evans, 2012; Foucault, 1980). In other words, people exercise state power through themselves. The state is then defined as a polymorphic entity working through bottom-up techniques of government throughout the nation, rather than as a centralised power (Foucault, 1977). State power consists of four crucial elements, namely: *"Ways of seeing and perceiving, […] production of regimes of truth which frame how the world is understood, […] technologies and experts, […and] the formation of bodies and subjects,"* (Evans, 2012, p.24). Foucault argued that the state has remained the primary focus of power structures in political and social analysis (Foucault, 1986), impacted by the different discourses, practices and symbols that are involved in the governing process (Colebatch, 2009). Yet, *"Individuals are vehicles of power, not its point of application,"* (Foucault, 1980, p.98). Freedoms and autonomies are then illusory: people are limited to create themselves only within the self-sanctioning boundaries set by the societal structures at a certain point in time, exercising the 'power of normalisation' (Foucault, 1989). In conclusion, state power is not a top-down force working upon all, but a complex interpretation of the topics, expertise, values and power involved in governmentality by its actors (Colebatch, 2009).

Related to the state power to produce regimes of truth, and to the science-policy relation, producers of knowledge are also powerful actors in governance. One specific type of actor, namely scientists, is proposed to be capable of producing objective, scientific knowledge with use of reliable and standardised methods. This proposition displaces power to distinguish truth from falsehood (Turnhout et al., 2014). As knowledge is a crucial part of the practices of commodification (Evans, 2012) and of zoos (Catibog-Sinha, 2008), related governance regimes most likely involve scientists. Non-scientists and non-scientific knowledge are not necessarily excluded, but capacity building is implemented to ensure these will fit the standardised scheme that is based on the scientific knowledge and policy actions that are relevant in the first place (Atkinson and Klausen, 2011; Turnhout et al., 2014). Knowledge is used to frame one truth, and power ensures production of knowledge that confirms this truth, demonstrating the power/knowledge relation here.

2.1.4. New Public Management

Governance is crucial for successful commodification to negotiate and create the opportunities and conditions in political arenas (Heynen and Robbins, 2005). One highly influential, much-researched governance regime under capitalism is New Public Management (NPM) (Evans, 2012). The theory on NPM is used in this thesis to give an impression of the types of governance characteristics that could indicate commodification in the external governance of Dutch zoos and its discourses. In line with Foucault, NPM is not defined by a retreat of the government, but by increased involvement of economic factors in the process of governing, striving for effectiveness and efficiency (Turnhout et al., 2014). Markets then act within boundaries established by the state: its legal instruments have shown to be crucial to the stability of market workings in many cases, mostly through the implementations of formal institutions (Evans, 2012). NPM applies institutions to create markets, enclosure and/or privatise common resources, create fungible units for trade, and establish sovereignty (Evans, 2012). This market-oriented focus has also impacted nature conservation efforts. Yet, important to recognise in terms of biodiversity governance is the wide range of scales involved, such as temporal, spatial and jurisdictional scales, creating a high institutional diversity and calling for multi-level governance (Paavola, Gouldson, and Kluvánková-Oravská, 2009). This points towards complex governance regimes of commodification of the environment in biodiversity, which has seriously increased over the past decades (Turnhout et al., 2014) and therefore towards the potentially complex external governance regimes of Dutch zoos. Simultaneously, politics have steered knowledge production towards identifying issues and opportunities for commodification to 'improve' and grow, which illustrates a strong science-policy relation here (Turnhout et al., 2014).

2.2. Discourse as a mirror of power/knowledge in governance

2.2.1. Power/knowledge as mobiliser of discourse

To explain how the mechanisms described above can be exercised, observed, and measured in practice, the concept of discourse can be applied. Discourse separates 'truth' from 'falsehood' (Bevir, 1999), functioning as a mirror of the power/knowledge dynamics of interest here. This subchapter will elaborate on how this mirror works, and how the concept can contribute to this thesis. Most fundamentally, in opposition to objectivism, Foucault argued that everything is affected by how people interact and engage with the world (Foucault, 1980). People's truths are shaped by their everchanging meanings, experiences and reason, which depend on the same social structures and discourses that create identity (Bevir, 1999). The meanings of a discourse are thus constantly changing, attributed to practices in the world and exercised through new experiences that are added to a discourse over time (Bevir, 1999). As explained in the introduction, zoos' discourses have transformed in many different directions throughout history (Scollen and Mason, 2020). Studying these transformations of discourse can contribute to understanding the underlying factors and motivations for the changing roles of zoos, such as shifting power dynamics or governance regimes.

Discourse has a reproductive power: it includes all that society displays, created through the construction of meaning, yet it is also the medium through which meaning is constructed (Foucault, 2005). Exactly because no meaning or identity is fixed in time, but constantly needs to be re-established, there is space for continuous hegemonic struggles to define society and identity, in which powerful actors try to smother and overrule the new, upcoming discourse (Hajer and Versteeg, 2005; Jørgensen and Phillips, 2002). Discourse is thus a constant contestation to keep certain meanings in, and other meanings out (Jørgensen and Phillips, 2002). In this continual process, power constitutes the means by which actors mobilise and use their ideas through discourse (Hajer and Versteeg, 2005). Bevir (1999) argues that power mobilises discourse through external and internal controls. External controls are what excludes certain thoughts or practices from a discourse, identifying them as false or abnormal (Bevir, 1999). Internal controls, on the other hand, define the conditions for the construction of truth (Bevir, 1999). For example, traditional ecological knowledge is often seen as less truthful than scientific knowledge (Turnhout et al., 2014), defining 'objectivity' and 'transparency' of science as internal controls, and 'biased' knowledge as an external control. Regimes of power are then constructed through the many different practices that perform external and/or internal controls combined (Bevir, 1999). Through these controls, power excludes certain identities and capacitates others, conform the dominant power regimes at that time (Bevir, 1999).

2.2.2. Discourses in governance

Mutual exclusion of different identities, by different identities, is here defined as social antagonism (Jørgensen and Phillips, 2002). This concept is important here as zoos seem to be confronted with fundamentally different beliefs of 'right' and 'wrong' held by different actors, potentially impacting its external governance practices and the discourses involved. One example is the execution of a young giraffe named Marius, who was then fed to the lions by Copenhagen Zoo in Denmark, which has caused a public outcry for a debate on animal welfare (Gingrich-Philbrook, 2016). 'Othering' is one form of such social antagonism: the discursive process in which powerful actors assign certain negative characteristics to less powerful actors, in this way assigning themselves a certain identity and affirming their own superior position (Jensen, 2011). Actors can thus create stories about 'the other' and frame them as a (common) enemy to strengthen their own identity and discourse. The tensions of different actors' oppositional interests, values and beliefs often lead to such a conflict. When discourses clash in practice, the border between included and excluded meanings and identities becomes ambiguous, threatening the existence of the discourse (Jørgensen and Phillips,

2002). Hegemonic intervention can then be useful for resolving such conflicts of ambiguity, after which one discourse becomes dominant again and automatically excludes other discourses and identities (Jørgensen and Phillips, 2002). Such intervention can be exercised through governance.

Analysis of the involved actor networks and its power dynamics can play an important role in identifying such hegemonies, and alternatives for future realities (Aurenhammer, 2016). Interesting here is the concept of discourse coalitions, which can be explained as *"a group of actors who share a social construct,"* (Hajer et al., 1993, p.45). A discourse coalition involves all the related actors, powers and practices involved in mobilising their discourse (Hajer et al., 1993). One example, given above, is the importance of researchers that mobilise discourses for political actors. Actors with common interests and/or goals could then pool together to jointly mobilise their discourse, all bringing their own resources and strengths to the coalition. Identifying such coalitions is a major first step towards understanding their common grounds and goals, the interests and power/knowledge dynamics they are based on, and thereby to map out the patterns to identify global trends on zoos' changing roles.

The related institutions are then likely to play a part in the definition of the external and internal controls of discourse, as they prescribe appropriate behaviour and actions for the coalition. In times of policy struggles and subsequent change, new hegemonic discourses are embodied in institutions, in which specific choices are made on what to include and what to exclude (Hajer and Versteeg, 2005). In a hegemonic struggle, the conflict is thus just as important as the discourse, as it gives away information on the power/knowledge dynamics of discourse coalitions, institutions, and resources. Studying historical institutional changes may then contribute to our understanding of changing roles and discourses in the hegemonic struggles of relevant governance regimes. In turn, this understanding may help predict and steer future developments in discourses. For example, the Blackfish effect is argued to be the motivation for hegemonic struggles of zoos and aquaria globally, leading to changes in discourses and practices alike (Burford and Schutten, 2017).

2.2.3. Storyline analysis

To perform a critical analysis of textual data and its social context, like the hegemonic struggles due to social resistance described above, discourse analysis can be a useful method using the concepts of language and power (Jørgensen and Phillips, 2002). More specifically, discourse analysis can be defined as the study of language in practice (Hajer and Versteeg, 2005). However, discourse analysis is more than simply a method: *"In discourse analysis, theory and method are intertwined and researchers must accept the basic philosophical premises in order to use discourse analysis as their method of empirical study,"* (Jørgensen and Phillips, 2002, p.4). The reflection on theory is thus crucial for drawing useful conclusions from the data gathered in discourse analysis. Especially the Foucauldian approach of this thesis recognises that power/knowledge dynamics are majorly shaped by discourse and vice versa (Hajer and Versteeg, 2005; Sharp and Richardson, 2001). In fact, following Foucault, a focus on linguistics contributes to studying the meanings and identities that shape the physical world (Foucault, 2005). As this thesis studies the political and social debates on nature commodification, discourse analysis is a useful method for understanding how different values, beliefs, and meanings are communicated in such debates.

One often occurring application of linguistics in a discourse is that of storylines. A storyline can be defined as a statement in the form of a narrative, describing a sequence of events with a start, middle and end (Hajer, 2006). They are at the centre of discourse, connecting the different parts. Issues and conflicts are often simplified and made part of a storyline (Hajer, 2006), for example in the aforementioned practices of social antagonism. Storylines thereby reduce discursive complexity, allowing actors to take on a discourse that expands beyond their own expertise, and create a sense

of common understanding, under which discourse coalitions can form (Hajer, 1995; Hajer et al., 1993). For example, a broad definition of biodiversity can allow the concept to be interpreted differently by different actors, in accordance to their own perspectives and environmental values, so that the interpretation of biodiversity is dependent on the context; on the discourse in which it is used (Gustafsson, 2013). The same is true for concepts such as conservation and commodification. Especially important for the reconstruction of storylines are credibility, acceptability and trust (Hajer, 1995), making a storyline accessible to a wide range of actors who can form a coalition.

Because storylines are documented through language, they are relatively easy to observe, and give away information on underlying processes such as power/knowledge dynamics. Analysis of these storylines is thus useful for identifying different ideas and narratives within a discourse. For this thesis, storyline analysis is applied to get a grasp of how hegemonic discourses have struggled and changed over time, and how they may change in the future. Important then is the consideration of the social-historical context and political context (Scollen and Mason, 2020), because as mentioned above, truths are context-dependent. However, even though storylines are based on assumptions and meanings that people understand as universal, analysis of storylines often shows that this idea of mutual understanding is false and very different perceptions of the same storyline can exist (Hajer, 2006). Hence, as conflicting beliefs and perceptions on Dutch zoos may exist, different angles on the same discourses must thus be considered and studied. In fact, a storyline can consist of different discourses, including their complementary parts and cancelling out competing parts (Gustafsson, 2013). Thorough questioning of actors on the meaning of the storylines they claim to be true or false is then crucial. The following chapter will elaborate on why and how exactly this storyline analysis on Dutch zoos will be conducted.

In sum, the Foucauldian approach of this thesis combines the concepts of discourse, truth, power, and knowledge, all defined as being social constructs, to study the meanings and practices of Dutch zoos. As discourses are both a medium for constructing meaning, and a result of the construction of meaning (Foucault, 2005), they depend on the power plays between the actors that try to establish their discourse as being hegemonic. Zoos' governance regimes, including discourse coalitions and institutions, provide insight in power dependencies between different actors. For instance, the science-policy relation in a certain governance regime indicates which truth is being established as hegemonic, and which actors are involved in this relation. Discourse analysis, and storyline analysis more specifically, are useful methods for studying how the physical world is shaped by underlying ideas and meanings of right, wrong, true, and false, here in the case of Dutch zoos' practices of nature commodification and nature conservation.

3. Methodology

3.1. Motivating the case of ARTIS

As mentioned in the introduction of this thesis, ARTIS is selected as a specific case to serve as an exemplary case in the study of the dynamics of power/knowledge and commodification in the external governance practices of Dutch zoos. The purpose of selecting one case in the larger context of Dutch zoos is done to establish a central thread throughout this thesis. In other words, ARTIS occasionally serve as an example to provide a more in-depth explanation of certain statements made on Dutch zoos in general. This allows for a richer description of the topics described in this thesis, and for making comparisons between different Dutch zoos.

First of all, this thesis focuses on Dutch zoos, as the travel restrictions due to COVID-19 made field work abroad impossible and finding respondents in a country where I have no acquaintances or colleagues would be a very difficult task without being able to visit the zoos, as I was tied to an online set-up for data collection. This ruled out several interesting cases, such as that of Schönbrunn Zoo in Vienna, Austria, which is the world's oldest zoo as it was established in 1752 (Schönbrunn, 2020). It also ruled out the case of SeaWorld, which is a big institution that has encountered some serious societal resistance with potentially large consequences for visitor revenues, such as the Blackfish effect discussed in the previous chapter.

When considering only Dutch zoos, the choice for ARTIS as an exemplary case can be motivated in several different ways. It was mentioned already in the introduction that ARTIS is the oldest zoo in the Netherlands, being established in 1838 (ARTIS, 2020). Therefore, ARTIS has experienced a relatively large period of shifting societal and political discourses in relation to commodification and conservation throughout history. Being able to study these transitions provides the opportunity to learn from past trends and to reflect such trends on the future. In addition, ARTIS proclaims to be working on a transition from zoo to educational institution since 2008 (ARTIS, 2020). One of its aims is to bring its visitors a sense of 'love and care for nature' (ARTIS, 2020). In fact, ARTIS is aspiring to be the frontrunner of educational value in zoos and distances itself from the historical focus on entertainment (ARTIS, 2020). These statements point into the direction of shifting discourses and roles of the zoo. The aim of being a frontrunner then provides an interesting angle for making comparisons to other Dutch zoos.

Another reason is ARTIS's seemingly interesting external governance connections. ARTIS is a member of multiple (inter)national associations for zoos and nature conservation (ARTIS, 2020), pointing towards interesting network dynamics between these actors. Also, the zoo receives financial resources from different funds, businesses, civilians, and the municipality of Amsterdam (ARTIS, 2020). The funding of these actors is linked to the zoo's performances as well. For example, the municipality's political agenda on animals in the city (*Agenda Dieren*) has recorded the conditions for ARTIS to receive municipal subsidies, namely: improvement of animal welfare, sustainability and green areas, monumental heritage, and development of educational value (Amsterdam, 2016). The zoo also generates revenue of its own through its visitors, as explained in the introduction. Researching the extent to which revenues are purposed for nature conservation, and in turn how this role can create revenue for the zoo, helps to understand how commodification is linked to nature conservation in history, present and future times. All in all, potentially complex dynamics of actors, power, knowledge, financial resources, and interests seem to be involved in the external governance of ARTIS. The question then is how such dynamics are formulated in storylines through narratives, and to what extent they are shared by other Dutch zoos.

3.2. Data collection

Two different types of data collection are used in this thesis: a literature study and semi-structured interviews. First, a literature study was conducted, which serves as a baseline for understanding how Dutch zoos' discourses have changed from a historical perspective. This study was done by manually analysing previously conducted scientific research on discourses of zoos. Two books on this topic have been used to set up the central framework of the analysis, and a set of supplementary scientific articles have been used to provide more in-depth information on certain parts and topics. The latter have been accessed by using the search engine Google Scholar. Search queries included key words such as 'zoo', 'discourse', 'history, 'nature', 'conservation', 'education', 'corporation', and 'commodification'. The analysis has been conducted with two focal points in mind: covering different time periods and covering all spatial areas that influence Dutch zoos' practices. In addition to this general description on Dutch zoos, one section focuses specifically on the historical transitions made by ARTIS to provide a more detailed understanding of certain shifts, for which the use of a specific case proves very helpful. The goal was not to statistically prove or dismiss expectations of such historical transitions in discourse, but rather to create a broad understanding of Dutch zoos' transitions in discourse from a historical perspective, which helps explain contemporary discourses.

Second, thirteen key actors of Dutch zoos' external governance networks have been interviewed, following a semi-structured script, to accumulate more in-depth information on their understanding of the different storylines that exist around Dutch zoos. The interviews have been done in Dutch. The inductive approach of this thesis allowed a broader, more in-depth understanding of the complex phenomenon that is being researched, requiring data collection on a wide variety of factors instead of formulating and examining hypotheses (Newing, 2010). The selection of specific informants, referred to as purposive sampling, helped find the right informants for this critical study (Bernard, 2017). Following ARTIS Zoo's external governance structure, several key actors were selected to start off the interviews with, such as a politician of the municipality of Amsterdam, zoo employees, botanical associations, and a membership organisation of zoos and aquariums. The aim was to include different types of actors, who had a different angle on the function of zoos in Dutch society. After interviewing these initial actors, snowball sampling was performed by asking the first informants to name one or more other relevant actors whom I could potentially interview. The advantage of snowball sampling is that otherwise difficult to contact people become easier to reach (Bernard, 2017). This process was repeated until a saturation point was reached: the number of newly suggested interviewees became very small, and the last interviews added relatively little new information to the data that was already gathered.

In terms of the practice of interviewing, the advantage of semi-structured interviews is that it has much of the freewheeling quality of unstructured interviewing, yet based on the use of an interview guide (Bernard, 2017). This interview guide consisted of two parts: a set of crucial questions that were asked to *all* interviewees, and a set of specific questions for each specific actor. This is because different actors, as explained in the previous chapter, bring different realities, knowledges, powers, interests, resources, etcetera, to the table. Specific questions based on these different characteristics can bring more in-depth information on the interviewee's expertise related to Dutch zoos and their governance regimes. Finally, there was room for spontaneous questions and side-tracks in the interview to allow more in-depth exploration of a topic or the discussion of a whole new topic. The resulting pool of questions was then divided into segments based on the following six topics:

- The role of the actor in Dutch zoos' external governance networks
- Their perception on practices of commodification by Dutch zoos
- Their perception on practices of conservation by Dutch zoos

- Their perception on knowledge/power dynamics in Dutch zoos' external governance networks
- Their view on the prospects of Dutch zoos in the future, in relation to practices of commodification and conservation
- Their view on the prospects of Dutch zoos in the future, in relation to other zoos globally

A more specific interview guide can be found in appendix A. Due to the situation of the COVID-19 virus, all interviews have been conducted via either video call or telephone call. Online interviews have brought challenges such as bad internet connections and a lack of personal contact. Face-to-face meetings with interviewees would likely have given a better impression of the person's body language and facial expressions. However, online interviews were also relatively time-efficient, allowing me to adapt more flexibly to interviewees' agendas. At the start of each interview, the interviewee was asked whether the interview could be recorded for transcription purposes. They were informed that the recording and the transcription would neither be shared with any third parties, nor be used for any other purpose than this thesis. All interviewees agreed to this request.

Data collection has combined aspects of both a thick approach and a thin approach. Thick and thin approaches are essentially two different *"practical ways of knowing the world and of shaping action,"* (Porter, 2012, p. 212). A thick description contains a high level of detail, so that the reader can place themselves at the scene of the interview (Ponterotto, 2006). Its aim then is to unveil the underlying meaning of people's actions and words (Geertz, 1973). A thin approach, on the other hand, provides social sciences a way to research observable, measurable phenomena without interpretation by the scientist and therefore to fulfil the criterium of objectivity (Porter, 2012). Potential underlying motivations and trains of thought are left out (Porter, 2012). A combination of the two has been made because of several different reasons. Thick descriptions require detailed interpretation of non-verbal communication, and long-term interaction with the informants, like with ethnography, to understand people's thoughts and feelings (Porter, 2012). It is beyond the extent of this thesis to provide such a context on the personal motivations behind one's argument by applying thick approach. Besides such practical issues, a thin description is also beneficial to this thesis as it is easier to interpret for readers without substantive prior knowledge on the subject (Porter, 2012). Yet, this thesis does not strictly follow a thin approach either, as the aforementioned use of semi-structured interviews allows for open-ended questions, to which interviewees can formulate their own answers, rather than pick from a number of given answer options (Newing, 2010). Interviewees can explain their answers or be steered by the interviewer to elaborate on certain topics or statements made by the interviewee. This method provides richer data than for instance standardised questionnaires. Consequently, parts of both approaches are applied to data collection in this thesis to limit researcher bias, focusing on verbal communication only, without losing the essential contexts and details given by the interviewees.

3.3. Data analysis

On basis of the recordings of the interviews, the next step was manual transcription of the interviews. Transcription was done non-verbatim, meaning that speech unnecessary to capture the statements made by the interviewee was left out of the transcription, such as stutters or filler speech like 'uh'. This is based on the thin approach described above. Next, the transcriptions were coded. The practice of coding serves the purpose of indexing the gathered data, identifying the framework of key topics and their patterns (Newing, 2010). This is useful for manually deriving narratives from the data and for identifying differences and similarities between the interviews (Chong and Druckman, 2007). The thin description allows for the use of codes, as the amount of specific detail is limited (Newing, 2010). Mainly deductive coding has been applied, which is useful for providing a

guideline when analysing the data (Newing, 2010). This gave a sense of direction during the coding process, which made the process go smoother. Additionally, inductive coding has been used, as this allowed for the creation of new labels of arguments that may not have been included in the deductive coding scheme, and thereby helped maintain objectivity (up to a certain extent) when interpreting the data (Newing, 2010). This was useful for including information from the interviews that was not derived previously from the literature analysis.

In line with Newing (2010), the following steps have then been taken to develop a coding scheme:

1. Prior to data collection, a first, pre-defined set of codes has been formulated based on the theoretical framework of this thesis.
2. The transcriptions have been analysed a first time to adjust and complement the initial set of codes, so that it includes all the arguments made in the interviews.
3. The resulted coding scheme has been structured to follow a hierarchical method: key words were divided into mutually exclusive topics and subtopics. These are specified for zoos' contemporary roles in external governance, to ensure a focus on the research questions.
4. Codes have been formulated for all topics and subtopics to create the final coding scheme.
5. Using the software 'QDA Miner Lite', the interview transcriptions have all been coded.

The final three steps formulated by Newing (2010) did not turn out to be necessary, as the initial coding scheme did not miss out on any (sub)topics in the first round of analysis, so the coding scheme did not have to be corrected for overlapping, ambiguous or unnecessary codes, or for the hierarchical order. This also means that a second analysis of transcriptions to implement the final coding scheme and to check the coding done in step 5 for any errors or missed parts was unnecessary. The final product then looked as follows:

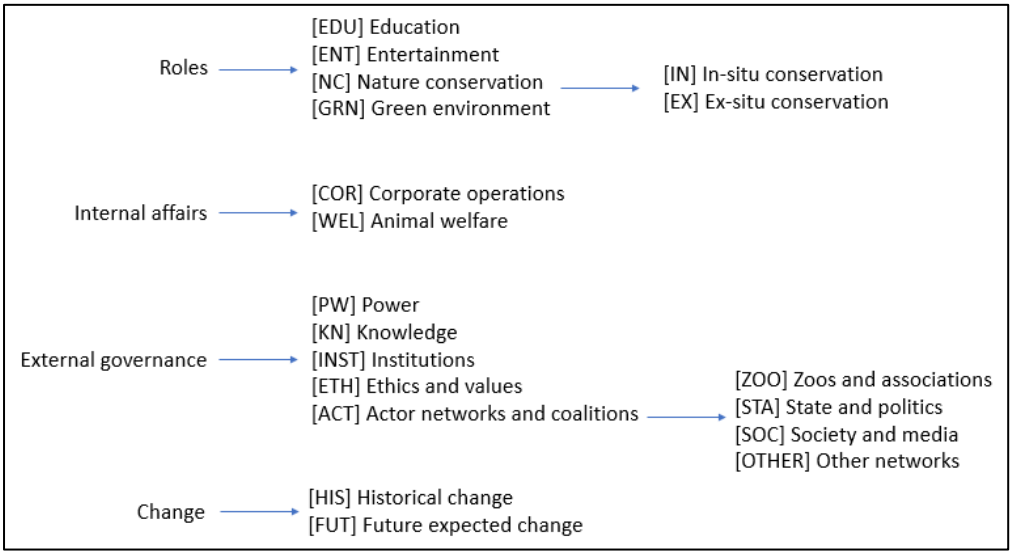

Figure 1: Coding scheme

The coding scheme included four different topics. First, four roles of zoos have been selected, based on zoos' presented positions in society. The role of nature conservation has been split up into in-situ and ex-situ conservation to make a clear distinction between direct efforts at zoos by managing their own populations and indirect efforts made by zoos that contribute to populations in the wild. Second, zoos' internal affairs are considered in terms of the decision-making processes within a zoo, including corporate operations that involve nature commodification, and considerations regarding the wellbeing of zoo animals. Third, the topic of zoos' external governance regimes has been

assessed in terms of power/knowledge, institutions, ethical arguments, and cooperation between two or more actors. Finally, changes in zoos' practices are considered from both a historical and futuristic perspective to establish a time scale. These four topics and their specifications have been derived from the introduction and the theoretical framework, as well as the literature analysis (see chapter 4), to ensure coding of all data relevant to the answering of the main research question and the four sub-questions of this thesis.

After coding the transcriptions, the next step was the extraction of storylines from the data. Storylines are characterised by how meaning is given to the specific issues, and the potential solutions, that they address (Hajer and Versteeg, 2005). This meaning is shaped like a narrative. For example, one storyline on the shipping industry could be narrated as ecologically damaging. Aspects of this narrative could include water quality, marine mammal breeding, etcetera. A storyline includes symbolic references, suggesting a common understanding by different actors (Hajer, 1995). This gives us some direction as for how to recognise a storyline. However, there is no existent methodological toolbox for storyline analysis. Therefore, this thesis has formulated its own approach to the extraction of storylines, specified to the most important themes that occur in the research question.

The four roles of zoos that were addressed in the interviews, as demonstrated in the coding scheme, are the main source of information for the extraction of the identified storylines. A notable trend in the data was for interviewees to address one role as the *main* purpose of zoos, and one or more of the remaining roles as contribution to that main role. For example, the role of education could contribute to the role of nature conservation. This would mean that conservation is the main purpose, and education is a means to that end. Based on this trend, a common theme could be identified for each of the four roles, which include the arguments for identifying one role as main purpose, and for identifying one or more of the remaining roles as complementary to the main role. The simplified narrative on the issues, ideas, and purposes of that main role, which described a more complex debate, and which occurred in more than one interview, was then defined as a storyline (Hajer, 2006). During this process, a lot of pen and paper has been used to make sketches of the connections between all arguments addressed on a certain role. This has helped to recognise a clear pattern, and thereby to identify the distinctions between main roles and their complementary roles. During this process, there was also a focus on examples of certain arguments made in the interviews, as a storyline takes the form of a narrative, and examples then serve as an anecdote that could potentially serve as (part of) a narrative. Special attention was then given to examples on ARTIS, for reasons addressed in the first part of this chapter.

As a next step, in addition to the statements made by the interviewees on the main role and the complementary roles, statements on internal affairs and external governance regimes were used to explain a storyline. This was done by matching the impacts of the explained practices on the four different roles. Some practices served multiple roles at the same time, but then the practice had more impact on one role than on the other(s). Therefore, an interviewee's statement was linked to the storyline of the main role on which it had the largest impact, according to the interviewees. For example, the concept of knowledge has been addressed in relation to all four roles, but each time it has served different purposes. By explaining the arguments made on the purpose of knowledge for each role, it was possible to explain how zoos' roles were established and justified towards other actors. More specifically, the acceptance of a storyline based on its credibility, acceptability, and trust between actors was analysed. This was done by focusing on statements that indicated collaboration between actors, corresponding or clashing visions on zoos' roles, statements on the capabilities of a certain actor, statements on the sufficiency of an actor's resources, and corresponding or clashing beliefs about what knowledge is true or false in relation to zoos' roles. Finally, for each storyline,

interviewees' vision on the future was added to briefly discuss how storylines might change over time. When a certain hypothesised future trend could be explained from a historical perspective, e.g., a communicative development that started ten years ago and will continue to grow in the future, this explanation was added to the storyline description as well. This is done by including interviewee's statements on past changes that have affected zoos, and on changes likely to happen in a future point in time.

After the identification and description of storylines, the data was analysed a second time to check for missed information, incorrect interpretation of any information, or any other faults. Furthermore, the interviewees were e-mailed the direct quotes that were taken from their interview to ask for permission to use these quotes in this thesis, and to refer to their professional function after the quotes. This correspondence led to several minor changes, due to small interpretational discrepancies or wrongful translation from Dutch to English, after which all interviewees agreed to the quotes and references presented in the results section.

4. An analysis of historical transitions in discourses of modern zoos

Before discussing the results from the interviews of this thesis, this chapter elaborates on the common history of zoos across the globe. This is the first step towards answering the first sub-question formulated in chapter 1, namely: How have discourses on the commodification of nature conservation by Dutch zoos transformed throughout history? To do so, the outline of this chapter consists primarily of the content of two books on this topic, namely '*New worlds, new animals: from menagerie to zoological park in the nineteenth century*' by authors Hoage and Deiss, published in 1996, and '*Een moderne ark van Noach: de dierentuin als redding voor bedreigde diersoorten*' (translation: 'A modern arc of Noah: the zoo as salvation for threatened animal species') by author Bemmel, published in 1969. These two books have provided a thorough overview of the history of 20th-century zoos from the era of prehistoric hunter-gatherers. They were selected based on their completeness regarding the focus of this chapter, and the availability of such books at the WUR campus library. However, as these books are currently slightly dated and do not provide specific, in-depth information on certain topics, the chapter has been supplemented by various scientific articles of different authors. These sources have been mostly selected on a Dutch perspective of zoos, but also on a European perspective more generally, because of the strong links between different European (including Dutch) zoos at different stages. However, before reaching western European history in this chapter, available (English and Dutch) written literature on the historical perspective of European zoos will lead us to places such as Egypt, the Middle East, and ancient Roman empires. That is because these areas are considered vital for explaining the course of western European history.

This chapter follows Hoage and Deiss (1996) by discussing five different time periods, from prehistoric times up to the 21st century, in terms of zoos' origin, their focus, and their role in society. As humans have domesticated and utilised animals for many different purposes since prehistoric times, the modern zoo as society knows it today is an outcome of these thousands of years of humans and animals living together. This chapter demonstrates the contribution of several different factors to the evolution of zoos as a societal institution, including political and cultural changes, and the evolving knowledges of natural sciences like biology and ecology. As societal institutions evolve and transform over time, their goals and motivations change too. This has implications for zoos' involvement in nature commodification and nature conservation. Therefore, an understanding of zoos' historical background helps this thesis to analyse shifting discourses up until modern times, contributing to the recognition of trends in the evolution of zoos' roles. Especially the roles of commodification and conservation in the evolution of zoos will be analysed for this purpose. After discussing the five time periods in chronological order, this chapter provides a more in-depth explanation of ARTIS's history to serve as a textbook example of Dutch zoos more generally. Finally, some concluding remarks on the historical transformations of Dutch zoos' discourses are made. These remarks relate historical trends to contemporary intellectual, political, and economic changes in western culture to help predict future trends.

4.1. The prehistoric period

The contemporary foundations for keeping animals in captivity have already been laid in prehistoric times. One theory for prehistoric domestication of animals is tied to food production, which is that animals in captivity served as a reserve for times where game was scarce (Bemmel, 1969). This practice is then proposed to have laid the foundations for the future evolution of cattle (Bemmel, 1969). However, there is also evidence of humans keeping animals for motives unrelated to the increase of agriculture at around 10.000 BCE (Hoage and Deiss, 1996). For instance, some claim that prehistoric hunters brought back the young of the animals that they had killed, which were being

brought up by their women (Bemmel, 1969). Hoage and Deiss (1996) explain that these animals potentially functioned as play mates or as hunting companions once they were habituated to humans. The most prominent example of animals as hunting companions is the co-operation of human and wolf – the ancestor of our present-day dog (Bemmel, 1969). Another potential function could be that the animals' body parts were used for decorations and costumes (Hoage and Deiss, 1996). No matter their purpose, keeping animals in captivity could have been a display of the keeper's status (Hoage and Deiss, 1996), which will play a crucial part in the further development of zoos, as will be shown throughout this chapter.

4.2. The period of the paradeisos

With the evolution of permanent human settlements and the aforementioned agricultural revolution at around 10.000 BCE, the relationship between humans and animals began to change. Domesticated animals fulfilled functions such as that of pet, cattle, sacrificial object, draft animal, hunting companion, or ratter, to name a few (Bemmel, 1969). Furthermore, royals started to collect and use animals as game for royal hunts, as subjects of ceremonies, or as a gift to foreigners (Hoage and Deiss, 1996). The large, walled parks in which these animals were held are here referred to as 'paradeisoi' (Hoage and Deiss, 1996). The first evidence of remains of a paradeisos comes from the Chinese Emperor Wen Wang, dating back to 1150 BCE (Hoage and Deiss, 1996). Remains have also been found in Egyptian and Assyrian regions (Bemmel, 1969). Yet, the first documented use of the word 'paradeisos' comes from the era of the Persian empire (Gooder, 2002).

Persian artefacts of regal hunting scenes in paradeisoi date back to before the rise of the Roman empire (Bodzek, 2007). Their obvious purpose was the entertainment of Persian royalty and nobility. Yet, beneath the surface, the aim was to recreate the ideal, ordered cosmos (Mitchell, 2016). The belief was that the original, harmonious world became disrupted and damaged by sickness, and so paradeisoi were built to mimic the original perfect creation (Mitchell, 2016). Ideally, paradeisoi would break through its walls so that the world as a whole would repossess nature's harmony and diversity (Mitchell, 2016). This also entailed that paradeisoi went beyond the collection of wild animals to function as a garden and as agricultural land. Pollen evidence of Ramat Rahel suggests that the garden became more exotic over time, including fruit-producing trees such as the citron and walnut, and more decorative, including plants such as lilies and myrtle (Mitchell, 2016). To conclude then, paradeisos were characterised by its large diversity in plant and animal species from different parts of the empire, its walls, its association with Persian royalties and power holders, its planned, regular design, its dissimilarity to the surrounding landscape, and the abundance of water (Mitchell, 2016). This phenomenon lasted up to the arrival of the empire of Alexander the Great (Mitchell, 2016).

With the rise of the Roman empire around 300 BCE, animal collections increased in importance to be used for gladiator fights, and to serve sacrificial purposes (Hoage and Deiss, 1996). Rich and powerful Romans had private collections to display their prestige (Hoage and Deiss, 1996). Also, the first parks with paid entrance arose, and young alumni attended as part of their education (Hoage and Deiss, 1996). In the western part of the world, the period of the paradeisos eventually ended with the fall of the Roman empire, but paradeisoi lasted well into the 19th century in China (Hoage and Deiss, 1996). By then, the royal paradeisos had become a well-established model for the mystical Garden of Eden, rooted in biblical beliefs (Gooder, 2002). The Hebrew bible was the first to mention our modern word 'paradise' as a reference to hope, fruitfulness and luxury, and as a link to the concept of life after death (Gooder, 2002), based on the paradeisos' image of harmony.

4.3. The period of the menagerie

The attention for the collection of animals by European empires decreased during the middle ages (Bemmel, 1969), with an exception for organised fights with cocks, badgers, dogs and bulls (Hoage and Deiss, 1996). In that same period, however, China already organised maritime expeditions to Bengal (South Asia), led by Zheng He, which led to the presentation of an exotic giraffe to the Chinese court in 1414 (Church, 2004). The giraffe's majestic appearance made quite the impression – some were enthusiastic and fascinated, others thought of it as a waste of resources (Church, 2004). Western regions followed over the course of the 16th century, shifting the trend of animal collection (Bemmel, 1969). Global expeditions increasingly brought Europe into contact with new worlds of Africa, Asia, and the Americas (Hoage and Deiss, 1996). Improved trading connections then allowed exotic animals from all over the world to be brought into Europe (Bemmel, 1969). Also, the connections between European countries impacted the collections. For example, England and the Netherlands had a strong bond and traded exotic plants and animals (Plumb, 2010).

The plants and animals that were collected did not serve a direct purpose on their own, however, in contrast to the previous paradeisos. Instead, the parks in which these collections were housed, here referred to as 'menageries', were more so a demonstration of living trophies and thereby the power and wealth of the collector, as well as the extent of their empire (Hoage and Deiss, 1996). Yet, in the Dutch Golden Age, not only royal families but also rich merchants held such collections, mostly of exotic origin (Bemmel, 1969; Hoage and Deiss, 1996). Obtaining and maintaining exotic animals was an expensive interest, giving these animals the prominent status of commodity in these societies (Plumb, 2010). So, on the one hand, the success of menageries depended on the colonial reach of a nation, and on the other hand, a menagerie was a tool for showcasing the extent of a nation's colonial powers (Hoage and Deiss, 1996). In fact, the growing number of menageries in this period indicates the blooming economy of England, along with other European countries (Plumb, 2010). During the 17th century, many centres of European and northern African cities were establishing a menagerie (Hoage and Deiss, 1996). This points towards an increasing interest in the collection of exotic animals from different societal actors.

The interest in natural sciences that the Renaissance had spiked, caused for menageries to order their caged, exotic animals based on scientific knowledge of taxonomy (Bemmel, 1969; Hoage and Deiss, 1996). The taxonomic classification system conceptualised by Linnaeus began to be used in the 18th century, and only grew in popularity since then (Houtekamer, 2018). In turn, scientific efforts such as anatomical preparations on zoo animals provided new opportunities for learning more about the physiology of such exotic species from the 18th century onwards, making scientists and managers less dependent on knowledge from Renaissance times (Plumb, 2010). On the other hand, menageries also laid the first foundations of public education in the 19th century by simply displaying their exotic collections to all social classes, enabling them to appreciate its variety (Cowie, 2013). Additionally, many menageries provided reasonably priced booklets with information on the animals in their collection, such as their diet and home range, and/or provided oral explanations by zoo keepers (Cowie, 2013). During the 19th century, lower social classes and their school children were welcome free of charge, bringing zoological knowledge beyond the bourgeoisie (Cowie, 2013). However, it was the upper-class public that was encouraged to come and see the animals that were obtained through royal expeditions, making the menagerie a major influencer of social life and cultural factors such as music and fashion (Hoage and Deiss, 1996).

Out of all historic menageries, three continue to exist to this day: Schönbrunn in Vienna, Zoo Aquarium in Madrid, and Jardin des Plantes in Paris (Bemmel, 1969). Schönbrunn is now seen as the first classical zoo, including its 1752 design, from when Holy Roman Emperor Francis I gifted the

animal collection to his wife Maria Theresa (Hoage and Deiss, 1996). By then, Vienna already had historical experience with importing and keeping exotic animals, since for example lions, cheetahs and monkeys had already been kept since the 16th century (Gschwend, 2018). These animals were not only of interest to scientists, but also to artistic craftsmen, as they were the leading actors of many paintings and other artworks (Gschwend, 2018).

4.4. The period of the classical zoological park

The 1789 French Revolution brought some significant changes to the collection of plants and animals (Hoage and Deiss, 1996). Yet, it is difficult to indicate the dividing line between the definitions of a random collection of exotic species and a zoo. This thesis defines the classical zoo as an institutional collection of animals and plants, combining the aims of scientific advancement and public amusement (Hoage and Deiss, 1996). As most 19th century zoos were scientifically focused, they organised their exhibits based on the taxonomic classification of the animals in their collection (Hoage and Deiss, 1996). The increasing amount of research on animal species by zoologists also has contributed significantly to subsequent science (Bemmel, 1969). For example, after Darwin published his theory of evolution in *The Origin of Species* in 1859, the bodies of apes that died in captivity were on popular demand of both Darwinists and opponents to conduct dissections; especially on the brain (Hochadel, 2005). Yet, zoos did not always blindly follow popular naturalists' research, sometimes even challenging their statements. The guidebook of Brussels Zoo in 1856 refuted some of naturalist Buffon's claims, encouraging the zoo visitor who's reading the guidebook to observe the animals' behaviour in their enclosures and learn from it (Lambrechts, 2014).

This scientific focus also impacted zoos' collections. For example, 19th century Regent's Park Zoo stood out from other menageries at the time because of the large proportion of scientifically interesting species they exhibited, which were not the crowd pullers (Hoage and Deiss, 1996). This 'scientific collection' displayed 19th century British social and professional elitism, and its economic potency, as the variety of the animals displayed demonstrated the range of British trade (Hoage and Deiss, 1996). Instead, the elephants and predators were the crowd's favourites, because of the major contrast between their natural ferocity and their artificial powerlessness (Hoage and Deiss, 1996). In fact, *"Keeping exotic animals in captivity was a compelling symbol of human power in general […]"* (Hoage and Deiss, 1996, p.50). Classical zoos needed to establish a balance between the scientific relevance and the showmanship of their collection. Also, the educational aspects of zoos continued in the 19th century through the oral tours through the parks (Sampaio, Schiel, and da Silva Souto, 2020). The value of children's education through play was recognised too, making the youth a target public for zoos by organising pony, camel, or elephant rides (Lambrechts, 2014). These rides point to the fact that visitors not only paid to observe exotic animals in their enclosures, but also circus elements were common among European zoos, often involving performances with large mammals such as tigers, polar bears, and elephants (Hoage and Deiss, 1996). Additionally, even humans were exhibitioned for visitors to observe, provided that they belonged to 'exotic' civilisations, such as African or Inuit peoples (Hoage and Deiss, 1996), here referred to as ethnological exhibition.

The period of the classical zoo can be characterised by the increasing involvement of civil society. The management more often consisted of upper-class, civil zoological societies with a scientific focus. Also, zoos increasingly welcomed the middle class public (Bemmel, 1969), but a civil class distinction remained obvious as the working class was still only allowed to visit at limited days and times (Lambrechts, 2014). The importance of this social factor of zoos can be illustrated with an example of Brussels Zoo, which formulated their main goal as the entertainment of the middle class in 1851, for instance by organising concerts in the park (Lambrechts, 2014). This trend coincided with the growing political power of middle class society (Lambrechts, 2014). The influence of naturalists in the

management increased, arguing for the selection animals of taxonomic interest, without regard to their attractiveness, edibility, or other usefulness (Hoage and Deiss, 1996). One example hereof is Berlin Zoo, which was established as a royal menagerie during the period of imperialistic expansion, but became independent from the crown during the 19th century to be managed by a university professor of natural history (Hoage and Deiss, 1996). The same is true for the beginning of ARTIS. In 1838 the Amsterdam Royal Zoological Gardens was established, becoming a public zoo in 1839 (Hoage and Deiss, 1996). After a visit from the Dutch king in 1852, the gardens were renamed Royal Zoological Society (Hoage and Deiss, 1996). Consequentially, instead of the monarchical superiority of a menagerie, a classical zoo represented great civic pride (Hoage and Deiss, 1996). Another consequence was the withdrawal of monarchical funds in many cases (Hoage and Deiss, 1996). The French Revolution that kicked off the period of the classical zoo resulted in a spreading aversion to the absolutist monarchy (Sampaio et al., 2020). Thus, public and private funds, including zoos' entrance fees and tax abatement by the government, were crucial for maintaining the growing number of animals in zoos during the 19th century (Sampaio et al., 2020). Together with the implementation of animal protection laws, the growing expectations of zoo visitors caused the zoo managers to improve their practices on an ethical level (Sampaio et al., 2020). Hence, the key trend in the period of the classical zoo is the increased involvement of civil society in zoo management.

4.5. The period of the modern zoological park

In addition to the aims of scientific advancement and public entertainment in classical zoos, modern zoos include two more main aims: namely education and nature conservation (Sampaio et al., 2020). Regarding the latter, conservation interests used to be far from a priority on the political agendas of the 19th century (Bemmel, 1969). Over the course of the 20th century, however, the threats to wild animal species became increasingly recognised (Hoage and Deiss, 1996). From there, nature conservation became more of a focal goal of zoos, changing their practices and philosophies (Knowles, 2003). For example, zoos' focus on acclimatisation (habituating and breeding exotic species for domestication purposes) diminished (Lambrechts, 2014). Also, the Zoological Society of London started to focus their collection more on endangered species and less on crowdpleasers (Sampaio et al., 2020).

One way to contribute directly to the conservation of such species was the establishment of breeding programmes. The first example of a successful breeding programme then is of the American Bison, which went extinct in the wild in the 19th century due to overhunting (Hoage and Deiss, 1996), but was reintroduced in 1905 after Bronx Zoo (New York, USA) bred the species in captivity (Bemmel, 1969). The European bison has also been saved from extinction after the First World War; ARTIS has had a major contribution in this conservation practice (Bemmel, 1969). However, breeding programmes of zoos did not usually lead to outplacement of animals into the wild. One issue was that of domestication effects that made the individuals unlikely to survive in the wild, already occurring after several generations (depending on the species) (Bemmel, 1969). Another issue was the atypical food often provided to the zoo animals, which made the animals unable to recognise or attain their natural food in the long run (Bemmel, 1969). Furthermore, at the time of writing, Bemmel (1969) argued that too little attention used to go to the geographical differences of a species, and therefore these different breeds became mixed in breeding programmes. Zoos in the 20th century remained uncertain how to stop these effects.

Zoos not only focused on their own collections, however. Generally, for wild animal populations, the main reasons for their decline and extinction included destruction, disruption and fragmentation of habitats (Bemmel, 1969). For example, superstition was a human threat to wildlife, such as the belief that different parts of the white rhinoceros's body can be used to treat different illnesses and

ailments (Bemmel, 1969). To tackle such problems and to contribute to the conservation of threatened animal species in their natural habitat, zoos became increasingly involved in in-situ projects towards the end of the 20th century (Knowles, 2003). Not only directly, but also indirectly, for example through funding science-based conservation actors (Knowles, 2003). Also, such in-situ projects are not necessarily in remote areas of South-America or Asia: the Royal Zoological Society of Antwerp (RZSA), constituted in 1843, manages Antwerp Zoo and supports nature conservation in their own country (Pereboom, Leus, and Van Elsacker, 2011).

Regarding the role of education, this chapter has demonstrated that the educative value of zoos was already recognised in the era of the Roman empire. However, this thesis defines education as a secondary goal of classical zoos, and as a main goal of modern zoos. That is because with the increasing attention for loss of the natural world, also on the political agenda, zoos took on a more prominent focus on education of the public (Sampaio et al., 2020). Furthermore, as urbanisation and industrialisation persisted over the 20th century, the cities' green surroundings diminished and its housing offered little to no possibility of keeping pets, thereby increasingly dissociating its inhabitants from nature (Bemmel, 1969). Zoos became increasingly recognised as a green hotspot in urban living environments (Lambrechts, 2014), and as a last resort for people to see and learn about the threatened animal species (Sampaio et al., 2020). The focus on educating children in zoos came to be on the value of people's natural surroundings (Bemmel, 1969). Hence, over the course of the 20th century, educational school excursions to the zoo became preferred over less meaningful, simply entertaining visits (Knowles, 2003).

Another contributor to education in zoos was keeping and breeding threatened animal species for its visitors to connect with, making its visitors familiar with a few individuals of threatened species, which created a sense of public concern for the fate of the species in the wild (Bemmel, 1969). This creation of public concern was considered a major factor in the success of nature conservation (Bemmel, 1969). One specific case, described by Bemmel (1969), is that of the orang-utan. Babies of this species used to be captured in South East Asian rainforests, killing the young's mother in the processes, to be shipped to zoos all over the world. Yet, as social resistance against the capture of these young increased, an organisation called OURS was set up in the 1960s, and this practice became illegal in an increasing number of countries. Consequently, the efforts for breeding this species in captivity took off (Bemmel, 1969). Even though the contemporary political situations made OURS variably successful across the globe, the impact that civil society can have on zoos' practices shows throughout the 20th century.

Within zoos, educational practices such as guidebooks and oral tours remained, and got complemented by, for example, informative texts and visuals next to enclosures on the species (Sampaio et al., 2020). The information provided in zoos also changed over time. For instance, as the evolution theory became more well-established, the claim that apes were simply degenerated humans was scrapped from the guidebook of Brussels Zoo (Lambrechts, 2014). However, the trick part of providing educational materials in zoos was to teach people the importance and methods of environmentally friendly behaviour, while still offering an enjoyable day at the park (Sampaio et al., 2020). Therefore, educational communication had to be more subtle and fun for those entertainment-seekers (Knowles, 2003), degrading the strength of the message that zoos potentially could have propagated (Sampaio et al., 2020).

To then return to the subject of scientific advancement, in a similar trend as education and nature conservation, zoos also became more engaged in scientific research, investing more resources and improving the quality of the research (Hoage and Deiss, 1996). For example, the (aforementioned) RZSA increasingly focused on scientific research since the ending of the Second World War,

partnering up with various academics, and receiving subsidies from the Belgian government (Pereboom et al., 2011). Conservation research focused on themes such as population management, conservation biology, ethology, and wildlife health, thereby producing knowledge that is useful for ex-situ practices in zoos, and for in-situ nature conservation practices (Pereboom et al., 2011). RZSA's objective was to share this knowledge with relevant actors through useful partnerships (Pereboom et al., 2011). At that point, collaboration between zoological institutions was a generally novel trend, as zoos in one country knew sharp competitions in the 19th century (Lambrechts, 2014). Yet, the improved exchange of information between zoos and the transfer of animals for wellbeing and conservation purposes both boosted the self-sustainability of zoo animal populations (Knowles, 2003). Initially, zoos' joint efforts resulted in the first studbooks in 1932, on European bizons, and in 1959, on Przewalski's horses (Knowles, 2003). Various 20th century zoos increasingly focused their research efforts on internal practices, such as breeding of captive animals (Sampaio et al., 2020). However, through these research efforts, zoos could also make a bigger impact on in-situ conservation projects when useful partnerships were established. That is because the information discovered from such ex-situ research projects could be shared with in-situ conservation projects; and vice versa (Sampaio et al., 2020). Improved communication technologies and travel options in the 20th century encouraged this exchange of information (Knowles, 2003).

To finance in-situ conservation efforts, such as wildlife reserves, tourism was established as one strategy during the 20th century (Bemmel, 1969). Also, historically, zoos also generated income through the sale of animals to other zoos to pay for the housing of their collection (Bemmel, 1969). Especially purebred individuals increased in monetary value as zoos became more engaged in protecting specific, geographically diverse breeds of species (Bemmel, 1969). By the end of the 20th century, however, most western zoos had put an end to the financial valuation of individual animals, so that also transfers of animals between zoos were on a non-monetary basis, contributing to conservation projects in zoos (Knowles, 2003). Nonetheless, financial resources were a serious constraint in this period: *"Nature conservation institutions always have plans, always have ideas, but always lack money,"* (Bemmel, 1969, p.76, translated).[1]

A major focus was then on the creation of financial revenue through zoo visitors. Therefore, the expectations of the visitor had to be met, so that visitors were amused and surprised, because after all, they were the ones who provided the financial means for keeping the zoo running (Knowles, 2003). This brings us to the subject of monetary valuation by means of entertainment of zoo visitors. Whereas most zoo in eastern Europe and North America are publicly funded, western European zoos are mostly the result of an individual's interest for collecting exotic animals, having evolved into commercial businesses in a capitalist environment (Knowles, 2003). The concept of commodification of wildlife thus started from the accessibility to animal collections by the general public (Sampaio et al., 2020). Because the visitor's expectations needed to be met to generate financial return, this also influenced the goals of zoos, sparking competition between these businesses (Sampaio et al., 2020). For instance, zoos would not purchase a type of animal that could not be showcased to the public (Bemmel, 1969). However, Bemmel (1969) pleaded for careful selection of conservation subjects for zoos' collections, as he stated that once extinct, an animal could not be brought back to life on earth. Hence, zoos' roles of education, conservation, and entertainment require a careful balancing: *"Even now, we must be careful that commercial motives will not weigh too heavily,"* (Bemmel, 1969, p.124, translated).[2]

[1] Original quote: "Natuurbeschermingsinstanties hebben altijd plannen, altijd ideeën, maar steeds geld te kort."
[2] Original quote: "We moeten er nu zelfs voor waken dat commerciële motieven geen al te groot gewicht in de schaal gaan leggen!"

To showcase animals in a way that appealed to the public and did right by the animals, Carl Hagenbeck revolutionised the concept of zoological exhibition in 1907 in Hamburg by creating illusionary 'bar-less' enclosures that display animals to the public in a seemingly natural habitat (Hoage and Deiss, 1996). To illustrate, in figure 2, polar bears and seals appear to be in a natural enclosure together, when actually they are separated by a moat (Hoage and Deiss, 1996). What is *not* shown in this picture is a cage with bars. Hagenbeck believed bar-less enclosures improved the health of zoo animals and provided them with the opportunity to display their natural behaviour, which also provided a more fun and educational experience for the spectators (Sampaio et al., 2020). This concept rapidly spread throughout Europe, and American zoos followed in the 1970s (Hoage and Deiss, 1996). Hagenbeck's approach, based on the construction of more natural and ecologically oriented exhibits, remains dominant to this day (Hoage and Deiss, 1996). However, showcasing an animal to the public can be contradictory to its needs for well-being (Bemmel, 1969). A balance had to be found between displaying animals in an illusionary natural enclosure, addressing the animals' primary needs, and maintaining practical and safe situations for the zoo staff, visitors, and animals (Bemmel, 1969). One example of a challenge was housing animals with complex social structures, such as chimpanzees (Bemmel, 1969). Also, veterinary care for zoo animals was improving (Bemmel, 1969). For instance, the discovery of tranquilising substances and methods in the 1960s improved possibilities for examining and treating many different animals (Knowles, 2003). There, the contemporary debate on animal welfare has already been recognised by modern 20th century zoos, and this had its impact on the choice to include or exclude a species in a zoo's collection.

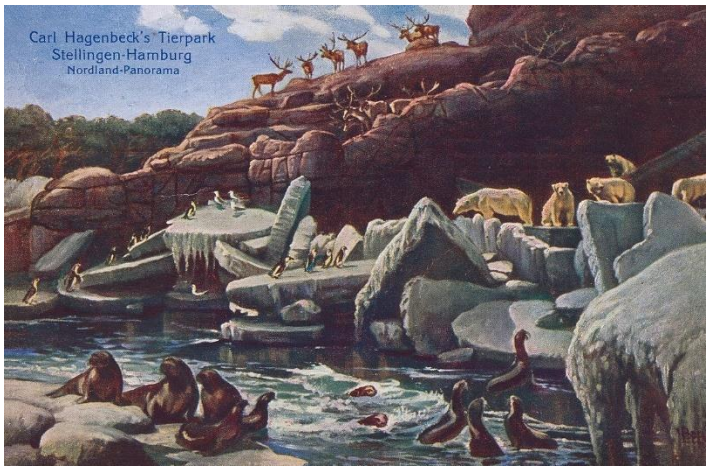

Figure 2: Hagenbeck's natural enclosure for arctic animals. Retrieved from https://nl.wikipedia.org/wiki/Carl_Hagenbeck on 06-01-2021.

4.6. A historical perspective on ARTIS

This subchapter elaborates on the history of ARTIS specifically, to give a more detailed illustration of certain impacts and events that Dutch zoos had to deal with in the 19th and 20th century. ARTIS started off as a classical zoo in the 19th century, led by the zoological society 'Natura Artis Magistra' (Smit, 1988). Originally, the zoological park was meant for the bourgeoisie to enjoy the ambiance and company, and hence it was considered a cultural centre for the upper class civilians (Houtekamer, 2018; Smit, 1988). ARTIS also held great value to scientists, for instance to those who participated in the Darwinist experiments on the deceased bodies of apes (Houtekamer, 2018), described in the fourth period. Also, animal enclosures were ordered on basis of the taxonomic system, establishing its scientific character (Houtekamer, 2018). Yet, with increasing knowledge on animals, the dividing line between human and animal began to fade, inducing an ethical debate on the role of animals in the Netherlands (Houtekamer, 2018).

However, after ARTIS opened up to the general public in 1902, its character changed, resulting in a diminishing number of members (Houtekamer, 2018). On the one hand, university institutions took over the role of scientific research facility, and on the other hand, cultural institutions such as the Concert Hall drew in the bourgeoisie class who was looking for musical and artistic recreation (Houtekamer, 2018). The park struggled to remain relevant up until 1927, when a new director took control over ARTIS. This director, the biologist Sunier, significantly refocused the purpose of ARTIS

(Houtekamer, 2018). Sunier directed attention towards the general public, shifting away from a scientific institution to an exhibitionist institution based on scientific, educational and aesthetic values (Houtekamer, 2018). Generally, it was said that ARTIS was the place where animals could be seen that were going extinct in their natural habitat (Houtekamer, 2018). To this end, also ARTIS applied Hagenbeck's concept to exhibition, so that visitors could get a taste of the exotic wilderness, only right in Amsterdam (Houtekamer, 2018). At the same time, these new enclosures reflected the new purpose of ARTIS to conserve endangered species (Houtekamer, 2018).

Despite the director's success at transforming the goal of ARTIS, the 1930s depression made it harder for the remaining private funders to carry the financial burdens of the park (Houtekamer, 2018; Smit, 1988). Public funding was established in those years, rescuing ARTIS from bankruptcy (Smit, 1988). Still, Sunier refused to raise the entrance fee of the park, stating that ARTIS had to be an open, cultural institution that was accessible to as many as possible; not a commercial company (Houtekamer, 2018). A decade later, Sunier helped ARTIS live through the problematic Second World War, dealing with absconders and food shortage, amongst many other difficulties (Smit, 1988). The recovery after this period was slow but steady: in 1968, ARTIS was one of the most populated zoos by housing 1820 different species in the park (Smit, 1988). However, soon came the realisation that housing all those animals was an expensive task, and that zoos should increasingly focus on endangered species, resulting in a decrease in species number (Smit, 1988). This latter reasoning indicates an increasing focus on nature conservation interests by ARTIS.

4.7. Concluding remarks

Zoos have made quite a transition throughout history, from royal Garden of Eden to a zoological multi-purpose institution. This transition can be seen in three different roles of zoos: entertainment, education, and nature conservation and related scientific research. The main arguments for these roles have been summarised for each time period in table 1:

Table 1: Overview of the interpretation of zoos' roles in five different time periods

Role Period	Entertainment	Education	Nature conservation and related scientific research
1	Animals as play mates; hunting companions; decoration	N/A	N/A
2	Several entertaining qualities for the royal, the noble, and the wealthy	Educative institution for Roman alumni	Restoring the once harmonious world; mimicking Biblical paradise
3	Exhibition of animals as a demonstration of the collector's power for the people to see	Educational activities for the upper-class public, based on taxonomic classification systems	Scientific research on exotic animal species
4	Increasing focus on crowd pleasers to entertain the general public	Educational activities for the general public, such as oral tours	Trade-off between collection of scientific relevance and of entertainment-value
5	The public as source of financial revenue; contradictory with a focus on animal welfare and education	Recognition of zoos' potential to change the public's behaviour in the direction of sustainability	Linkage of ex-situ practices to in-situ conservation; for instance, attempts on reintroduction

Based on these legitimising arguments for keeping animals in captivity, three hegemonic discourses in the historical analysis of zoos can be described. First is the zoo as imperial collection, centred around the display of the power and wealth of the collector, and intended for the use and entertainment of the collector. Second, with the rise of science in Western societies, collections became increasingly focused on taxonomic interest, and civilians were welcomed as both visitors and managers of zoos, providing civil society with an entertaining 'day out'. Science and policy came to

be intertwined as zoological societies became more involved in management. This resulted in the second discourse: the zoo as scientific institution. Third, zoos broadened their perspective to include the roles of nature conservationist and educator, while needing to generate financial revenue from different sources. This leads to the discourse of the zoo as multi-purpose entrepreneurial institution. ARTIS recognisably followed this trend, taking on several roles and focusing on the general public.

Since the time period of the 20th century modern zoo, one can assume that much has changed about both the internal and external governance practices of zoos. For example, serious impacts may have come from increased knowledge on natural sciences and shifting socio-political contexts. Such developments leave us with the question of how zoos continued to change their roles and discourses during the 21st century. For example, 20th century research efforts on the 'frozen zoo' concept of cryopreservation, the storage of genetic material in liquid nitrogen, are likely to have evolved, contributing to the prevention of extinction of certain animal species (Benirschke, 1984). Related to the educational role, one could question whether the zoos that now educate the wealthy, western people with plenty of leisure time to visit a zoo (Knowles, 2003), can find a way to reach more remote societies. Or, in the light of the current COVID-19 crisis, one could question whether zoos will remain capable of fulfilling all these roles, while also taking care of zoo animal welfare? This is a relevant question as historical times of crisis, such as the First and Second World War, have shown how animal care can lose priority when economic depression threatens people's livelihoods (Sampaio et al., 2020). To explore with more detail how subsequent changes have been made in zoos' discourses during the 21st century, the following chapter will analyse the results of the interviews conducted in this thesis.

5. Interview results

The previous chapter has thrown light on the historical transitions of zoos' roles and practices, explaining how zoos have transformed from imperial collection, to scientific institution, to multi-purpose entrepreneurial institution. The question that arises then is how zoos are changing contemporarily, and how they may change in the future. In this chapter, the collected data from the interviews will be set out to help answer the remaining three sub questions of this thesis. In total, I have reached out to 36 different individuals or organisations. I have been able to interview thirteen of these actors: five were working for zoological parks, one was working for a zoo membership organisation, two were working for nature conservation organisations, two were working for botanical associations, two were working for animal rights organisations, and one was working for a political party in the municipality of Amsterdam. Of the 23 people who were reached out to but not interviewed, four people said they were constrained by time (17%), eight people said they did not know enough about the subject (35%), six people gave no reason for their rejection (26%), and five people never responded to an email and/or call (22%). Of all thirteen interviewees, eight of them (62%) were accessed through the referral of another contacted actor.

After transcription and coding of the gathered data, four different storylines on zoos have been formulated. These will be described and explained in this chapter. The four storylines include:

A. In-situ conservation actor, generating knowledge and revenue
B. Component in societal behavioural change towards sustainability
C. A focus on plants for nature conservation, education, and recreation
D. Profit-focused amusement park, hiding behind the outer appearance of nature conservation and education

The following part of this chapter will discuss these four storylines in this given order. Each subchapter discusses the information and arguments provided by interviewees that led to the formulation of that storyline, illustrated by quotes, and includes information on relevant external governance practices and internal affairs. Finally, future prospects of that storyline provided by interviewees will be described.

5.1. Storyline A: in-situ conservation actor, generating knowledge and revenue

Considering zoos' role in nature conservation, multiple interviewees emphasise zoos' roles in both ex-situ and in-situ conservation, but the link between these two turns out to be complex. The most straight-forward link, namely reintroduction of zoo animals to their natural habitat, is said to be a difficult task. Issues addressed by interviewees include habitat loss and fragmentation, diseases, habituation to humans, and alienation from the animal's natural diet. Furthermore, one interviewee mentions that financial resources and political willpower are often inadequate. The interviewees indicate that some success stories on reintroduction exist, such as the Griffon vulture-project of ARTIS, and another project on the golden lion tamarin, but they all agree that such stories should be interpreted with caution, as they are the exception rather than the rule. These interviewees then come to the shared conclusion that zoo animals are a 'back-up', a reserve population, in case a species goes extinct in the wild. Hence, ex-situ conservation is only a tool for the fundamental goal of in-situ conservation to protect species in their natural habitat. Consequentially, the question that arises is what the conservation value of zoo animals in captivity is, when they are not useful for in-situ conservation by means of reintroduction.

According to multiple interviewees, that conservation value lies in the production of knowledge *by* and *in* zoos, which can be applied to wild populations of animals, thereby establishing the crucial interaction between ex-situ and in-situ conservation. One example is of a Dutch zoo that has tested the working of GPS-collars on red pandas in captivity, resulting in minor changes in the collar that could then be used for tracking red pandas in their natural habitat. This contributed to in-situ

research on conservation of the species. Zoo staff members who helped work on this ex-situ test also went to the in-situ site to help the local researchers with practical knowledge and skills, such as the best ways to capture and handle the red pandas to put the collars in place. Such projects are then said to potentially open up certain research funds for zoos. Furthermore, multiple zoos conduct scientific research on conservation genetics, aiming to produce more knowledge of the genetic diversity of captive populations (or 'reserve populations' as all zoo-related interviewees say) by gathering data on DNA-sequencing. Although some argue for the need for more applied research instead, which can be used to inform action plans for in-situ conservation, one interviewee actually sees conservation genetics research as the most pressing need for conservation:

> *"So that we can manage these populations more accurately, so that we can better preserve the genetic diversity that we have, [compared] to the genetic diversity in the wild, [so] we can better determine the value of this population compared to the wild population and how it could potentially contribute to the recovery of those wild populations,"* (zoo employee B).

Several interviewees explain that sometimes, the roles are reversed in the exchange of knowledge: ex-situ application of knowledge that has been produced through in-situ research projects. One interviewee gave the example of observations that are made on the formation of bachelor groups of ungulates in the wild. The findings of such a research project can then be applied to manage zoos' populations more in line with their natural behaviour, improving the animals' welfare. Another example is of one interviewee who conducted research on the diet of prosimians, discovering that that their natural diet consists of a lot less fruits, and thus sugar, than the diet they were fed in zoos. This novel insight is then said to spread relatively quickly between zoos, according to the interviewee of nature conservation organisation B. However, these are fairly exceptional cases:

> *"I think right now, it mostly works the other way around: because we conduct research on animals in captivity, we obtain a lot of knowledge of reproduction strategies or food preferences for example, and [in-situ] projects benefit from that,"* (zoo employee E).

This link between ex-situ and in-situ conservation efforts through the exchange of knowledge is also captured by the International Union for Conservation of Nature and Natural Resources (IUCN) in the IUCN One Plan Approach: a global management plan to integrate zoos' reserve populations to the species' wild populations, aiming to conserve all living animal species as effectively as possible. This involves an extensive network of individual zoos and aquariums, their associations, and nature conservation organisations. Production and sharing of knowledge of all animal species form a key part of that network. Co-operation of zoos, at an increasing international level, is said to be based on the common goal of protecting species in their natural habitat. In fact, the collaboration between Dutch zoos is explained by multiple interviewees to be surprisingly strong, despite the fact that in some way, they are each other's competition. These interviewees say that competitive vibes are still present below the surface, but do not stand in the way of exchanging ideas and best practices, as with the example of prosimians' diets described above. Associations including Dutch zoos, such as European Association of Zoos and Aquaria (EAZA) and Dutch association of zoos (NVD), are said to be a crucial factor for such collaboration:

> *"I think it is really nice that organisations such as NVD make sure that zoos bring out the best in each other, so in that sense, competition does not appear to be an issue,"* (nature conservation organisation B).

Multiple interviewees say that co-operation between all these different institutions is a trend of the last ten to twenty years, and it is likely to grow in the future. They suggest that this trend was supported by the improvement of communicative technologies. Conferences were a major platform

for information-sharing historically and retain that function in modern times, but as for example accessibility to internet improved over the years, Facebook groups have gained popularity in this network. Several interviewees mention that such online platforms will become even more important now that the COVID-19 crisis limits opportunities for offline meetings.

Besides the exchange of information, zoos' associations work on many more collective aims. Interviewees give examples such as population management programmes, including the breeding and exchange of animals between zoos, biobanking, consumer research, and techniques such as cryopreservation[3]. These activities are aimed at both improving present practices of zoos and enhancing the future potential of nature conservation. For example, the practice of cryopreservation on the last two northern white rhinos may not save this species from extinction but serves as 'practice' for conserving different species in the future. In addition, EAZA maintains contacts with larger organisations like IUCN to ensure collaboration between zoos and nature conservation organisations. A bit more behind the scenes, zoos' associations work on political lobbying for zoos, on a national and European level. In turn, zoos recognise the importance of such organisations, and of being a member of them:

> *"I notice that an organisation such as IUCN, for example, has a lot more power than all Dutch zoos combined, because they consult with certain politicians and policy makers, and because they possess the knowledge [of both zoos and nature organisations]. But I believe that such organisations, and perhaps umbrella associations [like EAZA], are our best hope at achieving something at a political level," (zoo employee D).*

However, there are not only upsides to such a membership. EAZA does not portray itself as a decisive factor in the choices that must be made by member zoos, even though they affect the collaborative efforts and goals of an association. For instance, in the case of collection planning, EAZA cannot decide on what species a zoo can or cannot keep. Yet, being a member does come with a certain cost in terms of freedom:

> *"If [members] want to be a part of those programmes, they must commit to following our rules. So, that means no sale of animals, and always complying to a programme. So, if recommendations are made for the transfer of animals or such, you must cooperate,"* (zoo membership organisation).

Furthermore, there are several limitations to this knowledge-based approach. For instance, one interviewed zoo employee mentions that their desired shift from public entertainment park towards a nature conservation – and scientific research – institution is hampered by the current situation on COVID-19. Another interviewee says that relevant research for in-situ conservation can be lost out of sight at times, as much ex-situ research is focused on animal husbandry to improve welfare. For example, Best Practice Guidelines exist for many animal species that are being kept by zoos, and are being widespread between zoos globally, including information such as how to best raise orphaned young, or how to best sedate it. These guidelines contain a plethora of information on animal welfare relevant to zoos, but not necessarily to wild populations.

Although welfare of zoo animals may not directly be linked to in-situ conservation, it does serve another useful purpose: the generation of financial resources through attracting zoo visitors. These visitors of Dutch zoos pay a certain entrance fee, which makes up for a large part of zoos' revenue, and part of that revenue is invested in in-situ conservation programmes. For example, ARTIS has selected five programmes, but it remains unclear how much financial support these programmes

[3] Cryopreservation is here defined as the storage of ova and sperm cells in liquid nitrogen, for purposes such as preservation of a rare bloodline, with the aim to enhance genetic diversity in the future.

receive exactly. To attract paying visitors, zoos must have an interesting collection, provide the people with a certain entertainment-factor, and meet their expectations on animal welfare. Most interviewees explain that visitors are paying an increasing amount of attention to the welfare of zoo animals and becoming more critical towards zoos that do not meet their standards. This relates to the statement of multiple interviewees that zoos should be more communicative towards their visitors about their work on nature conservation to enhance the visitor's understanding and appreciation. On the other hand, however, visitors still expect to be entertained as they generally visit a zoo to enjoy a day out, and therefore they want to be able to observe the zoo animals:

> *"That is something we do struggle with. You want to prioritise animal welfare, so the animals need to be able to hide and show their natural behaviour, but visitors need to be able to see them. So, finding a balance between those two is something that we really work on,"* (nature conservation organisation B).

In addition to the funds generated through visitors, collaboration with businesses to attract financial funding for in-situ conservation is said to be essential for making an impact. This is even a focal point of EAZA's future plans. One example of the involvement of the business sector is of ARTIS, which functions as an event venue for large business players, providing a new source of financial revenue. Several other zoos are also said by interviewees to provide similar services to businesses.

To transfer the generated financial resources to in-situ conservation programmes and organisations, zoos often use foundations. In short, zoos transfer money to nature conservation foundations, and these foundations can redistribute the money or use it for conservation efforts themselves. This has several different reasons. First, tax authorities and legislative statutes complicate the direct transfer of financial resources from a corporate zoo to such in-situ projects. The details differ between Dutch zoos, as they have different legal structures, from profit-oriented businesses to being foundations themselves. Despite these differences, however, the use of in-situ foundations to contribute monetarily to in-situ programmes is the rule according to multiple interviewees. Second, local institutions are deemed more efficient in managing such projects: *"There can be a vast difference in how you invest your money and involve people. It is so important to properly involve the people who live in those areas,"* (nature conservation organisation A). Another interviewee adds that an impact can be made faster when smaller, more local conservation communities are involved. The consideration of such "social dimensions" of conservation is not only crucial for enhanced efficiency, however. Multiple interviewees stress the necessity of locals' commitment for the long-term success of conservation programmes, saying that locals should be provided with education on the importance of the conservation programme, and with an incentive for conservation work to meet their needs. Fortress conservation is said only to cause conflicts, instead of a sustainable solution. One interviewee gives the example of an Australian couple who worked on the conservation of a species of tree-kangaroo, the tenkile, in Papua New Guinea. They have found local communities to be more cooperative in the conservation programme when they received certain benefits from that programme, such as the installation of much-needed water tanks. These interviewees say that they expect the involvement of local communities in conservation to further increase in the future.

More specifically, two interviewees also mention that local zoos have the potential to contribute significantly to in-situ conservation. First of all, local zoos can educate the local communities on their environment and the problems associated with it. However, this is currently not widely applied: *"In a lot of regions with in-situ projects, their education can really improve, and be more professional,"* (zoo employee C). Besides that, several interviewees emphasise that the popular Dutch culture of "family excursions" to zoos, amusement parks, etcetera, is exceptional compared to most countries, so zoos may not have the desired effect in other parts of the world. A second potential purpose of

local zoos is that they can keep animals in their natural habitat, so that reintroduction faces less issues. Those animals are generally better suited for reintroduction as they are said to be more feral than those at Dutch zoos, better accustomed to their natural diet and the climate, and less habituated to people. Instead, the problem here is with the organisation:

> *"[Reintroduction] is very badly coordinated, so I am unsure whether that has a lot of potential, but in terms of survival of the animals, I think you have a better shot over there than here, with an animal that is used to a zoo's creature comforts,"* (nature conservation organisation B).

Improving the coordination at local zoos, for example by establishing policies for the release of animals, would require more intense collaboration between in-situ and ex-situ actors. Yet, this chain of actors and events in nature conservation is described as lengthy and complicated by multiple interviewees. Each section of the chain requires its own resources, such as knowledge or financial means. The scarcity of resources for nature conservation then adds onto the importance of focusing on investing in programmes that are *"as efficient as possible,"* (nature conservation organisation A). Therefore, when choosing on which in-situ conservation programmes to support, zoos formulate several wishes and demands:

> *"Our wish is to connect [an in-situ programme] to a species we also keep at our zoo, and preferably on which we participate in a breeding programme. [We also set] several quality demands, so we do want to have a conversation with the people of that nature conservation project, and we want to know what their vision is for the future, and how they spend their money, [to establish] at least some expectations and testability,"* (zoo employee D).

The preference for in-situ conservation programmes on species that are in a zoo's collection is said to be because this makes it easier for visitors to connect the dots between the animals in captivity and their cousins in the wild. Zoos can more easily tell their story on conservation that way, engaging the public in the importance of their conservation efforts:

> *"It involves knowledge and interesting stories, but it is actually also a bit of touching people's hearts and making them passionate about nature, and hopefully then also for nature conservation. And that can be donating something in the collection box for nature conservation because they really like our project, but that can also be that they go home, thinking to themselves: I have become more thoughtful about using plastic because that is a serious problem for the ocean,"* (zoo employee C).

This quote demonstrates not only the utility of zoo visitors to generate financial revenue for in-situ nature conservation programmes, but also hints towards an aim to change their intention on sustainable behaviour. This aspect will be explored more in-depth in the following storyline. But first, to conclude storyline A, zoos are said to contribute to in-situ nature conservation by ex-situ practices of maintaining reserve populations, conducting research on those populations, and providing financial resources to nature conservation programmes and organisations. To make such contributions, interviewees mention the importance of the growing collaborative network of zoos, membership organisations, and other conservation institutions on a mostly European scale. The exchange of knowledge is a crucial part of that network, and zoos are said to be growing in their role as researcher in that network. Yet, zoos' conservation efforts do require to be balanced with other interests, such as the entertainment of visitors, and the resources required for zoo animal husbandry. This is said to be a limitation to the potential growth of zoos contributions to in-situ nature conservation in the future.

5.2. Storyline B: educator promoting sustainable behaviours in society

Many interviewees address the need for change on a wider scope than only in-situ conservation, referring to the unsustainable behaviour of people worldwide that leads to issues such as overfishing, overgrazing of cattle, fast fashion, and plastic waste, to name a few. In fact, all interviewees agree on the need for a shift towards a more sustainable handling of the planet and the environment. ARTIS-interviewees specifically mention that their mission is to inspire people to deal with the planet in a more sustainable manner. The main consequence of unsustainable behaviour that zoos focus on then is biodiversity loss. Therefore, to tackle in-situ conservation issues more effectively, these interviewees say that sustainable behaviour needs to become the social norm. One interviewee specifically mentions that school children are most important to target, as their focus on sustainability will make the largest impact in the long run. Another target actor is the business sector: the aforementioned functioning of ARTIS as event venue not only generates financial revenue, but also provides ARTIS with the opportunity to educate businesses on environmental issues, aiming to increase awareness and stimulate sustainable behaviour. This should inspire more people through a snowball-effect: *"You only have to inspire a few of them, and they will share that with each other, so then the ball starts rolling,"* (zoo employee E).

The interviewed zoo employees state that zoos are thus taking responsibility to contribute to the behavioural change by educating their visitors on the different environmental problems, and this educational role of zoos is becoming increasingly important as these problems are growing. Yet, many recognise that changing one's behaviour is a difficult, lengthy process and zoos cannot make that shift happen on their own: *"We will only be a small component within the aspect of what you can affect to really become a nature conservationist, but still, I do see that as our mission,"* (zoo employee A).

Zoos' educational content then aims to inform visitors on these problems, but also to address why it is important for people to care for the environment. This is emphasised by one interviewee, who says they noticed that their visitors are becoming increasingly alienated from nature and the circle of life. They give the example of a tiger's diet, saying that visitors should be able to see a tiger eats meat off a carcass of a bovine animal, and that such a demonstration is part of a zoo's educational role. They also emphasise the importance of explanation to visitors, to ensure that they receive the right message and learn from such experiences rather than to become horrified by them:

> *"It is better for the animal, for their behaviour and digestion of food, and it shows a bit more of the natural cycle than when you feed a piece of meat behind the scenes at night-time,"* (zoo employee C).

Another interviewee makes the comparison between a gorilla and a human, saying that both are great apes, and this helps teaching people that they are part of nature and the circle of life, instead of outsiders living next to nature. These examples of natural systems demonstrate why these interviewees also argue for focusing their educational content on increasing people's knowledge. In that way, zoos try to beat the rule of 'ignorance breeds tolerance', so that the other way around, learning more about different animal species makes people more willing to change their behaviour if that means it helps those species to survive in their natural habitat. This strategy of improving knowledge is thus a way of explaining to visitors *why* they should change their behaviour:

> *"Recently there was an article in Nature Today, which stated that two-thirds of the Dutch do not know what biodiversity is. If you do not know what [biodiversity] is, then how could you be interested to help? So, I think that education is quite important, and I see that more and more zoos are also taking their responsibility,"* (nature conservation organisation A).

> *"As the gravity [of environmental problems] increases, your role [as a zoo] becomes stronger, and you can better transfer your message because people truly must listen to [that message], and they are starting to realise that they should,"* (zoo employee E).

As of *how* zoos should do so, all interviewed zoo employees agree on the importance of providing their visitors with an "action perspective" on what they can do themselves to help solve those environmental problems. This results in a pragmatic approach on education in zoos; a new evolution over the last decade or two. Yet, this is not an easy task. On the one hand, several interviewees say that the message being sent by zoos could be stronger to make a larger impact on the visitor. On the other hand, however, flooding visitors with all the problems that exist around nature conservation can have a reverse effect, demotivating the people through a large amount of negativity. This is linked directly by these interviewees to the necessity of providing visitors with a fun day out "to receive the message" (zoo employee E). Therefore, the entertainment-role of zoos is described as a crucial factor within the role of education, saying that visitors would not be as receptive to the heavier content if the fun content was missing. Providing visuals is explained to be one approach to sending a message:

> *"We have one kreisel tank[4] holding jellyfish, and one kreisel tank that used to hold jellyfish, but we have put plastic bags in it, and above [those tanks] is the model of a sea turtle. That all makes it very visual, and so, it comes across very effectively that sea turtles can easily mistake themselves in whether he is eating a jellyfish or eating a plastic bag. So, if you can trigger people to recycle their plastic waste or to reduce their use of plastic with such an exposition, I think that [the zoo] has an important task, so that visitors have a fun day out, but they also gain some perspective on what they can do themselves and what parents can explain to their children,"* (zoo employee A).

As explained for the previous storyline, to provide a certain entertainment-factor, interviewees stress that animal welfare needs to be in order. As the focus of visitors on welfare is said to be increasing, people would not accept a message that is coming from an organisation that does not live up to their criteria. Also, multiple interviewees say that educational lessons should not be told 'with lecturing finger', because a patronising approach could actually create aversion to the promoted behavioural change. Therefore, they argue that zoos need to find a delicate balance between bringing a powerful message, and staying modest:

> *"First and foremost, a lot of people come to visit your park, or your zoo, and you do not want to flood them all day long with: 'this animal species is doing bad and for them you need to use less plastic, this animal species is doing bad and that is because you eat meat', so there is some sort of tension span. But I do think that perhaps in a fun, creative way, we could be a lot firmer about that,"* (zoo employee D).

A commonly addressed solution to this dilemma is to provide zoo visitors with an option to either receive more information on a topic, or to pass by. For instance, people can decide not to read an informative sign next to an enclosure, or not to listen to a presentation from a zookeeper. This links to the argument that the success of impacting a person's behaviour depends not only on the educational content provided by zoos, but also on that person's intention when visiting a zoo and receiving information on sustainability.

[4] A kreisel tank is a circular acrylic tank without any corners, which is especially useful for holding species that could damage themselves on the corners of an angular tank, including jellyfish.

To transfer this message to visitors, zoos typically use the method of storytelling. This entails that facts on a certain topic, such as the example of a tiger's diet, are told to the public in a coherent narrative, aimed at unlocking emotions. Stories are said to be focused on demonstrating both the beauty and the vulnerability of nature. For instance, ARTIS aims to tell the story of organisms of all sizes, from microbes to megafauna, placed in a larger context to demonstrate how different parts of nature and the planet are connected to each other. This is said to be done with the intention of increasing people's knowledge of such natural systems. According to the interviewees, storytelling makes a greater impact on the auditor than only explaining the facts without any context, and therefore it is more effective in changing behaviour. Storytelling is implemented in several different components of the park then, including *"several different stops in the park, the signs, a tour guide's story, and so forth,"* (zoo employee C).

Supporters of the educational role of zoos then explain that a zoo's story would not be complete if nature conservation efforts would not be included, and that conservation adds to their reason to exist, as only an educational function might not be sufficient to justify the keeping of animals in captivity. As mentioned in storyline A, zoos prefer to contribute to in-situ conservation programmes on species that they hold in their own collection. In this storyline, this preference is said to be because this makes the link between ex-situ and in-situ conservation efforts easier to understand and appreciate by visitors. For example, one interviewee mentions that certain practices of in-situ nature conservation can be formulated to an action perspective in the visitor's own back yard to place a birdhouse for native bird species: *"That way, you can establish a nice link between nature of an exotic species and nature nearby,"* (zoo employee D). Such links are said to be a crucial part of storytelling to make a more direct impression on the audience. This explains the purpose of nature conservation elements in the educational focus of zoos:

> *"Zoos do often contribute to nature conservation, also because they want to make visitors aware of what is happening in the wild, [by explaining] how the animals live in the wild, but also what they encounter in the wild. If zoos do not engage [in nature conservation], then their story is incomplete, I think. […] It is an excellent way of making people aware precisely of what is going on and what they can do themselves,"* (nature conservation organisation B).

However, collection plans are based on several different factors, and not all species that are kept in zoos are threatened in their natural habitat, and therefore have little priority to nature conservation research. Such species do serve another function to zoos, though, as they make an important contribution to the story that is being told. Breeding programmes on these species still exist, but they are focused on maintaining healthy collections in zoos rather than establishing a reserve population, as taking animals from the wild to be placed in zoos is deemed unsustainable by multiple interviewees and moreover, legally forbidden in the Netherlands. Meerkats are twice given as an example of such a species that has a prominent role in education, without being tied to conservation efforts. Instead, meerkats provide the aforementioned crucial entertainment to visitors, while still telling a story about the workings of nature, enhancing people's knowledge of several different topics, and even being budget-friendly to keep:

> *"You actually keep [meerkats] to tell a story about social behaviour, about family life, about task division, about care for the young. That is very nice, and it is also not really a species on which you must spend millions each year because it is an easy species to keep. […] The appeal of meerkats is just very high, people really like to look at meerkats, because there is a lot going on there. That is fine with me, because visitors have an easy species that is fun to watch, and later on, we will tell something about the cotton rat or the threatened crested ibis, so I think that variation is important,"* (zoo employee C).

Zoos do not have to do this storytelling alone, however. They engage in different kinds of collaborations and exchange information with actors to enhance their stories. For instance, multiple interviewed zoo employees explain that nature conservation organisations are offered a stage in zoos to tell their story and directly address the visitors to acquire donations. This creates another source of revenue for these organisations. Interviewees name nature conservation organisations such as WNF, Greenpeace, Dutch Gorilla Foundation, and the foundation ARK (on nature development) as users of the platform that zoos provide. This stage can take the form of information stands or exposition rooms, for example. Interviewees describe this as a win-win situation: nature conservation organisations enhance the educational value of zoos by informing those visitors on the issues that the organisation focuses on, and the organisation gets a new, extra opportunity to reach out to a different audience than usual, enlarging their outreach. Such collaborations are driven by shared motivation: *"In the end we do have a common goal, and that is to turn as many people as possible into ambassadors and protectors of nature,"* (zoo employee A).

Furthermore, zoos collectively work on building their message. In line with storyline A, multiple interviewees argue that associations such as NVD and EAZA are major players in that coordination. For instance, EAZA aims to bring all its members together to create one uniform message for zoos to carry out. This requires a delicate balance between giving member zoos the authority to formulate their own message based on their mission or focus and the cultural beliefs in their location and reducing discrepancies between the messages that different zoos are propagating. Often wicked problems are addressed in these messages, to which not one solution or answer exists. A given example then is the debate on the (un)sustainability of palm oil. The association tries to involve all their members in the formulation of a core message, to which zoos can add their own twist and make it relevant to their own mission and public. This is supposed to help the audience better understand the problem and the corresponding action perspective:

> *"[Palm oil] is already a complicated case, and if you carry out fragmented or conflicting messages, then of course the impact is not as big. You can actually create confusion. [...] We do not have the answer to solving that [wicked problem], but it would be great if we, as a community, for a couple of things that we deem important or that we can act upon, can carry out one uniform message in all zoos. […] I think then we could be most effective,"* (zoo membership organisation).

Furthermore, EAZA encourages the implementation of a sustainability policy by all its member zoos to strengthen their message on the basis of 'practice what you preach'. For instance, ARTIS interprets this by establishing vegetarian catering facilities at different locations in their park. Educational content provided by zoos is thus implemented at different levels, and quite a lot of thought is being put in what that content should entail. This is in line with the argument made by multiple interviewees that zoos "need a good reason" for keeping animals in captivity, and that they are thinking about their zoo's "right to exist" on a regular basis, taking into consideration the zoo's goals and their animals' welfare:

> *"Every day, we question whether we can continue to keep polar bears and elephants for our goals, whether that is in balance. And of course, there are changes in the society and in how we think about how we can keep animals, so I do not rule out that that will change,"* (zoo employee A).
>
> *"In any event, we have to increasingly reflect on the reason for any animal to be kept by a zoo, which is a really important development. Think about that role. […] If an animal does not have [a role], you do not need to keep it," (zoo employee C).*

One interviewee then explains that experiencing animals in real life should make a bigger impact on the audience than when they would watch for example a nature documentary on TV. This experience of the animals in zoos, being able to link those individuals to their cousins in the wild, learning more about the species and their fate, and gaining an action perspective on what visitors can do themselves to improve that fate, all combined are supposed to be the incentives to change their behaviour. In the best-case scenario, a visitor's willingness to change towards more sustainable behaviour becomes large enough to turn them into a nature conservationist, sharing this transition with the people around them to affect those people in a positive way as well. At last, sustainable behaviour should become the social norm, and zoos' educational role should contribute to that end.

In sum, zoos are argued to indirectly contribute to in-situ nature conservation through the role of education. Zoos aim to improve visitors' knowledge on the problems that wild animal population experience and provide them with an action perspective to stimulate a societal shift towards sustainable behaviour. Zoos apply the method of storytelling to convey their message in a fun and comprehensive way. Interviewees mention that more serious educational topics are balanced with more fun content to prevent visitors from being overwhelmed by negativity, which would have an adverse effect on the goal of behavioural change. The network described in storyline A is also relevant here zoos work together to formulate their stories. Yet, interviewees indicate several factors that could change how education is part of zoos' reason to exist in the future, and therefore the educational role in itself may not be sufficient for justifying zoos' existence.

5.3. Storyline C: a focus on plants for nature conservation, education, and recreation

Interviewees agree that zoos may look very different twenty years from now. Most importantly, as more knowledge is being obtained on all sorts of animal species, this sometimes leads to the conclusion that the requirements for ensuring their welfare cannot be met by zoos, and therefore they are unsuitable for life as a zoo animal. Examples such as the polar bear and the elephant are given as interviewees express their doubts on the presence of such species in zoos in the future. In fact, ARTIS has already phased out polar bears from their collection. If the role of such exotic animal species in zoological parks becomes smaller, then other ways of attracting visitors must be found and put to practice. Although zoos, including ARTIS, aim to show a variety of animal species, one common argument among interviewees is the growing emphasis on green in zoological parks, considering flowers, trees, shrubs, cacti, and other types of plants:

> *"Historically, [ARTIS] was sort of a stamp collection with caged animals all lined up next to each other. [It was] a huge line of cages, and now that line has been severed, with a couple of birds flying through the green space,"* (botanical association B).

> *"[ARTIS] is moving away from just that focus on watching monkeys, to nature in a bigger picture, [including] the trees and the plants. There really are several visitors who come to ARTIS for the park, who just really enjoy walking around here, and who [are interested in] reading a sign about a tree,"* (zoo employee E).

When the interviewees speak about this "green role" of zoos, a particular emphasis is placed on zoos in relatively big cities in the Netherlands, namely ARTIS (Amsterdam) and Diergaarde Blijdorp (Rotterdam). As a consequence of increasing urbanisation, with subsequent loss of nature, parks and biodiversity in the cities, these zoos are becoming more important to fill that gap. Zoos would then serve as a space of 'urban nature', according to multiple interviewees, which has several benefits that serve a wide range of stakes. For instance, ARTIS is working on nature conservation both inside and outside their zoo:

> *"One of the priorities in the last couple of years is indeed to spend a lot more attention on urban nature or perhaps Dutch nature in a wider context. […] And I do think that is a trend in the last couple of years, but also in ARTIS we try to contribute to that end, for example by leaving native plant species or weeds where possible, but also by contributing to the recovery of natural areas in other parts of Amsterdam,"* (zoo employee D).

In terms of environmental effects, the interviewee of botanical association A argues that the green spaces in zoos contribute to reducing air pollution by storing carbon dioxide and filtering particulates. This helps the respective municipality become more environmentally friendly, and it creates a healthier living environment for its inhabitants. Another example is the rainwater storage system in ARTIS that is used to water their plants, also in extreme periods of drought, which then helps the insects that depend on the flowers of those plants. This links to the argument that zoos are increasingly working on new strategies to contribute to local biodiversity as well. One interviewee gives an example of ARTIS, saying that they do not only care for the exotic animals in their collection, but also for *"all the other starlings, jackdaws, herons, so that there are flowers, that there are insects,"* (botanical association B). Another interviewee mentions that the house sparrow is to be found nowhere in the city of Rotterdam except for Diergaarde Blijdorp. In addition, multiple interviewees emphasise that also humans appreciate the green environment of zoos. In fact, zoos can possibly provide an alternative location for recreation in green space, as such spaces are becoming less accessible to urban inhabitants. As several interviewees argue that the trend of urbanisation will assumably grow in the future, and travel restrictions due to COVID-19 will continue for a considerable period of time, they expect the green role of zoos to become more and more important to urban inhabitants:

> *"We do see that that demand [for green space] is increasing. Especially for the urban people, and because of the entire development on people who are concerned with climate change, with biodiversity, with nature. […] I do think that, in turn, [our zoo] is becoming more appreciated for [our green role], definitely by the people of Rotterdam themselves,"* (zoo employee B).

> *"I do think that green space in the city will become more important in general. […] And maybe they do not know the difference between an oak and a beech, but they do experience that [zoological park] as a lovely green space,"* (botanical association B).

The fact that visitors are assumed to lack knowledge of trees and plants in general, as demonstrated in the quote above, is exactly the issue that zoos are trying to tackle by means of education. Interviewees give multiple examples of educational activities on this green role, such as workshops, lectures, informative texts in magazines and on websites, and guided tours that include the topic of plants. Furthermore, certain campaigns are brought to life, with topics ranging from edible plants to the weeds that grow between the tiles of sidewalks. Like described in storyline B, the method of storytelling is applied to explain the educational content to visitors, but this time the stories are on plants. Often, plants are connected to the animals in a zoo's collection to formulate a coherent story. As one interviewee explained, a common example thereof is the exhibition of plants from an animal's natural habitat in or around their enclosure. Also, in the case of herbivores and omnivores, plants that are part of an animal's diet can be included in that story. Therefore, plants have a specific role in a zoo's story, so they are not just randomly selected:

> *"[ARTIS] has a very nice collection of plants, including old trees that they are very proud of, and are [striving to learn more about]. They also plant very special things. So, not just a tree with a beautiful yellow leaf, but a tree with a story, too,"* (botanical association B).

Storytelling on plants and local biodiversity is said to be increasing in zoos: *"ARTIS is already working hard on the denomination of plants. I presume that they want to take this [green role] further and also attach their stories to the plants,"* (botanical association A). According to multiple interviewees, that is because stories provide zoos with the opportunity to formulate a message and an action perspective to their visitors, which is a focal point of education. A given example of a potential action perspective is to tell visitors about the risks of taking home a pinecone from a vacation abroad, as it may contain an individual of an exotic beetle species that could do serious damage to the Dutch ecosystem. Visitors often express their interest in such stories, to their own surprise, as they are said to be focused initially on the exotic zoo animals and not the native biodiversity also present at that zoo. However, by telling a story about native species, and why they are just as interesting as exotic species, zoos try to spark the interest of the people:

> *"By [telling such stories], you do kind of tickle the senses and make them enthusiastic about the nature that is right in front of them, and that they could also encounter in their own back yard,"* (zoo employee E).

Educational activities are targeted at both adults and children, adjusting the used language and content accordingly to ensure that it is interesting and understandable to the target audience: *"I can imagine, if there is a bit of Latin [on a sign], they are gone,"* (botanical association A). Therefore, educational content on plants should be simplified, using non-scientific names for instance, to ensure that zoo visitors are encouraged to listen to the message: *"Then you can also tell the story of a zoo, and of the plants, to the civilian,"* (botanical association A). One such example of storytelling is of ARTIS, who initiated an app for a tour through the park without a personal, 'real' tour guide, adjusting to the situation around COVID-19, that is appropriate for both children and adults. One stop on this tour is at the individual Wollemi pine in the park, which is an almost extinct tree species. This pine is linked to a story on the tradition of the Christmas tree:

> *"By doing so, you establish a link between something fun and something more serious, [providing an action perspective on] what people can do themselves, or some facts on the topic, so that way you provide a proper balance between fun facts and a more serious topic,"* (zoo employee E).

Although zoos have just started formulating aims and methods for education as part of their green role, organisations such as the Dutch dendrological association (NDV) and Dutch association of botanical gardens (NVBT) have been working on this for a longer time already. ARTIS and Diergaarde Blijdorp are both members of these associations, together with Burger's Zoo (Arnhem). As explained by these interviewees, the common goal of these associations is to increase biophilia through educating visitors on different aspects of plants and their environments. Signing up for one of these associations happens at the own initiative of a zoo, and to become accepted to NVBT, they must go through an admission procedure that checks practical affairs such as the presence of correct signs and names of plants. Being a botanical garden (member of NVBT) or arboretum (member of NDV) is said to be crucial in the recognition of zoos' green role. As explained by one interviewee, ARTIS signed up for NVBT after a successful anniversary year focused on plants, as they recognised the importance of this green role. At the time, they even shared their new status as botanical garden in a press release. ARTIS is also said by the interviewee of botanical association B to be quite professional in their exploitation of the green role, including education, already.

However, that is only the beginning: *"Because then you still have to present yourself as a botanical garden, and I think that ARTIS is working on that right now,"* (botanical association A). The aforementioned associations help with this process of becoming recognised as a botanical garden or

arboretum. Their role is mainly to act as a mediator between their different members, so that their ideas, information, and experiences are shared with each other. The associations describe themselves as a large network that can be opened up and used for several different purposes, ranging from educational content development to assistance with denomination of plants in one's park. Interviewees emphasise the shared goal of educating people on natural systems, promoting more sustainable behaviour and care for nature. Collaboration between members is then explained to help them evolve their green role, and more effectively work on that common goal. However, the extent to which zoo members can or want to contribute to this network depends on their business structure, as some zoos may have more resources available to work on the exploration of this green role, for example zoos with more staff. ARTIS is then described as having relatively many opportunities for acquiring financial revenue:

> *"They can apply for subsidies and they have a serious chance of success in doing so. I think that one of the strong points of ARTIS is their old architecture, and those old trees. I would not like to see them gone, so that arouses [some] sympathy […]. That is financially appealing, so I think that they should use those professional cash flows, European money, projects, et cetera,"* (botanical association A).

This would then provide ARTIS with the opportunity to make relatively large contributions to such green networks. However, also actors with fewer financial resources can access and benefit from this network, as the required financial resources are relatively low:

> *"I would certainly not only like to think in terms of money, but also in terms of collaboration, because then you also receive some resources from others, and in exchange you sometimes have to transfer some knowledge,"* (botanical association A).

Despite the progress already made by zoos on enhancing their green role, interviewees agree that this is a trend that has only just started, and zoos are in the middle of their trajectory of formulating a management plan on the aspect of 'green'. Yet, the interviewees also believe that this role has the potential to continue growing: *"There are definitely opportunities for growth in making plants more interesting in a fun way,"* (zoo employee E). One argues it is important for ARTIS specifically to make this shift: *"It is a beautiful park, I think, it has a lot of beautiful trees, plants, museums. So, I do think that trend should continue,"* (Amsterdam city councillor).

In conclusion, zoos' green role is said to be a recent evolvement, characterised by an increasing focus on the role of plants in the representation of zoo animals in their natural habitats. Especially in city zoos this green role is said to be important, as their green spaces also serve as urban nature, which contributes to the wellbeing of local inhabitants, biodiversity, and the environment. Plants also serve an educational function as the stories and knowledge of plants are more often becoming part of the messages that zoos convey to their visitors. Such educational content is shared between zoos and other organisations through a network of botanical associations. The actors in this network hypothesise that this role will become more significant in zoos in the future.

5.4. Storyline D: a profit-focused amusement park disguised as nature conservationist and educator

Not all interviewees agree on the rightful existence of zoos in the Netherlands, however. Some address the ethical argument that animals do not need to serve a purpose to humans, as they have an intrinsic value that should be respected and honoured. Therefore, they argue that wild (non-domesticated) animals should not be kept in captivity at a zoo, as this is a limitation of their natural behaviour and thereby of their welfare: *"Because [zoo] animals do live in an environment that really*

does not suit them. So, they exhibit unnatural behaviour," (animal rights advocate A). A commonly given example thereof is stereotypical behaviour: enduring, repeated behaviours that do not serve a particular function to the animal. Supporters of the ethical argument on the intrinsic value of animals actively work on producing knowledge that proves such issues:

> *"Every now and then, we visit [ARTIS] and film the animals, and ask an expert to look at it. Last year, we received elaborate advice on sea lions, and later we also looked into porcupines. […] You simply see, when you take away the animal's space, that they go mad, that they start displaying that crazy behaviour,"* (Amsterdam city councillor).

The contribution of an intrinsic value to wildlife automatically implies that it would be wrong to assign them a monetary value: *"A zoo should never be involved in the commercial production or sale of wild animals,"* (animal rights advocate B). Yet, even though ethical arguments are at the basis of this storyline, interviewees do emphasise the importance of scientific research and knowledge to support their claims. They point to scientific research as a major source of input that helps to explain their arguments to the people. Keeping up to date with the newest insights on this topic is then deemed crucial. The aim is to provide information to their audience that is legitimate and verifiable: *"I do hold truth and facts to be important,"* (animal rights advocate A). The interviewees then mention that more knowledge of the welfare of animals in captivity is required to better understand the negative effects on those animals, but this should be accounted for by an increasing focus on this topic in the near future.

This critique does not mean that they deny the positive changes that zoos have made over time. One interviewee explains that zoos originated as expositions of animals in small cages, and even humans of different cultures were put on show, so zoos have made obvious improvements since then. They add that the management of zoos has changed over time to involve people with improved insights on what zoos should look like, and who are willing to apply such insights in practice, at least to the extent that their budget allows. Another interviewee specifically recognises the progress made by ARTIS in the past decade: *"If you look at the decrease in the number of animal species in their collection, I do think they have improved,"* (Amsterdam city councillor). They also recognise that ARTIS can be surprisingly progressive at times, being ahead of public critique. The different interviewees who support the argument of intrinsic value differ in their opinions on the extent to which zoos do (or should) contribute to education and nature conservation, though; yet these disagreements are minimalised to a shared belief that zoos in their current shape are not justifiable. This is based on the aim of optimising animal welfare:

> *"Any wild animal can be 'tamed', which might alter their behaviour due to being in close proximity with humans, but their instincts remain, so no wild animal will every really flourish in captivity,"* (animal rights advocate B).

Furthermore, interviewees share a general baseline on what a zoo *should not* look like, as they argue that marine mammal park Dolfinarium falls short on the educational and conservationist values that other Dutch zoos do have. Even different zoo employees point in their direction, saying that whatever societal resistance they face is at least not as bad as the protests at Dolfinarium. One interviewed zoo employee actually said that they do not feel any protest from societal actors at all. The main critique then, recognised by both interviewed animal rights advocates and nature conservation organisations, is on the shows that Dolfinarium hosts, which are deemed unacceptable. Opponents argue that Dolfinarium is a zoo in legal terms because it holds a zoo's license, but it is actually just a stationary circus that uses their dolphins for shows that resemble a circus act: *"Trainers pushed forwards on the snout and all kinds of spectacular jumps and such, so dolphins are*

exploited solely for entertainment purposes," (animal rights advocate B). It is not just the animal rights organisations that disagree on the circus-like traits of Dolfinarium: *"Society has the most issues mostly with the entertaining, the shows and such, with animals,"* (animal rights advocate A).

Regarding the role of nature conservation, these interviewees argue that the marine mammal species being kept by Dolfinarium have no substantial value to conservation as they are not threatened species. Also, Dolfinarium is said to be more focused on profitable activities with their animals than other Dutch zoos. Given examples include the possibility for taking photographs with the dolphins, swimming with them, and being able to touch them. This does not serve any other purpose than just entertainment and is considered irresponsible: *"Aside from the fact that this has no educational value, it is also a danger to [visitors] because of several different health risks,"* (animal rights advocate B). Additionally, Dolfinarium is argued to disregard the welfare of their animals, for example by adding plenty of chloride to the basins to maintain clear water, so that the animals are visible to the audience. Prioritising profit and entertainment, and putting animal welfare in second place, is at the heart of the debate that these animal rights advocates are promoting. As one interviewee describes a recent general consultation at governmental level, they argue that Dutch politics have picked up on this debate:

> *"A political committee that visited Dolfinarium said that [they] have to change this and that, make improvements, provide more space for the animals, and so on. Of course, such demands will change every year because of new insights, and because of increased pressure from society. […] But there are limitations to such demands, because Dolfinarium does not have the money to make all those changes, just like a lot of other zoos,"* (animal rights advocate A).

The fact that Dolfinarium is a common target does not mean that other zoos stay clear from this type of criticism. A point of critique already touched upon is on the legislative demands of a zoo. The Dutch government can give out zoo permits based on the Dutch interpretation of the European Union's Zoo's Directive: a set of rules on what a zoo should entail. Several interviewees argue that zoos claim they work on education and nature conservation, while actually contributing very little to these ends, only to maintain their permit. In fact, zoos are said to be focused *"on profit, on attracting visitors, on entertainment,"* (animal rights advocate A). Therefore, roles other than entertainment are used as cover up for underlying financial interests. The actions that zoos *do* take on those roles are then said to be unjust and ethically wrong. For instance, breeding programmes in zoos and the subsequent exchange of animals between zoos are said to be solely for maintaining collections and for attracting visitors, and thus profit: *"We believe that all those breeding programmes and desperate attempts are just for commerce, because those young animals provide extra visitors,"* (Amsterdam city councillor).

All supporters of this storyline then state that nature conservation is crucial at an in-situ scale, but ex-situ efforts are pointless, arguing that conservation efforts should be focused on the species remaining in the wild that actually have a reasonable chance of survival in their natural habitat, and not spending large amounts of resources on species that have crossed the brink of extinction. One interviewee deems reintroduction to be possible, though, but recognises that this is a highly complex strategy for many animal species, and therefore that it is not always a feasible option. Also, the collection plan of zoos is said to be focused on the species that attract visitors, referred to as 'cuddly animals' by one interviewee, instead of species that have higher priority to nature conservation:

> *"Because if a zoo would completely focus on the most threatened animal species, which are actually a lot of insects, amphibians, reptiles, and so on, [they would be] somewhat less presentable to the people,"* (animal rights advocate A).

Furthermore, the research conducted by zoos that supposedly could contribute to the protection of threatened animal species is deemed useless and untrustworthy by multiple interviewees. They argue that the only research that zoos contribute to are in their own best interest. The zoos' aim then is to enhance and make improvements internally, such as their business plans and profits, lacking focus on the knowledge that is required outside their zoo to help in-situ conservation:

> *"What frequently happens at zoos, including Dolfinarium, is that they conduct research on non-threatened species that are not at immediate risk of extinction. If you look at what they contribute to knowledge of the species, you can see that it is very minimal,"* (animal rights advocate B).

In terms of educational value, one interviewee recognises the value of the museums in zoos, such as Micropia in ARTIS. However, keeping animals in enclosures is said to be 'wrongful education'. The interviewed Amsterdam city councillor explains that zoos often represent wild animals with a certain "Bambi-factor", which establishes a wrongful connection between humans and animals, as wild animals are not as fluffy and harmless as Bambi-factor makes it seem:

> *"We actually have to keep some more distance. [The heavy intervention of humans] is at the core of the problem of the destruction of their natural habitat. [The problem is] that we are constantly taking bits away from it,"* (Amsterdam city councillor).

In addition, it is argued that education on wildlife and nature does not require the exhibition of animals. Modern technologies are addressed as a better alternative, including nature documentaries and Virtual Reality experiences. Another addressed alternative is the stimulation of recreation in Dutch nature to experience and learn more about native, local biodiversity. Altogether, these interviewees believe that there are plenty of new and better possibilities for people to experience animals in the wild: *"The surplus value of that I think is bigger than any zoo could ever have,"* (animal rights advocate A).

Instead of the profit-oriented entertainment-role that zoos currently fulfil, these interviewees push for the transition towards a sanctuary-role, where zoos would provide shelter for animals that are rescued from circuses, illegal pet trade, traffic accidents, et cetera. Ideally, such rescue centres would be a non-profit organisation, without the "amusement park-content" that zoos have now. Different first steps are suggested, such as a halt on the opening of any new zoos, and the prohibition of breeding in zoos, so that their collections will diminish over time. Even though the ultimate objective could differ between countries and cultures, in terms of legality, the term 'zoo' would also be lost since it would not receive a zoo permit, according to the Amsterdam city councillor. This would mean a drastic drop in the number of zoos in the Netherlands, and a major change in those remaining: *"It can no longer be that a zoo such as ARTIS can exist in a city centre with such limited space,"* (animal rights advocate A).

To achieve this goal, these interviewees agree on the major role of society in making such a transition. Animal rights organisations work actively on providing (potential) zoo visitors with information on stereotypical behaviours and other arguments on why animals should not be held in captivity. A strong focus on scientific behaviour and facts is used to improve the knowledge of their audience, moving them to think more critically on the subject:

> *"You want people to understand that [living in captivity] will always be a confinement to a wild animal, because the only place where the physiological and psychological needs of wild animals can be properly met is in the wild,"* (animal rights advocate B).

The aim is then to reduce societal acceptance of zoos and turn it into social resistance. One interviewee actually argues that not even every individual in society has to be convinced, but that research has shown that only 10-15% of a society needs to be on board to create a change. That same interviewee gives the example of ARTIS, who has put a halt to public campaigns on the naming of new-born animals at the zoo, arguing that this measure is actually a reaction to public critique on the anthropomorphism often present in zoos. That is because anthropomorphism is said by one interviewee to serve as a method for attracting and luring in visitors. In turn, zoos do recognise that their place in society is not secured, so they must continuously establish that place: *"Zoos' reason to exist really must be proved with research, so we all should work hard on that,"* (zoo employee A). An increase in social resistance then should set in motion a chain of events that eventually leads to political engagement in the topic:

> *"We need to get it into the media, so that eventually that public opinion receives enough support, on which subsequently the politicians feel empowered to also take a stand, because sometimes they are still a bit hesitant to make some more radical statements, if society is not completely ready for it,"* (animal rights advocate A).

Multiple interviewees then claim that politics should establish stricter legislative acts, constraining the establishment, growth and eventually existence of modern-day zoos. They agree that the ban on wild animals in circuses that the Dutch government issued a couple of years ago was a positive development, and that similar measures should be taken for zoos. This is deemed a slow process, however, especially when it comes to political action. In fact, all interviewees who touch upon the subject of politics actually agree that the Dutch government, or any other political actor, does not exert any impactful power on Dutch zoos to change their ways. One interviewee explains that politicians at the municipality of Amsterdam are fairly conservative, offering little to no resistance to ARTIS, and therefore also the requirements for receiving municipal subsidies are overly lenient. However, most interviewees agree that political actors have the *potential* to make a major impact. For instance, one interviewed zoo employee says their zoo actively invites politicians to "explain their role" as a way of lobbying.

Still, the debate on animal rights does not end with political action on the existence of zoos. All interviewees also agree on the importance of a transition in society towards a more sustainable lifestyle, for example on people's diet and transportation, in order to tackle the issue of biodiversity loss at the root of the problem:

> *"I do think that it is so important for the whole climate change, habitat loss, habitat degradation, and thereby biodiversity loss, that you see it as that complete change. It is all connected,"* (animal rights advocate B).

This would also take away the proclaimed need for nature conservation efforts by zoos. As conservation is said by supporters of this storyline to be a major disguise for their true aim, namely making a profit, restoring animal populations in the wild would kill this disguise and thereby the main reason of zoos to exist. Still, they do recognise that society on an international level has a long road ahead before reaching a fully sustainable lifestyle that does no excessive harm to nature. Therefore, animal rights advocates plead for simple, small steps at first, such as the aforementioned halt to breeding in zoos, and take it from there.

6. Discussion

This chapter will put the findings of the literature analysis and of the interviews into a theoretical perspective, going to back to the concepts of commodification, power/knowledge, and external governance, as discussed in the theoretical framework. This is done to provide a conclusive answer on the four sub-questions and the main research question as given in the introduction, and to simultaneously explain the relevance of these findings on existing academic debates. After interpretation of the results, this chapter will then elaborate on the limitations of this research in terms of the theoretical framework and the methodology. Finally, based on these limitations, recommendations for future research on the discourses of zoos in relation to nature commodification and nature conservation will be made.

6.1. Answering the research questions

The four identified storylines show both similarities and differences between each other, as well as within one storyline. Yet, within one storyline, differences are concealed by the actors of interest with the aim of creating a sense of common understanding, to build credibility and acceptability of the storyline (Hajer, 1995). This also enhances actors' trust in the storyline (Hajer, 1995). Additionally, one could propose that storylines A, B, and C are part of the 'pro-zoo' discourse, and that storyline D is part of the 'anti-zoo' discourse. Division of 'pro-zoo' and 'anti-zoo' discourses was possible because of the simplification of issues and degradation of discrepancies in a discourse, and the deduction of storylines then helped to explore the different motivations and arguments for actors to take on a certain discourse.

In the case of the pro-zoo discourse, storylines could prove themselves extremely valuable for creating a sense of common understanding. That is because the interviews have demonstrated the delicate balance between competition and cooperation that Dutch zoos have among each other. Yet, they all benefit from storylines that indicate some 'reason to exist' for zoos. Researching this reason, and communicating it to the public, has been said to be crucial for zoos' existence in the future, so this indicates a motive for cooperation on the construction of storylines on the pro-zoo discourse. How such external governance practices have transformed over time, and how they impact historical and contemporary discourses on zoos, will be discussed in this sub-chapter, together with their practices of nature commodification and nature conservation.

6.1.1. Sub-question 1: How have discourses of Dutch zoos transformed throughout history, considering the concepts of nature commodification and nature conservation?

As human-animal relationships have evolved over centuries, so have the roles of zoos in society, which has led to the recognition of three different discourses in this thesis: the zoo as imperial collection, as scientific institution, and as multi-purpose entrepreneurial institution. The transitions between discourses were demonstrated not to be a sudden change, but gradual process spread out over centuries instead. The roles of entertainment, education, and nature conservation and related scientific research have gradually emerged and evolved over time, too, as new practices were established by zoos. This is in line with Bevir (1999), who argued that the shift of ideas and concepts that constitute an institution leads to a shift in discourse.

As zoos' discourses transformed over time, so have related practices of nature commodification, and the impact thereof on nature conservation (Büscher et al., 2012). Nature commodification is not a novel concept: the time period of the paradeisos indicated the costly character of animal collections, and the subsequent 16th century menageries already assessed the exotic animals in those collections as valuable commodities. This conclusion is in line with the argument made by Heynen and Robbins (2005) that the concept of nature commodification has existed for centuries already, but its practices

have changed along with shifting trends on global capitalism. Also, it has been shown that capitalist influences on zoos' economic development have differed over a number of historical time periods and geographical areas as a result of different social constructions of meanings and ideals regarding economic development (Büscher et al., 2012). Historical changes in nature commodification practices were largely influenced by the growing presence of the general public in zoos' management and target audience since the 19th century, as civilians became the primary source of financial revenue by means of entrance fees for zoos. This also caused a major shift in interests, towards the requirement to fulfil the expectations of the visitors and provide them with a certain level of entertainment. Hence, zoos had to focus their practices of commodification on the interests of the general public, rather than the interests of a handful of wealthy actors, like in the preceding time periods. This has resulted in a need for zoos to make trade-offs between their entertainment-role and the other roles that they took on, which also impacted their collections. For example, as ARTIS's research-role diminished over the 20th century, their conservation-role emerged, and their collection became increasing focused on animal species of conservation interest.

The necessity for these trade-offs found in this thesis bears strong similarities to the 20th century phenomenon of 'Disneyisation' of zoos as described in academic literature. One aspect of Disneyisation that is interesting in light of the results of this thesis is theming: the increasing profiling of zoos' efforts directed towards education and conservation to justify the practice of keeping animals in captivity (Beardsworth and Bryman, 2001). Theming took off at the second half of the 20th century, when the theme of entertainment was becoming a weaker legitimising argument for zoos' existence (Beardsworth and Bryman, 2001). This is in line with the findings of chapter 4, which described the growing importance of zoos' roles on education and conservation, serving as reasons to exist for zoos. Theming also applied to zoos' commercial goals, as the challenge of balancing roles coincided with a historical tradition of commodifying the concept of 'the wild' to attract visitors, and therefore to generate financial revenue (Beardsworth and Bryman, 2001). For instance, the 'bar-less' enclosures of Hagenbeck spread quickly to most European zoos in the 20th century, providing visitors with the illusion of observing animals in their natural habitat.

Furthermore, zoos have used practices of anthropomorphism and sentimentality to make the visual content of zoos easily understandable and fun to the general public (Beardsworth and Bryman, 2001). This can directly be linked to the transformation of nature commodification practices in history to become focused on the entertainment of visitors to generate financial revenue, because anthropomorphism is used as a strategy for attracting visitors. Hence, also these findings are in line with the findings of Beardsworth and Bryman (2001). Interviewees have also emphasised the importance of a feeling of emotional involvement with the zoo animals, like through naming and personifying the individual animals, thereby confirming the role of anthropomorphism in zoos (Verma, van der Wal, and Fischer, 2015), from both a historical and a contemporary perspective. Zoos have justified this focus on entertainment by directly linking their visitor number, and the visitors' emotions and cognitions regarding the zoo animals (Verma et al., 2015), to their contributions to nature conservation. This relation between the entertainment-role and the conservation-role can also be described as 'neoliberal conservation', which entails all argued contributions and benefits of the expansion of capitalism to nature conservation (Büscher et al., 2012). To contribute to conservation, zoos first had to focus on acquiring financial resources through attracting visitors, which is in line with the argument of academics that historically, zoos have focused primarily on internal affairs, and secondly on nature conservation (Pereboom et al., 2011).

To conclude this section, it has been found that nature commodification and nature conservation practices by zoos are historically co-dependent: financial resources provided by commodification

practices of entertainment-value to visitors are used to contribute to nature conservation efforts, and the conservation-role is crucial for zoos to justify the entertainment-role that they take on, as the arguments for an entertainment-value of zoos have lost their legitimacy, to a certain extent, throughout the 20th century. This has coincided with a change in human-animal interaction dynamics in that time period. These results are supported by earlier findings of academics on the historical transitions and trends of zoos' discourses, and therefore they contribute to the academic debate on historical trends and legitimisations for practices of nature commodification in relation to the practice of keeping animals in captivity.

6.1.2. Sub-question 2: To what extent do power/knowledge dynamics in the external governance of Dutch zoos contribute to shifting discourses?

Researching zoos' roles, and their justifying arguments to keep animals in captivity, has led to the description of four different contemporary storylines in this thesis, which were then contributed to either a pro-zoo discourse or an anti-zoo discourse. The distinction between pro-zoo and anti-zoo discourses is a very black and white division, while actually all four storylines have indicated at least small differences between interviewees' opinions and beliefs. However, these differences have been faded out, making storylines more acceptable and trustworthy to a range of different actors, for example by establishing a common 'anti-ideal' of zoos (Dolfinarium) in storyline D. This is in line with the theory presented at the start of this thesis, stating that storylines connect different parts of a discourse by simplifying its content, and thereby reduce potential misconceptions by actors to create a sense of common understanding (Hajer, 2006). Another resemblance is the example of the polar bear in different storylines as a sort of exemplary species. For instance, in storyline C, the species is used to explain why the green role is upcoming, and in storyline B, it is part of an internal debate in zoos on their reason to exist. This phenomenon also points towards the simplification of issues and events to fit in one understandable narrative. This makes it possible for the four storylines to be fitted in the two contemporary discourses of pro-zoo and anti-zoo.

This simplification is not surprising in the light of capitalist predominance in the Dutch socio-economic context in which zoos operate, as the pro-zoo discourse benefits from *"eliminating information which suggests that economic growth could be harmful to environmental factors,"* (Büscher et al., 2012, p.14). Apparent consensus on the suitability of economic solutions to environmental problems eliminates the need for all stakeholders to discuss the complexity and difficulty of those problems (Igoe and Brockington, 2007), and therefore it becomes easier for zoos to justify their entertainment-role by simply stating its contributions to nature conservation. In turn, visitors believe that by paying an entrance fee to a zoo, which is a certain form of consumption, they help solve complex environmental problems while having a fun day out, and without having to critically reflect on those problems (Büscher et al., 2012). This phenomenon can also be explained in relation to 'greenwashing' (Büscher et al., 2012), as zoos systematically choose to present themselves as nature conservationist and as educator, while disguising their profit-driven motives. Even though interviewees have emphasised their role in stimulating visitors to critically reflect on unsustainable behaviours that they engage in, zoos have shown to be simplifying such issues and offer consumption-based solutions to them.

The production of knowledge is a crucial means to that end. One given example thereof is an interviewed zoo employee who stressed that knowledge production is crucial for establishing a common reason to exist for zoos. This is in line with the argument provided by Evans (2012) that knowledge is a basic part of nature commodification, for example on the valuation of a commodity. Additionally, interviewees indicated a growing trend of information sharing between zoos and related actors. Zoos on mostly national and European scales are said to be collaborating to produce

and share knowledge that is of interest to zoos' different roles. These types of collaboration indicate the existence, and the importance of, a pro-zoo discourse coalition in this thesis. Zoo membership associations, including EAZA and NDV, are found to be crucial in organising this discourse coalition. The actor networks established by these associations are found to be relatively strong and binding, as interviewees agreed that relatively strict rules are established to regulate the rights and obligations of the actors involved (Arnouts et al., 2012). Also, the results have shown that these associations actively work on reducing misconceptions between zoos on several different topics to enhance collaborative efforts. These results are supported by theory on discourse coalitions, which states that the formation of a discourse coalition requires a common understanding between actors, and that storylines contribute to that end (Hajer, 1995; Hajer et al., 1993). In all storylines, knowledge is described by the interviewees as a main building block for the credibility of storylines, which is in line with the theoretical argument presented by Hajer (1995). The involvement of different types of actors from both the public and the private sector are also in accordance with theory on NPM and capitalist influences on nature conservation (Igoe and Brockington, 2007). Evidence of an anti-zoo discourse coalition has not been found, however.

Furthermore, knowledge is a prominent part of the storylines in zoos' role of education, as this role places emphasis on the transfer of knowledge to its audience. The found importance of enhancing the public's knowledge on issues of zoos' interest corresponds with the theory presented in this thesis that knowledge is a means of shaping reality through the constant re-establishment of 'the truth' (Foucault, 1980). Interviewees have especially emphasised the importance of *scientific* research, which is argued to discover *facts* and expose the *truth*. This focus was expected, based on the theory presented in this thesis that scientific knowledge production, which is founded on concepts of objectivity and validity, is the contemporary dominant form of constructing reality (Turnhout et al., 2014). In turn, the needs and interests of the most powerful actors then decide the topics and problems on which scientific research focuses; establishing a science-policy relation (Turnhout et al., 2014). This relation can also be recognised in the results of this thesis. As zoos focus on certain roles, such as the provision of a green space for recreation, they identify knowledge gaps relevant to that role to perform research on those topics – or outsource that task to other actors in their pro-zoo discourse coalition, such as the aforementioned associations. On a more fundamental level, this thesis has found that zoos constantly need to produce knowledge to justify their existence, which results in scientific research being steered into a certain direction. Again, this is in line with the argument made by Turnhout et al. (2014) that scientific research is limited in their opportunities to discover new issues.

Hence, knowledge is both a tool for zoos to legitimise their practices to the public and actors of the pro-zoo discourse coalition – including other zoos and nature conservation organisations – and a goal in itself, as knowledge is a crucial part of continuously re-establishing the pro-zoo discourse by constructing their truth. These findings correspond with the theory that knowledge is a major concept in the constant reproduction of a hegemonic discourse, struggling to keep certain meanings, or truths, in the hegemonic discourse, and keep other meanings out (Hajer and Versteeg, 2005; Jørgensen and Phillips, 2002). This suggests that both the pro-zoo and the anti-zoo discourse will continuously reproduce themselves as they construct and re-enforce their own truth, which is in line with the argument of Foucault (2005) that discourses are in a constant state of conflict with included and excluded meanings. There, the concept of power becomes essential.

According to the concept of power/knowledge, the most powerful actors can most effectively impose their version of the truth, which re-establishes their situation in the power dynamics, meaning that knowledge and power work in synergy (Foucault, 1980). These actors can mobilise their

versions of the truth by defining the internal and external controls of a hegemonic discourse (Bevir, 1999; Hajer and Versteeg, 2005). The results of this thesis have shown that power/knowledge also affects zoos' discourses. Both pro-zoo and anti-zoo discourse actors have stated that they require sufficient knowledge to inform the public about (their version of) the truth, indicating that knowledge is a tool to acquire a top position in the relational power dynamics of zoos' discourses. A typical example is given in storyline D, where one interviewee argues that they need to convince only 10-15% of society that their (scientifically based) arguments are the correct facts, and therefore pro-zoo arguments are false, for their truth to be commonly accepted. On the other hand, although to a lesser extent, it has been found that actors who are successful at conveying their truth, and are thus more powerful, also have more influence over the topics on which knowledge is produced, and over the communication of such knowledge to society to benefit their version of the truth. Hence, power relations depend on knowledge, and knowledge production depends on power.

Related to this power/knowledge struggle, to successfully re-establish the hegemonic discourse over and over again, discourse coalitions are said to be more effective than single actors, because they are able to collectively situate themselves in the power dynamics (Hajer et al., 1993). The existence of a pro-zoo discourse coalition and lack of an anti-zoo discourse coalition is possibly (part of) an explanation as of why the pro-zoo discourse appears to be the contemporary hegemonic discourse on Dutch zoos, and not the anti-zoo discourse. Interviewees described actors such as zoos, civil society, and independent conservation organisations to be relatively powerful, whereas the Dutch government was said to exercise relatively little power, despite having plenty of possibilities to do so. This is in line with the theory presented on NPM that governments do not necessarily retreat from the act of governing, but rather that they more often act in the background as the private business sector is stepping forward (Turnhout et al., 2014). This theory on NPM matches the findings of this thesis, as interviewees stated that Dutch zoos are more often recognising the importance of the private sector in both legitimising and funding their practices. Hence, they are looking for ways to present themselves as an attractive commodity at the market. An example then is the function of ARTIS as a sustainable, educative, but still fun and entertaining meeting location for businesses.

Regarding the theorised role of the state in NPM, it was expected that interviewees would agree that the Dutch government continuously establishes institutions to define and monitor opportunities for market working (Evans, 2012; Turnhout et al., 2014). This would also affect the entertainment-role of zoos, as they would have to act within the legal boundaries set by the state, which can either create or close down markets (Evans, 2012). One found example thereof is the ban on the use of non-domesticated animals in Dutch circuses, indicating that the Dutch government does exert some control over the allowed use of animals for economic purposes, and thus the allowed commodification of animals. Hence, the role of the state has shifted towards regulating nature commodification practices of non-governmental actors (Igoe and Brockington, 2007). In line with Foucault, state power is thus not directly enforced upon societal actors through a top-down system, but it is embodied in people, knowledge, and institutions (Büscher et al., 2012). Regarding the ban on wild animals in circuses, interviewees declared this decision a governmental reaction to societal resistance, which is an interesting finding from a Foucauldian perspective, as this may indicate a period of struggle in policy and discourse. This hypothesis is supported by theory that explains that new policies can embody a new hegemonic discourse in a time of hegemonic struggle (Hajer and Versteeg, 2005).

To conclude this section, this thesis has found that the concept of power/knowledge plays a significant role in Dutch zoos' external governance practices in the re-construction or challenging of the hegemonic discourse. The pro-zoo discourse coalition and anti-zoo discourse actors both try to

establish their own truths in a wider societal context by producing and sharing knowledge that affirms their beliefs. These findings contribute to the academic debate on the understanding of power in creating and presenting reality as an objective and unilateral truth that can be discovered and revealed to every single individual, no matter their background or beliefs, as well as the functions of education, research, and knowledge in this phenomenon.

6.1.3. Sub-question 3: To what extent are Dutch zoos representative of different commodification practices applied by other zoos around the globe?

This thesis has found that zoos' contemporary roles differ on a geographical scale, for example as the discussed Dutch culture of family excursions does generally not apply to many other countries, especially outside of Europe. This can be explained by the findings of the historical literature analysis, which has shown that the development of zoos differs per geographical area as a result of regional socio-political contexts, cultural beliefs, economic developments, and other site-specific developments. Such factors have created a different basis for contemporary zoos in different spaces, and they remain to affect changes to this day. For instance, cultural differences affect people's beliefs on whether nature is there to be exploited and managed by humans, or humans should let nature take its own course (Buijs, Elands, and Langers, 2009). For example, on the topic of religion, Christianity is founded on the belief that animals solely exist to serve humans (Regan, 1990), which indicates that regions with a large fraction of Christian inhabitants may show little resistance towards the use of animals for entertainment purposes. Hence, these theories support the results of this thesis that zoos globally may not have the same commodification practices on animals, as they have different beliefs on the functions that animals serve.

Besides that, member countries of the European Union, including The Netherlands, are considered forerunners in the global debate on animal welfare and animal rights (Caporale et al., 2005; Grethe, 2007), so European zoos may possibly expect more societal resistance than for instance Asian zoos. That is because this debate has been shown to be focused at least partially on the exploitation and commodification of animals, in this case for entertainment purposes. This thesis has shown that zoos increasingly have to consider the critiques of civilians and politicians on zoo animal husbandry practices, and that zoos also have to collaborate with those actors to alter the internal and external controls of the pro-zoo discourse so that hegemonic struggles are minimised. Such negotiations with societal and political actors regarding animal welfare may be (deemed) less required in non-European zoos. Yet, as plans for an international treaty on animal welfare may become reality somewhere in the near future (Favre, 2016), this gap between different countries could be reduced.

Another trend that could contribute to reducing that gap is mentioned before already: the increasing collaboration between zoos, and nature conservation organisations. Important here is that despite zoos' increasingly international focus, for instance on in-situ conservation efforts, no evidence has been found of a significantly more complicated external governance regime of Dutch zoos, which was expected from the information presented in the theoretical framework. Therefore, these results have not indicated a need for multi-level governance, with the exception of the involvement of societal actors mentioned above, as opposed to academic findings (Paavola et al., 2009). An explanation for this could be that the interviewees have indicated mostly networks of Dutch and European zoos, and little collaboration with international zoos. As European countries have a more similar historical background and legislative framework, to name a few factors, it is understandable that interviewees have indicated collaboration of zoos and relevant actors on a European level more so than on an international level. EAZA has been found to be of utmost importance in managing the pro-zoo discourse coalition, which suggests a similar potential for WAZA on the international level. Furthermore, in the case of nature conservation networks, zoos have shown to be mostly private

institutions that prefer close working relationships and direct communication with other actors in their governance regime, which could be another explanation for the relatively simple governance regime.

Finally, several interviewees have explained that substantial differences may exist between zoos because of their varying business structures. Mostly, a distinction was made between for-profit businesses and non-profit foundations. Because these structures differ for each zoo, the theory that profit is always considered before an investor's sentiments does not always hold true in the sector of zoos (Igoe and Brockington, 2007). Hence, different trade-offs between the entertainment-role and other roles may be made for these types of zoo management. As various business structures seem to exist within the Netherlands, it may be expected that even more variations exist globally due to different historical and socio-economic contexts of zoos, and therefore more various practices of nature commodification may exist across zoos globally.

To conclude this part, this thesis has found that the practices of commodification by Dutch zoos may be, to a certain extent, generalisable to regions with similar historical backgrounds and modern transitions, and therefore similar cultures, such as western Europe. However, such a generalisation should acknowledge limitations due to several differences, such as the ones described above. These results contribute to the wider academic debate on the causes and effects of globalisation, particularly related to the topic of nature commodification and justification thereof.

6.1.4. Sub-question 4: How will the current hegemonic discourse on Dutch zoos likely develop in the future?

This thesis has found several potential sources of hegemonic struggle in the discourse on zoos. One example thereof is the educational role of zoos. Whereas some interviewees argued for the importance of real-life experience of exotic animals by visitors to foster a sense of love and care for wildlife, others claimed that the exhibition of such animals in captivity is a wrongful form of education, and that the educational value of zoos may be outdated anyway in this technological era. These results on the conflicting views on the educational role of zoos are also recognised in the academic debate on zoos' position in society. They also question *"whether the educational aspects addressed in zoos are sufficient to silence the ethical issues behind the confinement of wild animals,"* (Sampaio et al., 2020). Hence, the pro-zoo discourse may not be able to include this role in their truth in the future.

A role that actually appears to be re-occurring is that of research and scientific advancement. As explained in the historical literature analysis, this role was lost to universities over the 20th century, and zoos lost their discourse as a scientific institution. Yet, the majority of the interviewees indicated that research is becoming a priority to zoos nowadays, and one interviewed zoo employee specifically said they are working on making a shift towards becoming a scientific institution primarily. They divide such research efforts into two purposes: in-situ nature conservation application, and application for zoo animal husbandry. These results are in line with the findings of academics who argue that zoos contribute substantially to scientific research on topics such as zoology and veterinary science (Loh et al., 2018; Ward, Sherwen, and Clark, 2018). On the other hand, anti-zoo discourse actors explain that the production of relevant knowledge to nature conservation is an empty promise, and that practically all research is only relevant for zoos themselves. One interviewed zoo employee also argued that scientific research conducted by and in zoos is not by definition useful to in-situ nature conservation, as the majority of the produced knowledge in Dutch zoos is focused on zoo animal husbandry. Hence, they do not deny the scientific focus of zoos, but only the purpose thereof. Based on these results, and academic sources such as

Loh et al. (2018), this thesis argues that the role of scientific research may be re-establishing itself in the pro-zoo discourse, and therefore may become part of zoos' reason to exist in the future again.

The question remains, however, whether the use of that research is for direct in-situ application as well, or only for the benefit of zoo animals, and therefore for the benefit of zoos' profit. In case the increased role of research does positively contribute to the internal practices of zoos, and increases profit, this could still contribute to in-situ nature conservation, as multiple interviewees argued that zoos contribute to such conservation efforts by means of financial support. This result is backed up by academic literature, which has found that European zoos (and thus including Dutch zoos) are actually among the main funders of nature conservation, which is made possible by the large number of paying visitors that zoos welcome (Gusset and Dick, 2011). Interviewees then indicated that zoos plan involve their conservation-role more often in communication to civil society and in political lobbying. Based on these findings, this thesis argues that the role of nature conservation is likely to become a more prominent argument for re-establishing the pro-zoo discourse in the future.

Following the argument that zoos increasingly contribute to in-situ nature conservation efforts, interviewees have added that more attention is given to the social dimensions of conservation, involving local societies as this is deemed more successful than fortress conservation. More specifically, such community-inclusive conservation projects are argued to be more effective and more sustainable. In academic literature, there are indeed indications that social dimensions are more often taken into consideration, for example in the strategy of community-based conservation (Galvin, Beeton, and Luizza, 2018). However, academic debates are highly divided on what is the most effective type of nature conservation, including the extent to which local communities should be involved in conservation (Jones and Murphree, 2004; Siurua, 2006). Also, from the perspective of NPM, local conservation initiatives, which are based on local environmental knowledge, are often discredited and overpowered by Western conservation programmes (Igoe and Brockington, 2007). These Western organisations are deemed more legitimate, more effective in commodifying nature to fit the capitalist market workings, and therefore more effective in conserving nature (Evans, 2012; Igoe and Brockington, 2007). These phenomena are reflected in the results of this thesis to some extent, as zoos selectively choose which organisations to support based on their criteria of Western knowledge implementation and organisational structure. Yet, interviewees have emphasised the benefits of local communities taking control over the conservation programme, at least to some extent. Therefore, some autonomy has been assigned to local conservationists, but Dutch zoos maintain the power to retract financial support when these conservationists do not meet their expectations. Overall, as it is difficult to predict to what extent the increasing involvement of local communities will contribute to conservation in terms of effectivity and sustainability in the future, it is also difficult to understand how the conservation role of zoos might evolve. Still, this thesis expects this role to become more important in the pro-zoo discourse over time, as interviewees indicated the popularisation of this role within Dutch zoos and EAZA-zoos more generally.

Furthermore, it was already indicated in the answer to the previous sub-question that the societal and political debate on animal welfare in The Netherlands is becoming more serious. Some interviewees agreed that they recognise a growing body of resistance against the practice of keeping animals in captivity to be used for the entertainment of people, whilst some actually said they did not notice such resistance in their line of work. Yet, there are more indicators that zoos are responding to this public critique. For instance, ARTIS has indicated that their renovation plans for multiple animal enclosures will focus specifically on sustainability and animal welfare (Pekaar, 2019). Moreover, the results have shown that Dolfinarium is more often disputed than other Dutch zoos because of several shortcomings related to animal welfare, which may indicate a Dutch version of

the Blackfish-effect as described at the start of this thesis. Anti-zoo discourse actors argued that resistance to Dolfinarium should ultimately lead to resistance to Dutch zoos more generally. This Dutch Blackfish-effect could then motivate a hegemonic struggle on the pro-zoo discourse, and eventually move towards an anti-zoo hegemonic discourse in The Netherlands, which is in line with the arguments made by Burford and Schutten (2017). This would naturally entail a major change in practices of nature commodification, too. For instance, it has been found that zoos do need to constantly balance animal welfare interests with visitors' interests in observing the zoo animals. This phenomenon is similar to the theorised Springwatch effect, which entails the demand of visitors to be entertained by the animals in an exciting and spectacular way, instead of more realistic observation scenarios (Verma et al., 2015). Hence, as the standards and expectations for zoo animal welfare may change in the future, such effects may shift as well, perhaps in the direction of more realistic ideas of observing animals and experiencing nature that are less based on emotions and more based on knowledge (Verma et al., 2015). This would also harm the case of nature as a commodity (Verma et al., 2015), and thereby strengthen the anti-zoo discourse.

The results have indeed shown that zoos are changing their collections as a reaction to this debate, increased knowledge on animal husbandry, and a focus on species of interest to nature conservation. Interviewees state that collections have also become smaller as a consequence. Combined with a more holistic approach towards the exhibition of zoos, this has resulted in a newfound function of zoos: what this thesis defines as zoos' green role. For instance, several environmental benefits are addressed, as well as the positive influence that zoos' green spaces have on local biodiversity. Furthermore, an important argument made by interviewees is that especially zoos in urban areas will become increasingly important as a green space for recreational purposes of local inhabitants in the future; especially as they expect that the contemporary travel restrictions due to COVID-19 may continue to limit recreational opportunities in the long term. All in all, this green role would make city zoos a green oasis in otherwise grey surroundings. Indeed, academic findings have demonstrated and recognised such benefits of urban nature, especially in the rapidly urbanising countries of Europe (Baycan-Levent, Vreeker, and Nijkamp, 2009; Fischer et al., 2018; Shanahan, Fuller, et al., 2015; Wang et al., 2019), even though hard data on exact workings and extents of such benefits appear to be lacking (Shanahan, Lin, et al., 2015). These findings back up the results of this thesis as they indicate the newness of the green role, as also argued by most interviewees. This green role could provide zoos with an alternative justification of the practice of keeping animals in captivity, as for example the educational role may lose its justifying power. This allows zoos to continue their practices of commodification as they do now.

As a final point, several interviewees have implied that the current COVID-19 troubles may have unforeseeable consequences for zoos globally. The director of ARTIS has explained in an interview in September of 2020 already that their zoo had suffered serious financial losses because of COVID-19 related restrictions to the amount of visitors (Misset, 2020). This enormous setback also meant that ARTIS has to postpone their planned improvements on animal enclosures and developments in terms of sustainability (Misset, 2020). Such financial limitations to the development of zoos have already been recognised by an interviewed animal rights advocate, who said that zoos will likely be unable to keep up with future political demands imposed on zoos. In fact, historical crises such as the First and Second World War have shown that even basic animal care can become a serious challenge when human wellbeing is jeopardised, so any more functions will be put on hold (Sampaio et al., 2020). Hence, this pandemic may threaten the existence of modern zoos in terms of their financial health. Additionally, COVID-19 could be a reason for people to re-evaluate the contemporary human-animal relations, as the pandemic is most likely a result of excessive closeness in human-wildlife interactions (Morens et al., 2020). If such arguments are picked up by a sufficient amount of public and private

actors, collaborative efforts could then result in an anti-zoo discourse coalition. This need for more effective connections between different anti-zoo actors from different sectors is also crucial for opposing practices of nature commodification more specifically (Büscher et al., 2012).

To conclude this section, this thesis has found arguments to support the prediction that the currently hegemonic pro-zoo discourse is engaging in newly found justification for their practices of nature commodification, but it has also found arguments to assume serious hegemonic struggles that may revoke the truth as constructed by the pro-zoo discourse. This thesis argues that the present situation on COVID-19 could make a major contribution to evoking a shift in hegemonic discourses, but only if sufficient dissatisfaction with the contemporary commodification practices of nature and animals from a variety of actors is aroused to take a place in the power dynamics of zoos' external governance. These results contribute to the wider academic debate on modern debates related to nature commodification, including both arguments for and against the necessity and desirability of such practices, specifically related to zoos.

6.1.5. Main research question: In what ways have hegemonic discourses on commodification of nature conservation by Dutch zoos shifted historically, and how can this shift be explained in the context of power/knowledge in the external governance practices of Dutch zoos?

The main research question can be answered with help of the previous sub-chapters, which have explained the findings related to the sub-questions. Related to the historical shift of Dutch zoos' discourses, taking into consideration practices of commodification and nature conservation, this thesis has found that a significant shift has been made over the course of the 19th and 20th century, when Dutch zoos became increasingly focused on entertaining and educating the general public. Hence, the general public became their main source of financial revenue. Zoos' involvement in nature conservation then became a legitimising argument for generating profit from animals they kept in captivity. As zoos had to fulfil the expectations of visitors, this required making trade-offs between such roles. For instance, their educational messages should not clash with people's enjoyment of visiting the zoo and observing the animals, and therefore such messages had to be at least somewhat conservative. These results could be interpreted as a trend of Disneyisation. This has led to the conclusion that nature commodification and nature conservation practices by zoos are historically co-dependent, as one needs to be sustained by the other.

Nowadays, zoos' contributions to in-situ nature conservation are argued by the pro-zoo discourse coalition to be triplicate: financial support, knowledge-sharing, and encouragement of sustainable behaviour in society. All actors involved win from the collaborative process to establish such contributions to conservation, from the visitor to the in-situ conservation organisation (Igoe and Brockington, 2007). The role of nature conservation is combined with other roles, as this thesis also found entertainment, education, and green space to be combined and related to each other to formulate one coherent story for each individual zoo. That is because just one role would not be sufficient for justifying animals being kept in captivity in zoos, especially in a time where animal welfare is being questioned more often, and where modern technologies have the potential to replace much of the use that live animals have to humans, especially related to education. The potential of technologies such as Virtual Reality have also been recognised by Dutch media, apparent from a recent Dutch newspaper article in which a Dutch professor on sustainability and human-animal relations argued that such technological tools may be better suitable for experiencing the beauty of nature and animals, giving the polar bear as an example (Oñorbe Genovesi, 2020).

In line with such potential critiques, anti-zoo discourse actors, on the other hand, argue that zoos' roles are nothing but a disguise, as zoos are fundamentally focused on profit, and therefore on the commodification of animals in captivity in terms of their entertainment-value. For example, these actors claim that zoos' collections are based on charismatic mammals (Verma et al., 2015), and presented through a 'Bambi-frame' for visitors to observe and enjoy, similar to the concept of spectacle. In turn, species of serious conservation interest, such as many amphibian and reptile species, are not included in that collection because they have little amusement-value.

Pro-zoo interviewees have argued that directly experiencing animals, and more often also plants, is supposed to encourage visitors' feelings of biophilia and thereby contribute to a societal shift towards more sustainable behaviour (Igoe and Brockington, 2007). Such intentions can be explained with a theory similar to that of Disneyisation, namely that of 'spectacle of nature', which entails more accessible, novel, emotional and personal experiences of nature and wilderness than general to capture the interest of the observant (Verma et al., 2015). Zoos are said to fulfil a societal need by providing people with the opportunity to get closer to nature, connect with it, learn more about it, and to experience wildlife with all their senses (Verma et al., 2015). A combined strategy of evoking emotion and improving knowledge on animals and the environment in general is applied to promote visitors' awareness of environmental problems, care for the environment, and a sense of hope that one can contribute to solving those problems. Hence, spectacle actually shapes human-environment relationships, as well as human expectations of the environment (Büscher et al., 2012). However, to achieve this aim, zoos recognise that their collections and educational content need to be exciting and spectacular to capture their visitors' interest (Verma et al., 2015), and therefore zoos need to meet the expectations of the visitors, without boring them or flooding them with information on environmental concerns. In the light of the aforementioned phenomenon of Disneyisation, zoos are becoming more homogeneous as spectacle strategies are mass produced and implemented (Büscher et al., 2012), for example through the collaborative formulation of zoos' messages that is facilitated by zoo membership associations. Additionally, by spectacularising and idealising nature and the environment, new opportunities for nature commodification are created, which are then formulated as win-win-win situations for zoos, society, and the environment (Büscher et al., 2012).

To put a halt to these phenomena, the anti-zoo discourse envisions a future world without zoos, at least as we know them know, only potentially with a function as non-profit rescue centre organisation. To change the status quo, anti-zoo discourse actors require sufficient knowledge on the current workings of the economic system in which zoos operate (Büscher et al., 2012). However, as the results of this thesis have mostly shown a focus on knowledge production on zoo animal welfare issues by these actors, there appears to be a missing part in their strategy. Then, if these actors were to voice their critique on the economic system linked to zoos' practices, they risk being ignored, disciplined or ridiculed by pro-capitalist spokespeople, for instance from the media or politics (Büscher et al., 2012). A shift in hegemonic discourse may occur nonetheless, but such obstructions should be seriously considered in order to overcome them.

To argue that one discourse is correct, and that the other is false, would be to fully miss the point of the Foucauldian approach of this thesis. Rather, this thesis concludes that zoos' position in society is being determined by how that society sees the truth of zoos' roles. Currently, the pro-zoo discourse appears to be hegemonic as the interviewees agree that there is too little resistance, from both civil society and politics, to indicate a serious hegemonic struggle existing at this point in time. However, throughout this thesis, several indicators of a potential struggle in the future have been found. This is no surprise, considering the use of Foucauldian theory in this thesis: *"Where there is power, there is resistance,"* (Foucault, 1984, p.95). The pro-zoo discourse coalition seems to be responding to these

indicators, too, by at least slightly adapting their external and internal controls. For example, ARTIS has phased out polar bears for what several interviewees presume to be two reasons: increased knowledge on animal husbandry, identifying the limitations to animal welfare for a plethora of species in captivity, and societal resistance to the enclosure of mostly large, charismatic mammals, including polar bears. Taking into account that zoos appear to be taking such forms of resistance seriously and take the necessary measures to refute their critique, this thesis does consider anti-zoo arguments a potential threat to the contemporary hegemonic discourse.

For the pro-zoo discourse to maintain its hegemonic status in The Netherlands, it will need to continuously adapt their internal and external controls to meet certain demands and refute the truth as presented by anti-zoo discourse actors. In other words, zoos need to constantly re-establish their reason to exist in society. To do so, zoos' marketing strategies are focused at obtaining support from public and private sector actors (Verma et al., 2015). This support is mostly in terms of financial means, including entrance fees from visitors and paid activities for businesses (Verma et al., 2015). This thesis has shown that currently, especially the roles of nature conservation, research and green space are being enforced, knowledge being a major means to that end, to present 'new' arguments (or marketing strategies) for the pro-zoo discourse. In line with Foucault, these new arguments are required to continue the economic growth, which would then lead to positive outcomes on both a social and an environmental scale (Büscher et al., 2012). That way, the aforementioned concept of neoliberal conservation continuously re-establishes itself in the hegemonic governance regimes (Büscher et al., 2012), based on arguments that are also used to re-establish the pro-zoo discourse.

For instance, as the present situation of the sixth mass extinction, or the Anthropocene extinction, is hot topic, zoos have a fair shot at presenting themselves as the 21st century Arc of Noah. Such arguments allow zoos to profile themselves as for instance a research institution or as a conservationist institution to their visitors, civil society more generally, and political actors. Zoos are backed up by a big name in the sector of nature conservation: David Attenborough. In a recent media interview, Attenborough argued that zoos can serve as a key organisation in nature conservation, and contribute to educating people on a plethora of topics related to the earth and the problems it faces, given that they are scientifically based, and do the best they can to ensure the welfare of their animals (Freedman, 2020). These statements back up the findings of this thesis as they agree on the conditions that zoos should meet and the roles that they should fulfil, which then legitimise zoos' entertainment-value and its related practices of commodification. In fact, as the pro-zoo discourse coalition argues for their increasing importance to society in times of extreme global biodiversity loss, they confirm this growing need for nature conservation as a new opportunity for capitalist expansion (Büscher et al., 2012; Verma et al., 2015). By using this environmental calamity as a way of influencing visitors' emotions and cognitions to support the pro-zoo discourse, zoos try to motivate visitors to financially contribute to nature conservation, for instance by donating to a certain project or by buying a zoo's season pass (Verma et al., 2015).

To conclude this part, these findings are in line with the theoretical framework presented in this thesis, as they demonstrate the reproductive power of discourse, explained by Foucault (2005). The role of zoos in society is created through the meaning assigned to their reason to exist, yet simultaneously zoos establish those meanings by constructing their truth regarding that reason to exist. Knowledge/power has been demonstrated to be a key concept thereof. The results have also shown that the hegemonic discourse is being challenged from several different sides, so that it constantly needs to adapt its internal and external controls. The theory presented in this thesis backs up these findings, as Hajer and Versteeg (2005), together with Jørgensen and Phillips (2002), state that a hegemonic discourse is in a constant battle with upcoming discourses as powerful actors try to

proclaim their ideas and meanings as the rightful truth. The requirement of constant re-establishment and adaptation is also in line with the argument of Foucault (1989) that power should not be considered a constraint, but rather a creative force that shapes reality, and therefore the world. The changing roles of zoos do not appear to be a reluctant submission to anti-zoo movements, but more so a step forward, and an evolution as a result of increased awareness of animal welfare ethics, environmental interests, and the increasing importance of nature conservation to preserve whatever is left of the earth's biodiversity. These results contribute to the wider academic debate on discourse analysis and the concept of power/knowledge, but also on the identification of historical, present, and future uncertainties and trends in the relation between nature commodification and nature conservation, especially on the case of zoos.

6.2. Reflection on the theoretical framework and methodology

Regarding the theoretical framework of this thesis, the Foucauldian approach has provided the much-needed insights on the synergistic relations between power, knowledge, and discourse. I believe this has been an interesting point of view when considering the topics of nature commodification and nature conservation, as it brings together influences from societal, political, and economic sectors, so that the system could be approached more holistically. The concepts of knowledge and power have not necessarily been studied in terms of their workings and positions, but more so they have been perceived as integral elements of the interviewees' arguments and of their strategies for building a discourse. Additionally, by recognising that concepts such as 'truth' and 'reality' are social constructions, rather than objective facts that are fixed across time scales and spatial scales, interviewees' responses could be interpreted as their concept of reality. Hence, responses did not require testing against one objective truth, but instead they were analysed in terms of the motivations, beliefs and values involved in a certain discourse.

The concept of nature commodification has provided this thesis with a critical outlook on zoos' involvement in nature conservation, be it ex-situ or in-situ. Considering the market workings and profit-based management strategies that lay below the surface of zoos' contributions to society in terms of conservation, education and recreation has been found to be essential for understanding interviewees' arguments for supporting or criticising a certain storyline or discourses. To link practices of commodification to external governance regime, while taking into consideration power/knowledge relations, the theory on NPM has provided a useful guideline. The concept of NPM has provided a certain grip on the effect of capitalism and its market workings in zoos' external governance regimes by indicating a number of characteristic properties of capitalist workings in governance. Nonetheless, NPM remains a broad concept, so generalisations have been made where in fact, each regime differs in terms of the actors, institutions and knowledge involved. Therefore, the described results regarding external governance regimes may be less detailed or specific than these regimes are in reality.

However, the results have neither provided any key insights on the role of trust in Dutch zoos' external governance practices, nor on practices of social antagonism between the pro-zoo discourse and the anti-zoo discourse. Furthermore, the evidence for power-steered production of knowledge, such as the decisions on research topics being in the hands of the most powerful actors, was thin at some points. A more thorough description of these concepts, including more practical information on how these concepts could be recognised in practice, could have potentially helped to extract these topics from the results. Finally, regarding the theoretical framework, another minor limitation is that I found a number of seemingly interesting books and articles written in German, which is a language that I am unable to read, and therefore I could not use these sources for this thesis.

Considering the methodological approach of this thesis, the use of discourse analysis has enabled the identification of different ideas of truth that exist regarding Dutch zoos and their roles in society. Yet, several implications of discourse analysis, and storyline analysis more specifically, require further explanation. First and foremost, because discourse analysis is not based on positivist aims for objective data collection and analysis but allows for an open for interpretation of the data, and also there is no clear and established methodological toolbox for storyline analysis, researchers who apply these methods have relatively much freedom. As processes of coding, storyline deduction and discourse deduction are subject to interpretation of the researcher, it is impracticable to define a set of standards that the researcher should follow in order to fulfil the criterium of research validity. For discourse analysis, the standard of consistency of arguments within a deducted discourse could be used to this end, but this is again subjective, as one reader may deem an argument more consistent than another (Jørgensen and Phillips, 2002; Saunders, Lewis, and Thornhill, 2007). However, using between-subject triangulation by interviewing several different people on the same topics has enhanced the validity of this thesis (Newing, 2010).

In terms of reliability, the question is whether another researcher would find the same results when replicating this study (Saunders et al., 2007). The method of semi-structured interviews has contributed to the reliability of this thesis to some extent, as the interview guide provides some grip on the topics discussed with each interviewee. However, because exact wordings are not fixed, conversations may have developed differently with each interviewee (Newing, 2010). So, when repeating this study, conversations may again develop differently and therefore give different results. In terms of data analysis, it would be likely that discrepancies between the data found in this thesis and new data gathered on this subject, as storylines and discourses are continuously changing as they are being re-established, and internal and external controls are altered in reaction to hegemonic struggles (Bevir, 1999; Hajer, 2006). Combined with the researcher's freedom of interpretation described above, this makes the approach of falsifiability difficult to apply in discourse analysis. Instead, one could consider reliability as the ability of the reader to follow the line of thought as presented in the results (Noble and Smith, 2015). The question then is whether another researcher, when provided with the data used in this thesis, would deduct the same discourses and storylines as presented here. It is then crucial to understand that the process of data analysis is susceptible to interpretation of the researcher, and because every person has a different background, based on a countless number of experiences and beliefs that define them, researcher bias will always exist to some extent. However, by being aware of this personal background, bias can and should be minimised (Saunders et al., 2007). In this thesis, researcher bias has been limited through use of an interview guide in the phase of data collection, and a coding scheme based on relevant literature to prevent tunnel vision on certain topics and disregarding others. The aim then was to optimise reliability to the extent possible.

Furthermore, there have been several practical implications and limitations regarding the methodology of this thesis. First, the goal of twenty interviewees has not been reached, as eventually thirteen actors have been included in the results of this thesis. The main reason for this limitation is that it was difficult to reach participants (reasons for rejections and related percentages have been given in chapter 5). One volunteer of ARTIS that I e-mailed to ask for recommendations actually informed me that the zoo was struggling with the situation on COVID-19, and that they were working hard to figure out the required financial reforms, which cost a lot of time and manpower, and therefore she was unable to put me in touch with any employees. Given these restraints, and the fact that the last couple of interviews did not add much new information, I have decided to end the period of data collection with a number of thirteen interviewees. Because an apparent saturation

point was reached, I do not presume that a higher number of interviewees would have led to much new insights on zoos' discourses.

Related to issue of reaching participants, the contact person that ARTIS had provided me with, was unfortunately unable to speak to me over a course of several weeks, so that despite the rescheduling of appointments, it became a dead end. This has also resulted in a weaker description of the exemplary case of ARTIS than I had originally hoped. Still, I do think the use of one case has been useful for providing more detailed descriptions at some points, especially on the historical transitions of Dutch zoos' discourses. I argue that it has provided the reader a certain grip on the topic throughout this thesis, as it is a continuously reoccurring subject, which is easier to follow than when provided with a number of different examples.

Additionally, by interviewing not only zoo employees and supporting organisations, but also animal rights advocates, botanical associations, and a city councillor, the research topic could be assessed from multiple points of view. Also, within the sub-group of interviewed zoo employees, different backgrounds and professions were included, such as educators and biologists. This was done to provide a more complete picture of the contemporary external governance processes of Dutch zoos, and the role of power/knowledge therein. Furthermore, the resulting variety in arguments and ideas provided interesting insights in how conflicting beliefs and meanings within one discourse are trivialised and covered up to maintain the sense of common understanding among associated actors. The use of semi-structured interviews also contributed to this as it allowed for more in-depth discussion of certain topics that came up during the interviews.

Finally, I argue that online interviews can potentially have limited interviewees' will to confide in me as an interviewer, especially on sensitive topics such as power dynamics. Introductions were generally shorter than when meeting someone in person, so that also small talk was often absent, which could have served as a bit of a bonding moment. Of course, there was no intention on building a long-term relation with interviewees, as you would do with ethnographic research for example, so trust relations would still be minimal. However, I do believe that 'offline' interviews could have enhanced such relations to a certain degree, and thereby contribute to interviewees' intentions to share more sensitive information regarding actor networks and governance regimes.

6.3. Recommendations

Considering the limitations of this thesis discussed above, there are three opportunities for further research that I would like to suggest. The first is related to zoos' roles researched in this thesis. As has been mentioned in the results on a few occasions, ARTIS has some impressive architecture present in its park, which is of historical and cultural importance. In fact, the park contains 26 natural monuments (Pekaar, 2019). The director of ARTIS himself indicates that the park's cultural heritage strengthens the zoo's story on the relation between culture and nature (Pekaar, 2019), pointing out the potential relevance of this role to the pro-zoo discourse. It was beyond the scope of this thesis to explore the role of architecture in relation to cultural heritage, but it could be of interest to zoos' reason to exist in a wider context. Further research on the architectural role of zoos could help to understand more about how zoos legitimise their existence. For instance, one could question how the received subsidies for architectural renovations benefit the pro-zoo discourse, and thereby how the architectural role contributes to keeping animals in captivity. On the other hand, one could question if the architectural role could at least partially phase out the entertainment-role at a time where animal welfare is increasingly debated, animal collections are thinning, and an epidemic zoonosis instigates reconsideration of contemporary human-animal interactions. Hence, further research on the presence or absence of this role in zoos could provide new, interesting insights.

The second suggestion that I would like to make is related to zoos' role of education. Zoos have indicated that they aim to contribute to a behavioural change of their visitors towards a more sustainable lifestyle. However, opponents suggested that this role is nothing but an empty shell, serving as a cover-up for zoos' true focus on profit. It would be an interesting topic for research to investigate, for instance, people's intentions for sustainable behaviours prior to, and after a visit to a zoo, perhaps linked to their knowledge level on environmental problems. This would help to clarify to what extent zoos' knowledge-based approach on education, and the related action-perspective that they provide to visitors, actually makes a change in practice, as such academic literature did not appear to be available as of yet. In fact, this knowledge gap is already recognised in different publications (Ogden and Heimlich, 2009).

Finally, an interesting concept for zoos in relation to commodification could be that of corporate social responsibility (CSR). As CSR is defined by corporations' commitment to subject of societal interest such as environmental sustainability, without the purpose of making profit (Bénabou and Tirole, 2010), this could be an interesting approach on zoos, as this thesis has described them to be multi-purpose entrepreneurial institutions. For instance, ARTIS's initiative on water storage is described to be beneficial to the environment, and does not directly contribute to nature commodification practices, at least not with regards to the zoo's role of entertainment. Perhaps, the concept of CSR could provide an interesting take on such an initiative, contributing to the understanding of how zoos continuously re-establish justifications of the pro-zoo discourse through the showcasing of roles other than entertainment. This concept is all the more relevant in the context of NPM, including the increasing power of the private sector in governance, as zoos may have to justify themselves to business actors more than to political or civil actors in the future.

7. Conclusion

The aim of this thesis was to provide insight in how Dutch zoos contribute to nature conservation, and how these contributions are balanced against the commercial interests of zoos, by answering the main research question: In what ways have hegemonic discourses on commodification of nature conservation by Dutch zoos shifted historically, and how can this shift be explained in the context of power/knowledge in the external governance practices of Dutch zoos? Firstly, the literature study on zoos' discourses from a historical perspective has shown that the human collection of animals is not a novel concept, but a practice that dates back to prehistoric times. From there, three different discourses have developed: the zoo as imperial collection, the zoo as scientific institution, and the zoo as multi-purpose entrepreneurial institution. Throughout these transitions, power dynamics have shifted from private collectors to civil zoological societies who increasingly focused on entertaining and educating the general public. This led to a co-dependence of nature commodification and nature conservation in zoos, as the financial resources required for conservation were supplied by zoo visitors, and the role of nature conservation was required to justify the entertainment-value of the animals being kept in captivity.

This dynamic still holds true today. Pro-zoo actors argue that zoos' roles of entertainment, education, nature conservation, and green space are all balanced out against each other. Trade-offs are made between educational messages on a sustainable lifestyle and meeting the expectations of paying visitors looking for amusement. The commodification of exotic animals in captivity, serving to provide that amusement-factor, is justified by the argument that the generated financial resources are in part invested in in-situ nature conservation programmes and organisations. Also, zoos argue for the use of ex-situ generated knowledge to be applied to in-situ conservation efforts. On the other hand, however, anti-zoo actors argue that zoos' so-called roles are merely a cover-up for their true goal of making a profit, while harming the welfare of the wild animals they keep in captivity. They argue that zoos' breeding programmes and research projects are only beneficial to their own institutions, as they focus on enhancing the attractiveness of zoos to draw in visitors. Also, zoos' collections are said to be based on charismatic animals that visitors enjoy observing, with less or even no attention to endangered species that do not evoke the same type of emotional response. Based on these findings, two discourses have been deducted: the pro-zoo and the anti-zoo discourse.

Power/knowledge dynamics are shown provoke continuous adaptation of external controls in the pro-zoo discourse, so that its meanings keep changing over time. This is a reaction to the growing questioning of the facts presented by the pro-zoo discourse by Dutch society, including civilians, the business sector and Dutch politics. These counterclaims are increasingly powerful and more often penetrate the hegemonic knowledge base. Yet, in turn, pro-zoo actors are working hard to adapt their internal and external controls so that their established reason to exist meets the expectations of such parties. The practical to do so is by increasingly sharing information about the value of captive animals to in-situ nature conservation. In summary, actors of both discourses produce and share knowledge to try to establish their own truths as hegemonic. To conclude then, Dutch zoos consider themselves to be nature conservationists through direct efforts on both an ex-situ and in-situ level, but also through encouraging biophilia, supporting their local environment and biodiversity, and educating people on environmental problems to encourage sustainable behaviour. Associated actors, both pro-zoo or anti-zoo, recognise the potential for zoos' conservationist role in the future, although differences exist in their viewpoint on the roles that zoos should take on. Yet, these aims have to be balanced against the commercial objectives although differences exist between for-profit and non-profit organisations. Therefore, this thesis has defined the Dutch zoological park as a two-piece institution functioning as nature conservationist and entrepreneur.

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Appendix A: Interview guides

Note: the question topics presented here are guidelines and have differed between interviews based on different relevant and interesting topics that have emerged per interviewee.

Interview guide for interviews with zoo employees, nature conservation organisations, and botanical associations:

1. *Ask for permission to record the interview for transcription purposes only.*
2. Ask about the main goals of the zoo in relation to nature conservation and education.
3. Ask about the role of scientific knowledge in the formulation and evaluation of these goals.
4. Ask about the types of collaboration that the zoo participates in to achieve these goals, specifically regarding knowledge exchange.
    a. Ask about their relations with other (inter)national zoos, and government organisations.
    b. Ask about their relations with in-situ nature conservation actors.
    c. Potentially refer to the IUCN One Plan Approach.
5. Ask about the contributions that the zoo makes regarding nature conservation, both ex-situ and in-situ, as well as their limitations.
6. Ask about the contributions that the zoo makes regarding other roles, as well as their limitations.
    a. Ask about entertainment.
    b. Ask about education.
7. Ask how the interviewee sees the future of Dutch zoos.
    a. Ask about resistance from societal or political parties.
    b. Ask about what changes are likely to take place in the future.
    c. Ask about what (scientific) knowledge is required to make such changes.
    d. Ask about which actors could (or should) finance such changes.
8. *Ask whether they have any final remarks or questions regarding the interview.*
9. *Ask whether they would like to receive the final thesis report.*
10. *Ask for any references to potentially interesting respondents in their network.*

Interview guide for interviews with animal rights advocates and a city councillor of Amsterdam:

1. *Ask for permission to record the interview for transcription purposes only.*
2. Ask about the interviewee's viewpoint on zoos.
    a. Ask about their view on the roles that zoos fulfil in society.
    b. Ask about differences they believe exist between Dutch zoos.
3. Ask about the extent to which their arguments are based on scientific knowledge and/or ethical beliefs.
4. Ask about their methods for sharing their arguments and interacting with other actors, specifically societal and political actors.
5. Ask how the interviewee sees the future of Dutch zoos.
    a. Ask about what changes are likely to take place in the future.
    b. Ask about what (scientific) knowledge is required to make such changes.
    c. Ask about which actors could (or should) finance such changes.
6. *Ask whether they have any final remarks or questions regarding the interview.*
7. *Ask whether they would like to receive the final thesis report.*
8. *Ask for any references to potentially interesting respondents in their network.*