What is the 'Nature' of Degrowth?

Exploring Human-Nature Relationships in the Degrowth Movement through the Analysis of their 9th International Conference

Bucur Iosif Mironescu Iancu

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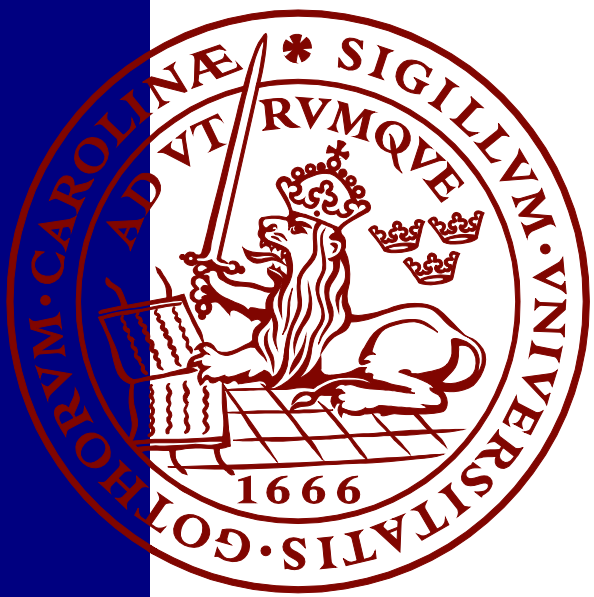

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Supervisor: Altaaf Mechiche-Alami, LUCSUS, Lund University

Abstract

Perceptions of human-Nature relations (HNRs) have been long theorised to be one of the factors causing global warming and environmental degradation. While individuals in Western societies have been increasingly recognising intrinsic values in Nature, 'Mastery over Nature', considered as prompting harmful interactions with Nature, is still prevalent at the social level. Social movements, such as Degrowth, could open avenues for alternative, more sustainable HNRs. To explore these possibilities, this thesis conducts a qualitative content analysis on Degrowth's 9th International Conference. To do so, it uses an adapted framework from the model developed by Muhar et al. (2018) to analyse the emergence of socio-cultural concepts such as HNRs in worldviews. Results show that the Degrowth movement does not have a unified notion of an appropriate HNR, but that the concept of the 'Commons', prevalent in the movement, could open the avenue for potential transformations and socio-ecological transitions.

Keywords: Human-Nature relationships, socio-ecological transitions, Degrowth, content analysis, sustainable behaviours, Commons

Word count: 11434

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1 Introduction

Ideas of 'Mastery over Nature' have been often used in European cultural history to represent the belief that Nature is something chaotic that needs human intervention to provide order in it (Muhar & Böck, 2018). Theorised to originate in Judeo-Christian understandings of the human-Nature relationship and from the rational ideas of the Western historical period known as the Age of Enlightenment, it is also perceived as the precursor to humans taking control of natural processes to make resources accessible (Muhar & Böck, 2018). Contrasted to this, life systems on Earth, on which human societies rely to survive, are being threatened by global warming and environmental degradation (Rockström et al., 2009), which in turn precipitate biodiversity loss (Ceballos et al., 2015). Both processes mainly derive from human actions, such as increasing greenhouse gas emissions (GHGs), deforestation and land-use change (IPCC, 2023). These actions affecting Earth's processes on a planetary scale are thought to be rooted in these 'Mastery over Nature' beliefs, portraying an industrial and globalised society that controls Nature through science and technology (Muhar & Böck, 2018) signalling the entrance to the era known as the 'Anthropocene' (Crutzen, 2002).

1.1 Mastery over Nature and human-Nature relationships

While this Mastery over Nature narrative aims to offer an explanation of the causes that have led to the present state of Earth, the concept of Mastery over Nature as an image of a human relationship with Nature was first used by Van den Born (2008) to assess people's perceptions of appropriate human-Nature relationships (hereafter referred as HNRs). It succeeded another study carried out in the Netherlands, that revealed that a new 'biophilia' (i.e. a love for Nature and a universal acknowledgement of its intrinsic values) was emerging in people's perceptions, thus rebutting previous claims that the notion of Mastery over Nature was still prevalent in western societies (Van Den Born et al., 2001). While more recent studies show similar results in other geographical locations (Calderón Moya-Méndez et al., 2022; Lema et al., 2023), this 'biophilia' has since then been discussed, with some limitations and bias attributed to the methods (Flint et al., 2013, 2023; Groot & Born, 2007; Yoshida et al., 2018), but also refinements introduced in the typology used (Braito et al., 2017). Nonetheless, because these results seemed to mismatch the reality of the advancement of the present crises (e.g. global warming and environmental degradation), Muhar and Böck (2018) conducted a study that showed that Mastery over Nature was being rejected at the individual level

but implemented socially, which aligned with the results of the study carried out by Yoshida et al. (2018) on farmers' perceptions on HNRs in the US.

This highlights a tension between the personal and the social sphere. While environmental awareness and recognition that Nature has intrinsic values (i.e. its existence has value in itself) have been regarded as high in Western societies (Van Den Born, 2008; Van Den Born et al., 2001), human action on a broader scale is still putting pressure on Earth's systems. If claims that held beliefs and values of 'Mastery over Nature', e.g. certain worldviews, are still prevalent in society (Muhar & Böck, 2018) were to be true, this would resonate with recent calls that a fundamental transformation of how humans relate to Nature is necessary to interact more sustainably with biophysical environments (Parra & Walsh, 2016). These claims argue that so-called 'techno-managerial fixes', such as the transition from fossil fuel-based energies to renewables or carbon offsetting programmes are not enough to halt present crises in the long term (Hickel & Kallis, 2020), with human societies also needing alternative imaginaries on how to relate to Nature (Parra & Walsh, 2016). Nonetheless, while other alternative images of HNRs are discussed to lead to more sustainable behaviours, operationalising them has been proven complex, especially at social levels (Flint et al., 2013). This could hinder efforts at achieving these transformations, since these views are difficult to link to concrete actions, even more to justify changes into other societal arrangements (Braito et al., 2017).

Social movements are regarded as grassroots organisations that can prompt societal changes through a diverse number of strategies and tactics (Hernandez, 2018). As such, they can be catalysers for social transformations, while enabling spaces where novel relationships between humans and humans and Nature can emerge (Hernandez, 2018). While some studies interested in HNRs have been conducted on collective organisations (Flint et al., 2023), none have targeted social movements as their object of analysis. Because of these reasons, analysing a social movement that aims at transforming society, both through changes in individual behaviour and different institutional arrangements, could help answer how such transformations and how alternative HNRs might look like. This is why I turn to Degrowth.

1.2. Degrowth and Nature

Degrowth is an academic and social movement that aims, among other things, at achieving ecological sustainability through a number of systemic changes that imply a reduction in overproduction and overconsumption together with a radical redistribution of resources (D'Alisa et al., 2014). The Degrowth movement is particularly interesting because, although concerned about Nature and sustainability in their goals, it has been criticised for not engaging sufficiently with questions about

'what is Nature' which in turn can undermine their attempts at relating to Nature in a different way (Heikkurinen, 2021; Spash, 2021).

This criticism is constructed upon the argument that this reduction in overconsumption is not justified, at least partly, by an environmental imperative, but rather perceived as a social choice "because living simply […] is how the good life is conceived" (D'Alisa et al., 2014; Spash, 2021). Contrastingly, the movement is also influenced by Deep Ecology, which argues that humans are matter-energetically embedded in Nature (Heikkurinen, 2021). Degrowth also references Buen Vivir concepts, which recognize intrinsic values in Nature, rejecting the instrumentalization of nature by humans and Western anthropocentric positions (D'Alisa et al., 2014; Spash, 2021). These Deep Ecology and Buen Vivir influences represent, in the movement's eyes, a different perception of Nature than those prevalent in Western societies, but do not form part of the movement's core (Spash, 2021). Down the line, Spash (2021) identifies that self-limitation is not a convincing argument for restricting material-energy throughput and for caring about the non-human. Heikkurnen (2021) also poses this as an issue and calls for the need to open the debate on Nature in relation to Degrowth, with the need for the movement to delve deeper into matters of environmental philosophy.

All in all, Degrowth proposals entail a radical shift in how societies organise themselves, institutionally but also economically for the management and provision of resources (D'Alisa et al., 2014). For the movement, this shift cannot happen without managing biophysical environments sustainably (D'Alisa et al., 2014). But how can they justify caring for Nature without thinking differently about it? Could it be possible that, without engaging with conceptualisations of Nature, they would reproduce 'Mastery over Nature' narratives?

1.3 Aims and research questions

Answering these questions is the purpose of my thesis. The analysis is influenced by the issues and methods common in research interested in HNRs, and I expect my results to in turn help to advance inquiries in this field. If new HNRs are also necessary to imagine alternative worldviews and transform societies to be more sustainable, this thesis could also provide new insights into this matter. Finally, it could also be helpful for the Degrowth movement, starting a debate into how normative behaviours while interacting with biophysical environments can be justified. The first, general guiding research question is:

1) What alternative HNRs can be found in the worldviews that are part of the Degrowth movement?

Operationalising concepts such as worldviews or the non-material aspect of HNRs as human mental models with how they affect behaviour is complex, even more so when trying to predict these behaviours (Braito et al., 2017). While it is out of the scope of this thesis to carry out such operations, attempts at directing societies towards more sustainable lifestyles, such as those of the Degrowth movement, can benefit from others trying link worldviews and sustainable behaviours. For this reason, a second question will be explored in the discussion section:

2) How can alternative worldviews and HNRs be adopted, and how can these prompt different behaviours towards the biophysical environment?

To decide which methodological choices are best suited to conduct my analysis, I will first review how the study of HNRs started and how it has developed since its inception, presenting them in the next section.

2 The study of human-Nature relationships (HNRs)

HNRs usually fall into the category of socio-cultural concepts. These concepts are explored because they describe ways of understanding the world, such as worldviews, along with beliefs, values, and norms (Muhar et al., 2018) which in turn inform societies and individuals about which behaviours and actions are deemed appropriate (van Riper et al., 2019). HNRs can also refer to material relationships (Yoshida et al., 2022) for which other frameworks are used to analyse these material human-Nature interactions (Díaz et al., 2015; Ostrom, 2009). However, the focus in this thesis is on the non-material aspects.

2.1 HNRs typologies

Van den Born (2008) was the first one to devise a typology of HNRs to study people's 'Visions of Nature'. This typology was a set of four philosophical HNRs, also called environmental worldviews, that people were questioned about, specifically which ones they regarded more appropriate. Since this first use, the list has expanded to provide more nuance. The complete list is visualised in **Table 1**. These 'Visions of Nature' were not only composed of this set of HNRs but also of 'Images of Nature' and 'Values of Nature'. 'Images of Nature' relates to the question of what Nature is and what types of Nature are distinguished, whereas 'Values of Nature' are the reasons why Nature is perceived to be important (Van den Born et al., 2001). While this typology was designed to bypass relations to specific natural elements or biophysical environments, therefore looking at relations to Nature in a 'general sense', it had a clear object of study —'laypeople', i.e. individuals that do not pertain to scientific fields— and a concrete goal, which was improving communication between conservation agencies and the public (Van den Born et al., 2001). As such, it was established upon the premise that if information provided by conservation agencies were to resonate better with people's beliefs and attitudes, they would be more effective in pursuing their conservation goals (Van den Born et al., 2001).

Since its first application, many methodological limitations have been pointed out. Usually carried out through questionnaires, surveys, and semi-structured interviews, respondents usually disagreed with some of the features of these 'pre-defined' HNRs, sometimes pointing out implicit negative bias in Mastery over Nature which would prompt them to reject it (Groot & Born, 2007; Yoshida et al., 2018) as well as overlapping between some of them (Flint et al., 2023; Yoshida et al., 2018). This has led to the conclusion that these HNRs are not mutually exclusive, and that freedom needs to be provided to respondents to come up with their own, or at least their nuances of them (Flint et al., 2023; Yoshida et al., 2022).

Table 1. List of HNRs with their characteristics. Adapted from Braito et al. (2017)

HNR Type	HNR description
Master	Humans have a right to alter Nature, which is allowed by technological progress for taming and improving Nature. This is necessary to protect humans against natural disasters.
Steward	Humans are responsible towards Nature because our actions can have impacts on it. Mankind can be a threat to Nature.
Partner	Humans stand side by side with Nature and are both are of equal value. Interactions between humans and Nature should benefit both.
Participant	Humans are part of Nature biologically and spiritually. Humans are active participants in it but also a small part of it.
User	Nature produces products and services for humans. They provide goods for human wellbeing, and as such should be protected now and for future generations.
Apathy	Nature does not play a role in the life of some humans, and they do not depend on it to survive. Their behaviour does not affect Nature whatsoever.
Nature Distant Guardian	Pets, houseplants or urban gardening substitute direct experience with Nature. People can connect with Nature through them and the Nature that they can find in the city. They can also protect Nature by engaging with it in the media.

Not only can these HNRs influence each other, but they also derive from the question of what is regarded as Nature and what values are ascribed to it, as well as interacting with more general worldviews, beliefs and attitudes (Muhar et al., 2018) exemplifying the complexity of the concept. Therefore, to unpack HNRs effectively, it is also necessary to unpack the elements with which they interact and are in constant dynamism.

2.1.1 What is Nature?

What Nature is, or what the concept of Nature[1] refers to, is not clearly defined between people not engaged in academic fields (Van Den Born, 2008), but also by scientists constantly discussing it, especially in social sciences spheres (Castree, 2003; Demeritt, 2002; Magda et al., 2022). Depending on the scientific field that approaches it, and the scale of Nature studied (e.g., the general concept, a specific species, a resource system, etc.), different meanings of Nature can arise (Muhar et al., 2018). Additionally, ways of understanding Nature are also spatially and culturally bounded, shaped through particular interactions with it (Castree, 2003; Demeritt, 2002). Therefore, it is necessary to look into which Nature is talked about when approaching it.

Another essential component of this broad question is the perception of humans as being separated or part of Nature. For Degrowth, a unified concept of Nature does not seem clear. Its proponents usually stand between identifying Nature as a social construct or a conceptualisation of Nature as understood by Deep Ecologists, where humans are intrinsically connected to it (Heikkurinen, 2021). While it is always not clear-cut that Degrowth members opt for one or the other, the position on Nature remains undefined. This position is mirrored more generally in other disciplines when confronted with the question of what Nature is, where Nature can be seen as an objective reality, as opposed to culture, or embedded in it as a constructed social concept, thus assuming that it does not match a reality found outside of human experience (Daugstad et al., 2006; Pollini, 2013).

Discussing Nature as a social construct is not exempt from controversies, the main point of contention being the argument that Nature has specific materialities, i.e. 'Natures' (Castree, 2003). This position is especially prevalent in Marxist theory (Castree, 2003) and scholars that argue that reducing Nature to human experience halts efforts to prevent global warming (Demeritt, 2002).

In his typology of the social construction of Nature, Demeritt (2002) borrows the differences that Raymond Williams identifies in the word 'nature', consisting of Nature as (i) the essential quality of character of something, (ii) the inherent force which directs either the world or human being or both, and (iii) the external material world itself. For the purpose of this thesis, I will pay special attention to (iii), how that external world is perceived, and how are humans perceived in relation to it (e.g., are

[1] In this thesis, this 'external, material world' is referred as the biophysical environment. Regarding Nature with capital 'N', it is the concept that encapsulates all possible understandings of Nature and thus remains an overarching category, void of meaning without referring the specificities that it encapsulates. Lastly, I refer to nature without capitalising as the elements (i) and (ii) identified by Demeritt (2002).

we part of it or are we emancipated from and dominate it) which is where the tension is specifically located in Degrowth.

2.1.2 Values of Nature

The values of Nature are strongly interrelated to what is perceived as Nature. They can be identified depending on which standpoint they emerge from, usually divided between *anthropocentrism*, *biocentrism* and *ecocentrism* (Stenmark, 2002). *Anthropocentrism* stems from the view that nature should be evaluated solely on how it affects human beings. *Biocentrism* and *ecocentrism* argue that this evaluation should also take into account other living beings or ecosystems, with the former caring only about living beings and the latter accounting for ecosystems as well (Stenmark, 2002). In the *anthropocentrism* view, only humans possess intrinsic value and/or moral standings, whereas, in *biocentrism* and *ecocentrism*, these are also identified in living beings and ecosystems. It can be further complexified by looking at which level other living beings and ecosystems are valued in relation to humans, where equal or superior standing is considered as 'strong' and inferior is considered 'weak' (Stenmark, 2002).

Another particular concept that has been the focus of some of the research interested in HNRs is that of Ecosystems Services (ES) (Braito et al., 2017; Flint et al., 2013). ES is a particular way of valuing Nature, most of the times in monetary terms, the services and benefits that a biophysical environment provides to human well-being (this can also be non-material things, like aesthetics) (Admiraal et al., 2016; Yoshida et al., 2022). It has been studied through the lens of HNRs because studies have found that ES has had limited success in halting biodiversity degradation and because ES have not been shown to be a primary reason why humans act for Nature to conserve or protect it (Admiraal et al., 2016). It has also been paired up with the HNRs known as 'User' and regarded as intersected by *anthropocentrism,* utilitarian values, and notions of Nature as separate from humans (Braito et al., 2017; Flint et al., 2013). It is also a different concept in the literature because, while most studies of HNRs have been conducted at the individual level, the ES concept is used to guide the management of HNRs from the global to the local level (Flint et al., 2013)

These values are also important because they end up shaping how HNRs play out. For example, 'Mastery over Nature' is regarded as being *anthropocentric*, while other HNRs like 'Partner with Nature' and 'Participant with Nature' are understood as being *biocentric* and *ecocentric* respectively (Van Den Born, 2008).

2.1.3 Worldviews

It is important to also address the concept of worldviews because the literature has often labelled HNRs as 'environmental worldviews' (Van Den Born, 2008; van Riper et al., 2019) and has increasingly recognised the importance of studying HNRs and their interaction with other, general socio-cultural concepts (Muhar et al., 2018).

Worldviews can be understood as overarching systems that inform how humans interpret, enact and co-create reality (Hedlund-de Witt et al., 2014), and are often used as an umbrella term to refer to the interaction of values, beliefs and traditions (Braito et al., 2017). Just as HNRs concepts, worldviews have been used to better understand environmental attitudes that guide sustainable lifestyles (Hedlund-de Witt, 2012). Despite this similarity, worldviews have been linked with behavioural models such as the Value-Belief-Norm or the Theory of Planned Behaviour to operationalise how these worldviews affect actions, whereas HNRs have seldom been linked to these models. Braito (2017) attempted to bridge this gap by including HNRs as a factor in this type of behavioural models, with limits because of the identified context-bound nature of these HNRs, which resulted in them factoring as a complementary, overarching domain. Nonetheless, this approach is not reproduced in this thesis due to methodological differences, as their analysis relied on in-depth interviews and narrative methods.

Similarly, Muhar et al. (2018) sought to include what they referred to as "socio-cultural concepts of Nature" (hereafter referred to as SCCN) in broader models of human-Nature interactions. In their approach, SCCN are the concepts that describe individual and collective understandings of Nature as well as the complex relationship between humans and their biophysical environment, such as HNRs and Visions of Nature. Instead of being considered complementary to worldviews, they are regarded as a specific subset of general socio-cultural concepts, and thus they need to be seen in relation to them. Moreover, they are influenced by other factors that are not socio-cultural concepts. Thus, recognising the contextual specificity of these socio-cultural concepts, they factor in their model other elements that shape them, such as situational factors, that take into account the concrete natural resource that is being interacted with, individual and group attributes, or different forms of governance, as well as interactions with other socio-cultural subsystems (e.g. economy, technology, political system) **(see Figure 1)**.

Because Degrowth is a movement, not a group of people or a specific set of governance relations managing a concrete biophysical environment, these situational factors or subsystems do not

appear, or do so in discussions of examples, but cannot depict the full picture of the movement's worldviews, beliefs and values. I will show how I adapted my analysis to the necessities of my object of study further below in the methods.

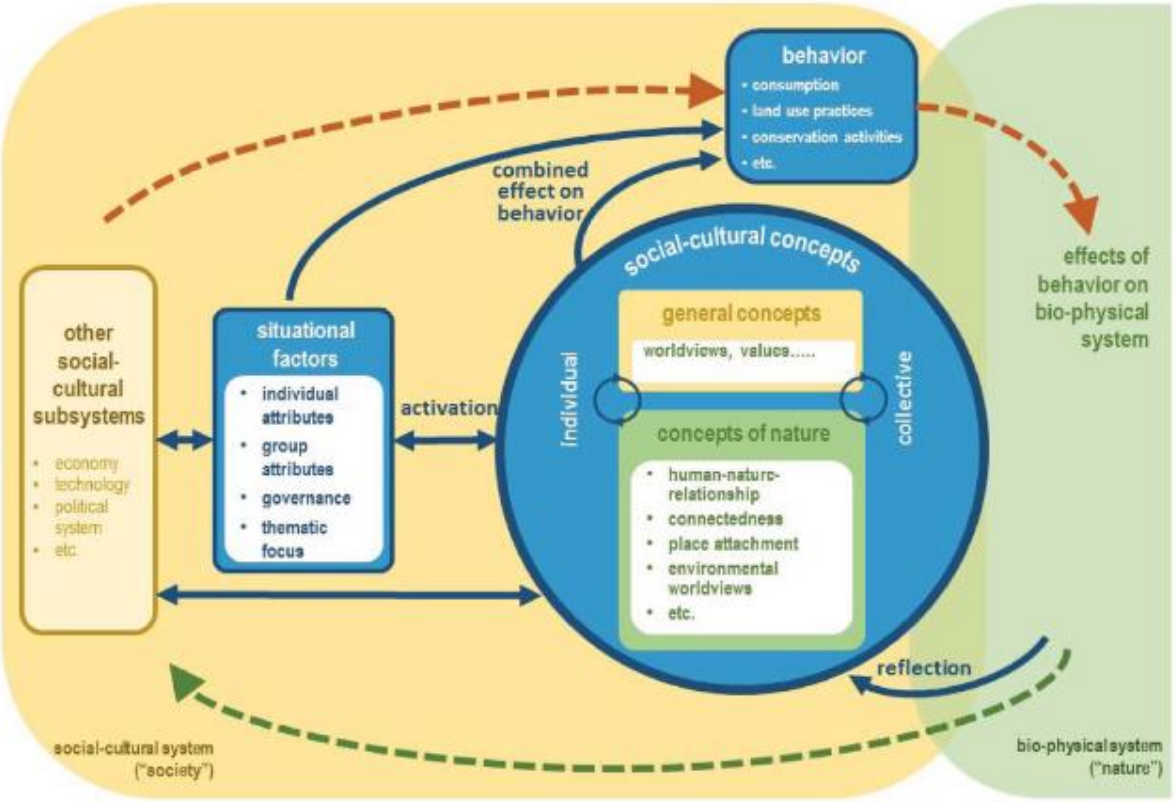

Figure 1. Add-on module designed to complement existing frameworks that analyse human-Nature interactions with socio-cultural concepts of Nature. The elements interact with each other to reflect how socio-cultural concepts of Nature emerge and affect human behaviour, which ultimately has particular effects on biophysical systems (Muhar et al., 2018).

3 Methods

3.1 Corpus of the analysis

To find out about Degrowth worldviews and their subsequent HNRs I have decided to analyse the 9th Degrowth International Conference held in Zagreb. I have analysed all the abstracts that introduced the different panels and presentations happening at the conference and transcriptions of the sessions that were made available to a wider audience on YouTube. The sessions are divided into 8 panel discussions, 2 sessions containing paper presentations and 5 keynote speeches. All these sessions last for approximately one hour and thirty minutes, often with questions at the end that are also included in my analysis. The transcriptions were generated by the webpage programme Kome.ai, and I later paired the transcriptions with the videos twice to ensure that they matched what was being said. Because I will be conducting a content analysis, and not a discourse analysis, I also decided to remove repetitions, spelling and grammar mistakes, because I am more interested in the factual contents rather than details of expression or language use (Gibbs, 2018). For the same reason, I removed interventions that were relevant to the organisation of the conference (e.g. housekeeping rules) but not for my analysis.

It is important to note that not all actors who participated in the conference through presentations and speeches consider themselves part of the Degrowth movement, but their statements were considered, nonetheless. This is because despite not feeling affiliated with the movement, their interventions still form part of the discourses that shape and direct the movement towards different understandings and directions, as well as being in dialogue with some of the characteristics of Degrowth, as shown by the fact that they attended the conference in the first place.

I chose the conference because it happened recently, which provides a view of the movement that aligns with the present; it gathers both academic and non-academic actors, thus bearing the possibility of expanding the debate outside of academic circles; and, lastly, it provides explicit and implicit views of nature, as the conference deals with multiple themes that, although not directly addressing the matter of human-nature relations as laid down here, they nonetheless find themselves embedded in them. In total, 287 abstracts were available in the programme overview, which consisted of 177 Paper presentations, 73 non-academic sessions, and 37 special sessions.

3.2 Analytical process to find HNRs

The body of research on HRNs has increasingly identified that, to fully grasp HNRs, it is necessary to relate them to other general socio-cultural concepts (Muhar et al., 2018), and that HNRs are related

to how Nature is conceived relationally to humans and the values ascribed to it (Van Den Born, 2008). They also emerge from other concepts and processes that contextualise them. Therefore, the purpose of the analysis was to find these elements that would inform certain HNRs in the transcription of the conference and their abstracts.

To find these elements, I conducted a qualitative content analysis of the corpus through a simplified version of the model developed by Muhar et al. (2018) **(Figure 2)**. For general socio-cultural concepts (in this case, values, beliefs, and norms) and HNRs, I tried to identify them deductively, meaning that I did not use other typologies found in the literature, such as the one shown in **Table 1**, but I laid them out as I found them mentioned in the corpus or from a combination of the different elements. For the question of *What is Nature?* I focused on how Nature is described and on the issue of humans being part or not of Nature. Finally, for the values, I borrowed the concepts of *anthropocentrism, biocentrism* and *ecocentrism* as identified by Stenmark (2002).

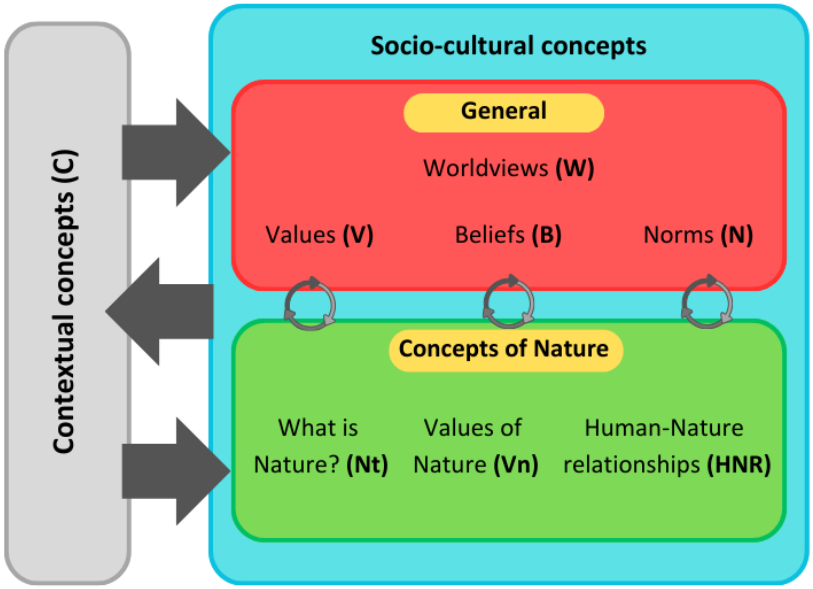

Figure 2. Framework adapted from the model developed by Muhar et al. (2018) for the analysis conducted in this thesis. Worldviews overarch all other socio-cultural concepts. General concepts are composed of values, beliefs and norms. These interact with other concepts of Nature and form each other dynamically. Contextual concepts, referring to material processes or other subsystems, are also important for the formation of socio-cultural concepts.

The first step of this analysis was to find explicit contextual elements, general socio-cultural concepts and SCCN that were mentioned in the conference. Once found in this first screening, these became 'codes', that worked as themes, which served to identify the statements that define the concepts **(see Appendix, Table A.1, for examples)**. This coding was done through the program NVIVO 14. I

only turned into codes the contextual elements and general concepts that explicitly or implicitly dealt with Nature and could be relevant for informing HNRs. The second step was to find the linkages between general concepts, or between them and perceptions of Nature, from which values, values of Nature and HNRs could be implicitly drawn. Finally, as a last step, these concepts were arranged hierarchically, with worldviews being in the highest tier, then general beliefs and values pertaining to these worldviews, and finally understandings of Nature, values of Nature and HNRs **(Table 3)**. This hierarchy does not entail importance but rather expresses the linkages between a general belief or value and the SCCN that stems from them. Some SCCNs could not be linked to any general concept or worldview or were sometimes claimed as necessary but not yet part of Degrowth. These were labelled as 'others'.

3.3 Justification of the methods

The development of the literature on HNRs has demonstrated that pairing existing typologies with other socio-cultural concepts improves our understanding of them while being able to track how they came to be as particular perceptions (Muhar et al., 2018). This is why in the analysis conducted in this thesis I decided to not only identify HNRs, but also other general socio-cultural concepts, and how they interact with each other.

Due to different choices in data selection, I decided to conduct a qualitative content analysis. Most of the research in this field has opted for surveys, questionnaires, and interviews as their methodological approach. This allows for a more in-depth analysis of individual perceptions, which can later be paired up to assess correlation and agreements among survey items (Braito et al., 2017; Van Den Born, 2008). On the contrary, I believe that choosing a setting such as a conference can shed more light on how these socio-cultural concepts are constructed, agreed and contested on a collective level. Thus, deciding to go for a content analysis was due to the fact that I was dealing with text.

Lastly, I decided to not apply a pre-existing typology from the literature nor come up with another one myself. Instead, I decided to approach the data deductively, which can then be compared later with other findings in the field. This is mainly due to the limitations attributed to applying pre-defined concepts in the analysis, which can lead to biases (Flint et al., 2023), and obscure other concepts that have not been previously found in the literature. This has been a common limitation in other studies, with the most recent one opting to use mixed inductive-deductive approaches (Yoshida et al., 2018) or completely deductive (Hertog & Turnhout, 2018).

3.4 Limitations

3.4.1 The data

The data that I analysed in this thesis was limited. This comes with advantages and shortcomings. An advantage is that the analysis can be done in-depth, the obvious shortcoming being that there is a possibility to be too narrow and miss the big picture. Choosing a conference instead of a selected body of literature has implications for the results and comes with methodological challenges. Degrowth conferences are mainly academic, but as they aim to also become a social movement, they strive to gather non-academic actors such as politicians, trade unionists and artists. Focusing on the conference opened the window to study perspectives that are not only academic, but this approach comes with the trade-off that certain matters are not explored with as much detail as in academic articles or books. Nonetheless, a clear separation of academic and non-academic statements was not possible, and the conference as a setting was dominated by academic jargon.

As mentioned in the justifications, analysing the conference can provide concepts that function at collective levels. Nonetheless, not being able to contrast these findings with interviews or questionaries from individuals that could provide nuances, or contest them, implies less focus on the personal sphere.

The sessions that were made public through the YouTube channel represent a small portion of the entire conference. Whilst I also analysed the abstracts, the results may not be completely representative of all the conference, making it possible that the results might have slightly varied if the whole conference was available. Nonetheless, that would have meant analysing a huge amount of text data. All in all, I am confident that my results are a good representation of the opinions, arguments and attitudes on the issue of Nature as found in the conference.

3.4.2 The methods

The first limitation is that of subjectivity. The different steps in the analytical process are targeted at providing consistent and robust results that could make up for biases or misleading interpretations. Nonetheless, interpretations of the data need to be made, which can lead to incorrect judgments through the analysis.

Using qualitative content analysis on my specific object of study is something that has not been carried out within the HNRs literature. As such, I could not entirely compare my methods to other

studies, only partially. This means that they could be refined if they were to be used in the same manner in similar scenarios.

Finally, my approach has led me to come up with new concepts, not found before in the literature. These could be only specific to Degrowth, thus non-reproducible outside of this social movement, or others could be found with a different arrangement of the *explicit* concepts found within the conference. Again, this comes back to subjective challenges. Nonetheless, through an accurate account of how I carried out the analysis and laid out my findings, I expect to show clear results, that at least can provide fruitful advancements and discussion to the literature of HNRs.

4 Results

The results of the analysis are displayed in **Figures 3** and **4.** The concepts are arranged around two overarching worldviews: a 'Growth' worldview, also sometimes referred in the data as 'Neoliberalism' or 'Capitalism', and a 'Degrowth worldview'. These contain subset worldviews (Green Growth, Commons and Planetary Boundaries) that have different implications for HNRs. While displayed separately, this does not mean that are mutually exclusive, but are nonetheless independent as they entail different interpretations.

While the analysis aimed to identify Degrowth worldviews and the socio-cultural concepts forming them, there was an abundance of concepts that were the point of critique and the premise upon which alternatives were constructed. Because some of these alternatives are designed in radical opposition to the Growth worldview, it is useful to explore this contested worldview in the results, analysing why its concepts are believed to be harmful to Nature and how different solutions can be presented to them. Before dwelling on Growth worldviews, though, it is important to note that the 'Growth' worldview as described in the results is not a full, scientific account of it, but rather how Degrowth proponents perceive it, thus inaccuracies can be found in it.

From the description of the Growth worldview in the conference, I identified it as *anthropocentric,* being composed of two specific HNRs that were considered damaging to Nature: 'Domination of Nature' and 'Consumption of Nature'. The Degrowth worldview, on the contrary, oscillates between weak *biocentrism* and *ecocentrism* depending on how they justified their alternatives regarding Nature. One alternative HNR appeared in this worldview, that of 'Nature as commons'. Finally, not clearly pertaining to any of the worldviews, 'Nature as Spiritual' and 'Human-more-than-human alliances' were briefly covered in the conference.

In this results section, I will first describe the concepts of the Growth worldview and their interactions, which will help in turn scheme those of the Degrowth worldview. In the **Appendix**, **Table A.1** I highlighted some of the most prominent statements that helped define the concepts to represent how they were extracted from the corpus.

4.1 The Growth Worldview

Neo-colonialism (C1) is the first general concept from which a HNR can be derived. It refers to the historical processes of colonialism that have built the structures that allow an unequal relation of **Extractivism (C2)**. This extractivism is understood as a flow of materials starting from the extraction of materials from Nature in one place and then sent to the other side of the world, where they

benefit from it. This is an unequal relationship between humans and Nature alike, where certain societies do not enjoy the Nature that is closest to them, and Nature is destroyed in the process of extracting resources that are deemed valuable. Moreover, once the materials have been "consumed" at the destination, they are returned in the form of waste, which also harms humans through the pollution of Nature.

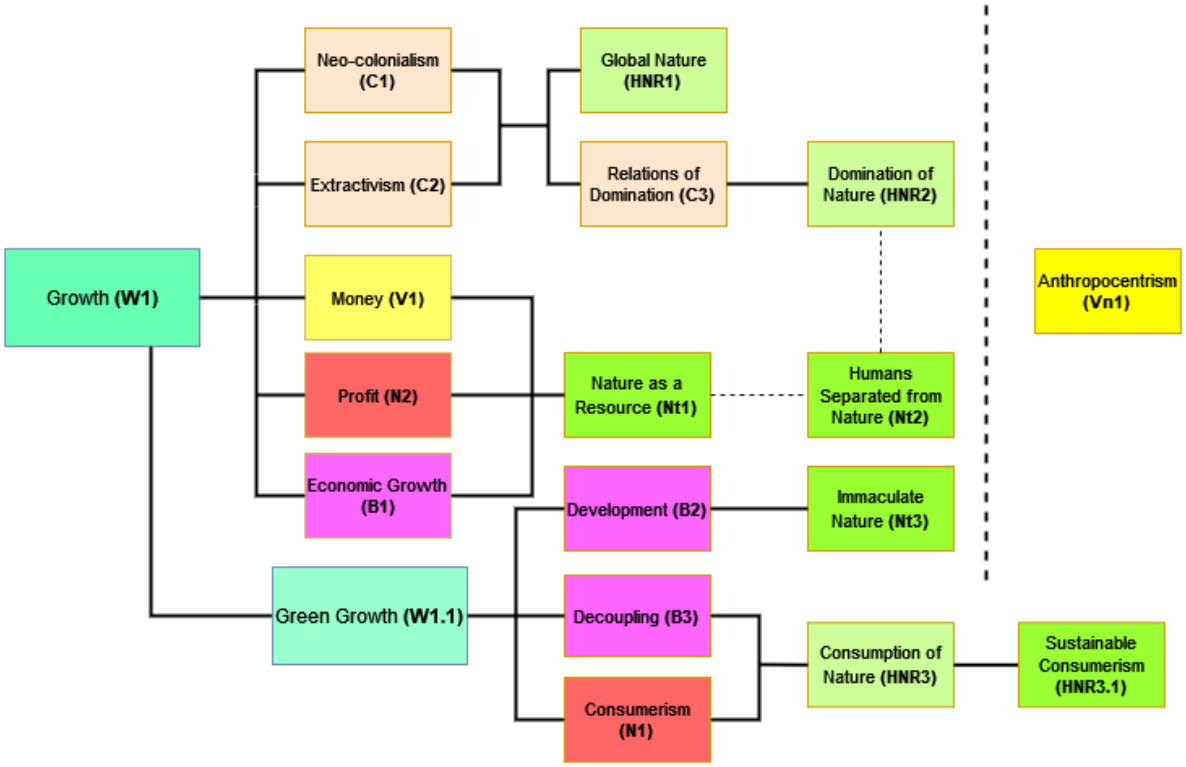

Figure 3. The Growth Worldview and its subset worldview (**W**). The hierarchy expresses which general socio-cultural concepts (**V, B** and **N**) and contextual concepts (**C**) generate certain understandings of Nature (**Nt**) and HNRs (**HNR**). These also reflect certain values on Nature (**Vn**).

4.1.1 Beliefs, values, and norms of the Growth worldview

Both the Degrowth and Growth worldviews are aimed at well-being, but what this well-being is composed of and the means to achieve it are very different between the two paradigms. These differences are structured through certain beliefs, values and norms.

When it comes to the Growth worldview, well-being is achieved through **Consumerism (N1)**. Consumerism, which refers to the act of consumption, is mainly the desire for material accumulation, sometimes also the accumulation of experiences or media. It is understood as a social norm because it is perceived as the appropriate behaviour. As expressed in this statement from the conference:

*"The capitalist common sense is constructed on the premise that abundance and **well-being** are achieved through high levels of consumption and production" (own bolding).*

To allow everybody to consume appropriately, i.e. to achieve well-being, societies must be directed towards **Economic Growth (B1)**, understood as the increase of Gross Domestic Product (GDP) in the economy. Moreover, Economic Growth also is an enhancer of the social system and can provide development and a "good life for all". For the economy to grow, the economic actors have to be directed towards productivity either through the reduction of costs throughout production processes or through an overall increase in production output. The inherent motivation of economic actors to pursue productivity is the increase of **Profit (N2)** which is the primary form of material accumulation in consumerism.

Money (V1) is seen as an overarching parameter that regards the value of most things. Due to its pervasive nature, money as being the most important value is contested within the Degrowth worldview, arguing that the economy and societies, in general, should value things through other parameters than money, while other elements that cannot be appropriately valued by money needing to be valued through other methods.

At the ideological level, the Growth paradigm is said to present itself to be the only effective system to achieve well-being or at least the most rational to allocate resources. Because it is, on an essential level, the best system possible, solutions to the current crises must be found within the system, while a systemic change would make things worse.

4.1.2 Green Growth as a subset worldview

Green Growth (W2.1) is the iteration of Growth that is proposed to deal with the global warming and biophysical environment crises. In this more specific worldview, the practices of extractivism and neo-colonialism are still enacted, and the beliefs and values remain more or less the same. This is because, as explained in one of the abstracts, "*the climate and environmental crises are a market-based problem that requires technocratic fixes".*

Economic Growth is recognised to be a driver of environmental degradation, but this cause-effect chain is not inherent to growth and can be fixed through technological innovation and efficiency improvements that would reduce biophysical environmental harms to a minimum or eliminate them. This can be labelled as **Decoupling (B3)**, normally used in economics to mean the separation between GDP growth and the reduction of environmental pressures that this growth entails (Hickel &

Kallis, 2020). At the same time, the individual consumer is the agent that can make change happen and needs to be instructed or guided to consume in a way that is not environmentally harmful, by choosing the right option available in the market. This is understood as **Sustainable Consumerism (HNR3.1)**.

Moreover, it is believed that the achievement of a certain level of wealth and income brings a cleaner environment, which prompts a certain model of **Development (B2).** The Growth Development exports its socioeconomic model to developing countries, built on the beliefs and values that economic growth and specific levels of consumption can end up separating the harms of economic growth from its social benefits.

4.1.3 Growth and its relation to Nature

Neo-colonialism and Extractivism allow for a perception of Nature as a **Global Nature (HNR1).** Nature here is no longer tied to one place but can be dislocated from its origin and be experienced or used anywhere else in the world.

Developing from the general element of Relations of Domination that characterises Growth, the **Domination of Nature** is a consequence of this general trait, more concretely a specific human-Nature relation **(HNR2)**. This domination also stems from an **Anthropocentric (Vn1)** standpoint, which is the vision of humans as being superior to Nature and being allowed to use it for its needs. This value of Nature is linked to the Growth worldview and explicitly pointed out in the conference. This domination is perceived as inherently destructive to the biophysical environment. Moreover, it is also carried by a specific portion of society, not all of humanity, as this part of the human population also is perceived to 'dominate' the rest. Nature is then regarded as a type of **resource** for human use **(Nt1)**, as a separate entity.

The **Consumption of Nature (HNR3)** is the interaction that the consumer individual mainly has with Nature within the Growth worldview. As described in the conference, it results in an alienation from Nature. This alienation occurs because the global supply chains that are at work in Growth systems (i.e. extractivism, neo-colonialism) are obscured to the consumers, with them being unaware of their destructive features.

Society and Nature are viewed as separated and sometimes, even opposite to each other **(Nt2)** which involves trade-offs between social growth and physical environmental protection. Examples of such trade-offs mentioned in the conference are that biodiversity enhancement —through protection—

can hinder agricultural productivity or so-called 'green jobs' in mining sectors, which are essential for Green Growth, and are allowed to destroy local ecosystems for the obtention of critical minerals.

Finally, within the iteration of Green Growth, we find the understanding of **Immaculate Nature (Nt3)**. In this concept, Nature is understood to be beautiful is what informs which Nature is worth saving. A biophysical environment that has not been intervened by humans in a very long time, very little, or ever at all, is considered more beautiful than one that has been affected by human actions. Therefore, is sought to be protected, and follows a specific type of preservation and conservation that affects the growth model of development.

4.2 The Degrowth Worldview

One of the premises of **Degrowth (W2)** is a direct opposition to Growth paradigms, its mechanisms and processes. Because of this, they welcome any type of ideas or actions that seek to organise socioeconomic life in a different manner than the ones found in the Growth worldview. But are they also in radical opposition about concepts of Nature, its values, and HNR when compared to Growth?

Degrowth rejects the notion of Economic Growth, because they locate as inherent logics of Economic Growth social inequality and environmental destruction, and do not believe that 'technocratic' solutions can make up for these traits, therefore economic reduction is perceived as essential to allow, as stated in the conference, "*the Global South to develop and avoid ecological breakdown*". While upholding this vision, they also emphasize that social and environmental issues are interconnected and that systemic changes need to be put forth to deal with current crises.

4.2.1 Beliefs, Values and Norms of the Degrowth worldview

Localism (B4) is one of Degrowth's most essential beliefs. It is structured around ideas of deep democracy, cooperation and conviviality, with communities being the most significant scale. It is based on the thought that re-localising supply chains and policy processes, with communities holding the ultimate responsibility for the management of their most close-by resources, is the best way of managing biophysical environments. As such, it follows ideas of decentralisation. It also strives to bypass the dichotomy between the rural and the urban, reconnecting them through a re-inhabitation of bioregions while fostering a mix of urban and rural ('rurban') values that would also encompass more-than-human actors.

Degrowth also tries to centre itself around the value of **Care (V2)**. Sometimes this care is prioritised towards humans, with the planet coming second, and other times the well-being of humans, non-humans and Nature alike is emphasised.

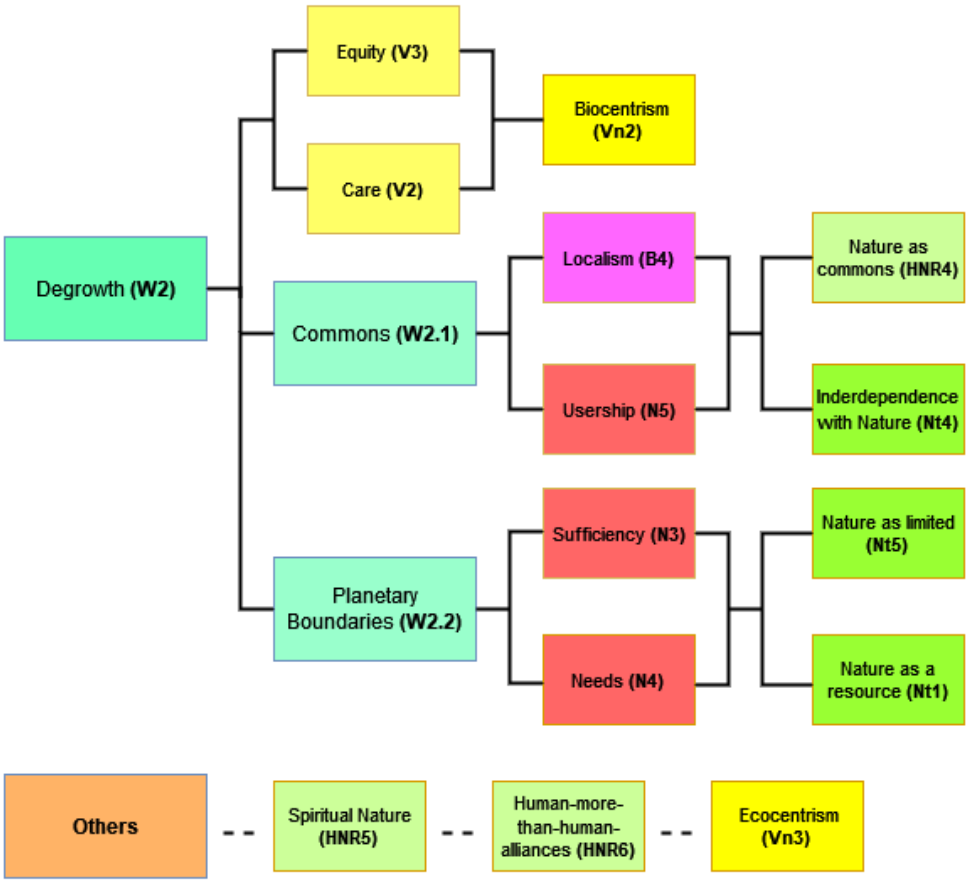

Figure 4. The Degrowth worldview and its subset worldviews (**W**). It proceeds in the same manner as Figure 3. Here are also reflected other concepts ('**Others**') that do not pertain to any worldview but are nonetheless discussed.

To deal with the damages that Economic Growth brings, the norm of **Sufficiency (N3)** has to be strived for. This sufficiency is sometimes paired up with what is known as subsistence economics, and it is understood in the degrowth as described in the following statement:

> *"Strategy for reducing consumption and production through changes in social practice in order to achieve environmental sustainability, whilst ensuring an adequate social foundation for all people. It just calls for the absolute reduction of production and consumption to create safe spaces to operate within planetary boundaries. Satisfy universal human needs instead of superfluous consumer*

wants. Care is reflected in their operations, creating only product that answer human needs and investing time into creating high-quality long-lasting products"

Throughout this quote, we also identify other values and norms prevalent in Degrowth, such as **Equity (V3)** and **Needs (N4)**. Equity here entails a fair distribution of resources among all humans, with everybody having their basic needs satisfied. Instead of directing production towards the fulfilment of desire, as found in the Consumerism ideal, production would be aimed at satisfying needs first.

4.2.2 Well-being within Planetary Boundaries

The concept of **Planetary Boundaries (W2.2)** gained relevance when introduced by Rockström et al. (2009). It stems from the understanding of Earth Systems as working in a relatively stable period — the Holocene— that precipitated human societies to develop as we know them today. But recent human activities have reached a level that can push these Earth Systems outside of planetary boundaries —thresholds that, if to be crossed, would push important subsystems into new states that could be catastrophic for human societies (Rockström et al., 2009).

This concept has been picked up by the Degrowth movement and expanded to include social parameters, which are composed of the goal of ensuring basic needs for all humans without over-shooting Earth's life-supporting systems. Planetary Boundaries are also used to portray the limited nature of Earth's resources, which would eventually impede limitless economic growth.

4.2.3 Degrowth and the Commons

The concept of the **Commons (W2.1)** is one of the most recurrent ones through the transcript and the abstract, and Localism is often paired up with it. This concept can have slightly different meanings, which is also due to the fact that it can represent different materialities. The commons can be understood 'as a set of shared resources that are self-governed by a community of users' (Commons Library, n.d.). In this understanding, communities collectively decide how to manage the resources, instead of the state or the market making the decisions (Commons Library, n.d.).

As used throughout the Degrowth Conference, it is often used to refer to the management of the physical environment. Remarked as a 'category' the commons reflect an **Interdependence (Nt4)** with more than human or non-human beings and invite questioning of what is taken but also what is given back to the commons. Thinking of resources as 'commons' is, as stated in an abstract:

> "An alternative way of organising key resources contrasted to capitalism and its alienation, and also as living resistance. It is a prefigurative politics, looking to produce democratic and egalitarian forms of social provisioning".

A reflection on ownership is key to the concept of the commons; the commons are not owned by the state nor by private actors, but by the community in cooperation. This type of ownership is even rethought as something new because ownership in itself is seen as inherently bad; **Usership (N5)** is then proposed, drawing from the notion that land is not a property, but something to be used. Therefore, through Usership the usual relation of possession is broken. In the case presented at the conference, the land is given to those who do not own any land, and through its practice a new relationship with the land occurs, which also opens up the space for novel forms of sociality and living together with other humans, understood as *communalisation*.

Usually paired with the commons are values that are thought to be contrary to growth ones, as reflected in this statement: "*The gathering of the community around the commons could be a counteracting of the fostering of consumerist desire pushed by capitalism* […] *and the fostering of other values*". For the commons to be able to ensure that everybody fulfils their basic needs attitudes of self-limitation and sufficiency are necessary.

4.2.4 Degrowth and Nature

In the Degrowth conference, the same spokesperson that presents the concept of Immaculate Nature within the Capitalist worldview also emphasises that, on the contrary, there is no such thing as untouched Nature. Nature is polluted and, while it is possible to "carve out the pollution", the damage has already been done. Societies are unavoidably embedded with Nature and vice versa, which follows notions of Deep Ecology where humans and Nature are embedded **(Nt4).**

Nature in the Planetary Boundaries iteration

Solely structuring the proposed systemic change in Degrowth through this renewed vision of the Planetary Boundaries seems to not entail a different understanding of Nature. Nature is referred to as a resource in a similar fashion to when discussing the Growth Worldview. The difference from Growth is that in this worldview, **Nature** is considered as **limited (Nt5)**. It can be measured through 'flow indicators' and thus managed within limits, but no other properties are assigned to Nature outside its utility for humans.

Moreover, a similar discussion is put forward concerning developmental issues, where meeting important indicators of social thresholds seems to also transgress planetary boundaries; a rethinking

into how to stay between both desirable levels is called up. Living well within limits, good life within limits or well-being within limits are concepts brought forward, which seek to explore alternative indicators to GDP to measure the well-being of a society.

Nature in the Commons iteration

The material embeddedness of Nature and Human societies is recognised within Degrowth, but the culture-Nature division is still palpable. Degrowth efforts as identified within the conference seem to be directed towards the reintroduction of Nature *inside* human cultures. The belief of Localism, which is particularly present in a worldview of Commons, would follow the principle of re-connecting economically with the land, and consumption outside of the specific region of the commons would only be made when necessary.

As such, humans are embedded materially with Nature, but more with the *closest* Nature, from which deep and intimate knowledge really arises. This could be understood as an HNR of **Nature as commons (HNR4),** where a different relationship but also knowledge of Nature can originate.

Values of Nature

Values stemming from a position of **Biocentrism (Vn2)** seem to be found often within the Degrowth conference. The movement itself is sometimes described as a perspective that promotes the flourishing of life on the planet together with values of appreciation of all human and non-human species.

When it comes to **Ecocentrism (Vn3)**, their values are less prevalent. It is said that they can be "borrowed" from alternative cosmovisions present in the Global South, more spiritual. These values are perceived as closer to paths of sustainability, and awareness is raised of the fact that "*emancipatory projects that overlook the non-anthropocentric point of views, and do not aim at inter-species emancipation, might achieve a short-term success*". All in all, this calls for a push beyond human interests to navigate just transitions, where indigenous cosmologies are perceived as relevant in attempts to be more sustainable and less 'anthropocentric'.

Less prevalent discussion around Nature

Regarding the **Spiritual HNR (HNR5)**, mentions are scarce. When present, they do not intend to refer to organised religions but rather possess "some kind of respect for Nature" also understood as "reverence". Moreover, if we were to value what we obtain from Nature through a spiritual lens,

this, as stated, could "*prevent us from over-exploiting or contributing to the ecological crises*". But these conceptualisations of HNR as "spiritual" do not go any further.

Even less developed and briefly mentioned, is the notion of **Human-more-than-human alliances (HNR6)**. This is not explained further, although they are mentioned along an idea of 'multispecies democracy' that takes no concrete form.

5 Discussion

In this discussion, I will first compare the differences and similarities between the Growth and Degrowth worldviews, to try and discuss how different they are. Then I will compare the identified HNRs with those already present in the literature. After that, I will discuss the particularity of the Commons subset worldview as a potential avenue for the emergence of new, alternative HNRs. Finally, I will discuss how HNRs have been tried to be linked to behaviour, and how social movements could be agents of change for enacting alternative HNRs.

5.1 Growth against Degrowth

Through the first part of the results section, I have presented the Growth and Degrowth worldviews as laid out in the Conference. This is because their understandings of Nature, values ascribed to it and HNRs are difficult to fully grasp when disaggregated and studied in isolation from the worldviews they form part of.

The first difference is that, in the Growth worldview, Nature is global, whereas in Degrowth there is a strong affinity to making the Nature to which people relate to be the one closest to them, i.e. their local one. Because the way Nature is valued in both worldviews also stems from different positions —Growth in Anthropocentrism and Degrowth between Biocentrism and Ecocentrism— they present different ways in which they want to measure Nature. Finally, Growth worldviews seem to reproduce Mastery over Nature narratives, while Degrowth finds itself conflated between many of the other HNR types, without having a clear, defined one.

5.1.1 Global and local Nature

The extractivist nature identified within Growth allows for Nature to be distributed around the world and be consumed. Through consumption, this Nature is not experienced as it should be, because it has been dislocated from its place of origin as well as being processed to be a product to be consumed. It is also the main medium of interaction with Nature. Degrowth opposes these global supply chains and proposes a relocation of human interaction with Nature to be as localised and contextualised as possible, only moving outwards to meet basic needs when necessary.

Within this scalar approach, the concept of waste gains much relevance. Waste is approached in the conference and identified within extractivist processes, as a result of the end of consumption that is shifted back again where the resources have been extracted, further harming the human societies

located at that end and polluting Nature. This is specifically important for the electronic and mining industries.

Through localism, a different knowledge of Nature can arise, one that is more intimate and knowledgeable about 'natural processes', also allowing a direct connection with the local biophysical state that is not possible only through quantifiable measurements. These different knowledges seem to be able to arise when Nature is managed collectively as part of the 'commons'. This would contrast with notions of Nature that needs to be left untouched, which is present in some ecological preservation and restoration approaches (Hertog & Turnhout, 2018).

5.1.2 Values of Nature

The Growth worldview is clearly *Anthropocentric* in its view of Nature. It regards it as part of a pool of resources and it is used to fulfil the aims of economic growth, productivity and desire. Through the iteration of green growth, GHG emissions try to be solved through technological solutions, while certain areas of Nature can be preserved or protected, with these actions serving the purpose of maintaining the current processes of the Growth economic system.

Degrowth, on the other side, seems to not hold a specific value of Nature and is conflated with a seemingly weak or strong *biocentrism* at times, while calls for *ecocentric* perspectives are raised. As already addressed throughout the results section, when addressing Nature together with Planetary Boundaries, the reasons to not exceed limits are primarily rooted in the need to sustain the well-being of human societies, while Nature is considered secondary. Other times, either within the commons or as lone statements, human societies and Nature are put at the same level, with key questions about justice for Nature being raised and "environmental flourishing" being pursued together with a high quality of life. The notion of environmental flourishing is particularly relevant because there is a difference between recognising that Nature has an intrinsic value in existing and wishing for its flourishing (McShane, 2017). All in all, there is not a unified value ascribed to Nature, whereas many aspects are left unaddressed, which could be problematic for the justification of the stances of the movement.

5.1.3 Indicators

Moving along the antagonism that Degrowth seeks against Growth, there is also a sharp contrast between the indicators that both worldviews regard as valuable. While the latter values economic growth as measured in GDP increase, Degrowth vouches for an economic reduction. This does not necessarily have to mean that a decline in GDP is inherently good. It is repeated throughout the

conference that some sectors need to grow, such as health, education, and democratic institutions, which would be measured through different indicators that take into account human well-being and not material increase. At the same time, indicators that monitor planetary boundaries would also be used to make sure that the life-supporting systems of Earth are stable.

Nonetheless, while a shift in indicators is imperative to deal with current crises as reflected in the conference, there is also caution against simply reducing matters to measurements. Green Growth is recognised as having introduced other sets of indicators that are not purely economical, but these are not enough, as there is a latent danger in indicators. For example, GHG emissions are said in the conference to be easily monitored compared to biodiversity indicators, which is believed to establish a hierarchy where action is preferred in issues where easily quantifiable measures are available.

Having said that, indicators in both cases appear *anthropocentric*. They aim at achieving the well-being of human societies, although this well-being is perceived differently and reached through different means. While planetary boundaries have indicators targeted at monitoring Earth systems, this monitoring is premised upon the need to maintain the stable Holocene for human societies to thrive, whereas Nature tends to appear as secondary when the concept of planetary boundaries is summoned.

5.1.4 Domination and Partner with Nature

The Growth worldview as requiring a 'domination' of humans and Nature is viewed as a given and its characteristics are not explored in the conference. Established not only on Nature but also on other humans, it is seen as inherently damaging to Nature, portraying humans as being superior to it. In this sense, it is fairly similar to the 'Mastery over Nature' that seems to permeate modern Western societies. Nonetheless, 'Mastery over Nature' has been usually referred to as the notion that humans, as a whole, are above Nature and need to intervene in it to provide order and benefit from its resources (Muhar & Böck, 2018; Van Den Born, 2008) and this term has been firmly rejected individually across many studies (Duong & van den Born, 2019; Groot & Born, 2007; Van Den Born, 2008). 'Domination of Nature', then, reflects a more collective experience on how societies more broadly come to master Nature, reflecting this tension between the personal and the social.

When it comes to Degrowth, care for Nature and aiming for its well-being are objectives that are mentioned within Degrowth values. There are also propositions for including Nature in legal systems, forming human and more-than-human alliances (e.g. multispecies democracies) and fostering equity within human societies but also for Nature. This seems to approach a certain 'Partnership with

Nature', where humans are of equal value as Nature (Van Den Born, 2008). But several nuances can be further drawn. Sometimes this care is first addressed to humans, then as a secondary necessary step towards Nature, which seems to entail weak *biocentrism* perspectives, because humans are put first above Nature while still there is care for the latter.

Moreover, there is also a prevalence to talk about Nature as part of a pool of resources, that are necessary for human's well-being. This is predominant when talking within the framework of planetary boundaries, where biophysical systems are regarded as critical not because they have intrinsic values, but because are crucial for provisioning systems. Thus, referring to Nature as just a resource is similar to Spash's (2021) critique of defining Nature as just another type of capital, only important when beneficial for humans. This resonates with the User type of HNR, which is paired with Ecosystem Services where Nature is only valued concerning how it benefits humans. Moreover, this position has been defined as *anthropocentric* and utilitarian (Flint et al., 2013).

5.2 New HNRs could open possibilities for new Nature(s)

What is Nature for the Degrowth movement? From what can be grasped in their last conference, this question remains unclear. While some of their stances are clearly antagonising Growth and the processes that involve interacting with physical environments, it is not at all clear if their views of Nature are that much different from the system they seek to oppose. Their proposals of arranging society within Planetary Boundaries and around the commons can be considered alternative ways of living, but it is not certain that they contain different understandings of Nature or other values only by themselves.

Nonetheless, they could open a different way of relating to Nature through practice. Because economic reduction and commoning entail radically opposed practices to those of everyday growth modes of living, they could open new HNRs in the making rather than applying a predetermined theory or concept into practice. To understand these opposed practices, I first need to compare how this notion of a 'global Nature' has been approached in other studies.

5.2.1 The problems of a global Nature

In his review of epistemologies of commodities and Nature within the Marxist field, Castree (2003) recognises that Marxists have been unclear about their understanding of commodities and Nature — a somewhat similar endeavour to that of this thesis— thus necessitating a categorisation of the use of those concepts from the field. Particularly relevant to this matter of engaging with new HNRs are two of his categories of commodification: *Individuation,* which refers to the "representational and

physical act of separating a specific thing or entity from its supporting context" and *Displacement,* "something appearing, phenomenally, as something other than itself. Put another way, it involves one set of phenomena manifesting themselves in a way that, paradoxically, occludes them" (Castree, 2003). These two types of commodification match the obscuration processes that extractivism and consumption act on Nature. Thus, breaking global unequal patterns and arranging Nature through the commons, as put forth in the Degrowth conference, could represent an opening for new concepts of Nature to appear through novel HNRs. Embracing different values of Nature could also happen when Nature is experienced more intimately.

This logic could also shed light on the mismatch between laypeople's visions of Nature as analysed by Van den Born et al. (2001) and ongoing global warming and environmental degradation. Van den Born et al. (2001) recognised a new 'biophilia' in laypeople's vision of Nature from Western societies, opposing assumptions that a paradigm of domination over Nature was prevalent in high-income countries. But the development of laypeople's values of Nature does not seem to have translated, at least not strongly enough, into further protection of biodiversity or reduction in GHG emissions (IPCC, 2023). This could be explained because of a tension between individual visions and systemic processes; if consumption occludes the degrading processes of Nature occurring at the production level, the individual is more easily prone to engage in practices that are harmful to Nature. This tension calls for further examination, exploring the relations between HNRs happening at individual, collective and systemic levels, as well as theories of power.

5.2.2 Commons, transitions, and contextually bounded Natures

Degrowth is identified as pertaining to the body of 'transition discourses' (TDs) that call for civilisational transformation (Escobar, 2015). One of the recurrent features within these calls is the critique towards the contemporary model of social life that has divided human and non-human domains (Escobar, 2015). As proposed solutions to this problem, bioregionalism and rootedness in place are also common answers within this literature (Escobar, 2015), which emphasises the possibility of Degrowth and the commons avenue together with localism. These relations to Nature through the interaction of the biophysical environments closest to us are part of Buen Vivir notions, which are identified within the Degrowth movement (D'Alisa et al., 2014). However, there are questions as to the extent to which Degrowth can emulate non-western epistemic practices embedded in other worldviews, which rely on local knowledges that are more integral to their transitional projects (Escobar, 2015).

Notwithstanding, if a transformation were to happen where notions of Nature were more locally and culturally located, which would emerge through 'commoning' practices, this could entail the creation of social-cultural concepts of Natures, in the plural. In a study tackling different epistemologies dealing with HNRs, this resonates with the identification of 'experience-based approaches' that explain that an ecologisation of practices can occur through experience (Magda et al., 2022). This would also represent an opening for finding solutions to the theoretical tension between Nature as being a socially constructed concept and the materialities of different Natures. While Nature can be recognised to be a concept that has historical, cultural and contextual specificities, it cannot be regarded as purely theoretical, as different manifestations of Nature through different elements (e.g. air, water, land, and so on) possess material concretions that affect the world in different ways (Castree, 2003). This argument could help dissipate confusion around the general concept of Nature, although not its complexities.

This would entail that Degrowth would be a movement of worldviews in the plural, where worlds would be rooted in the commons, in syntony to what others have identified as the 'communal', as relational worlds that are not only understood as 'cultural' but even ontological (Escobar, 2015). This could be an avenue into breaking identified modern dualisms —the Nature-culture or human-Nature— as the most relevant ones for us in this study towards more relational realities, known as pluriverse (Escobar, 2015).

5.3 Present and future: how can other understandings of Nature influence behaviour?

The literature focusing on HNRs is mostly targeted at the individual level (Muhar et al., 2018; Braito, 2017) and aims at improving conservation efforts, the management of a particular biophysical system, or both (Lema et al., 2023; Van Den Born, 2008; van Riper et al., 2019). In this sense, studying a social movement, which in this case strives for broader, socio-ecological transformation, is a novel approach for the HNRs field.

While I have identified alternative HNRs that could align with the movement's purposes, to reach and materialise them requires different efforts. Some studies have empirically linked people holding certain perceptions of HNRs to more sustainable behaviours at local levels (Braito et al., 2017; van Riper et al., 2019) but connecting those individual perceptions to changes at social scales remains a challenge. As such, the tension identified in the introduction between the personal and the social sphere remains unresolved (Muhar & Böck, 2018).

Muhar et al. (2018) devised an add-on module aimed at complementing current frameworks designed to analyse human-nature interactions when managing particular biophysical systems. This model was brought forward to make up for the lack of consideration of socio-cultural concepts in those frameworks. Nonetheless, it was ideated to comprehend worldviews, beliefs and values that were already held by the people involved in the management of those systems or affected by them, without which certain policy designs or managerial arrangements could fail in their attempts at improving those biophysical environments (Muhar et al., 2018). But the question of how to change people's perception of Nature to allow for those possible, more sustainable interactions was not tackled.

Some new avenues for researching how new perceptions of HNRs emerge or change could direct their attention to 'human-human relationships' (Flint et al., 2023). Flint et al. (2023) discussed how good human-human relationships in management processes and communities adopting healthy HNRs while they collaborate and share together were ultimately more important than initially held HNRs. Arriving at a similar conclusion through an inverse direction, other studies found that, despite people recognising intrinsic values of Nature or perceived positive HNRs, they contributed to harmful impact on their biophysical environment because they were not included in the decision-making processes regarding their managements (Lema et al., 2023; Van Den Born, 2008). Moreover, if social movements are regarded as places where prefigurative politics or social arrangements happen, they could be appropriate objects of study for analysing how new perceptions of Nature and HNRs can arise through constant practice and interaction (Hernandez, 2018). Movements like Degrowth, that are already containing the seeds of alternative HNRs, could benefit from studies like this, to go a step forward between theorising and realising the changes that are seeking.

Lastly, studying social movements as alternative worldviews that could lead to different behaviours would be beneficial to better understand their role as agents of change and enact, not only think about, different HNRs. Studies such as the one carried out by Hedlund-de Witt et al. (2014) would be a good starting point. They explored worldviews and their relationships to more sustainable lifestyles at the individual level through an Integrative Worldview Framework (IWF) (Hedlund-de Witt et al., 2014). If this framework could be applied or adapted to analyse the construction of collective worldviews, such as the ones that could be found within Degrowth, that would lead to more sustainable behaviours towards the environment, more insights into how societal transformation can occur could be drawn.

6 Conclusion

Ultimately, the goal of Degrowth is to transform societies towards what they regard as more sustainable futures. For them, this entails a shift in behaviour at the individual but also at the social level (D'Alisa et al., 2014). In this thesis, I have studied this social movement's worldviews through the lens of HNRs to try to define how such alternative behaviours could look like, but the question of how this change could happen remains unanswered. Nonetheless, although the movement should be wary of reproducing 'Mastery over Nature' narratives, especially when treating Nature only as a resource, there is also potential within Degrowth to create alternative HNRs through a more local, intimate knowledge of Nature. The complex and dynamic nature of socio-cultural concepts allows for contradictions and overlaps, but the practical knowledge that emerges from enacting alternative HNRs could provide a clearer route for the movement and socio-ecological transitions.

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Appendix

Table A.1. List of statements that reflect all the concepts extracted from the data. (Continues next page)

Type of concept	Concepts	Statements
Worldviews (W)	Growth **(W1)**	*" The extraction of energy and materials to sustain the sustainable endless **Growth** (…) while ecosystems are being devastated."*
	Green Growth **(W1.1)**	*"The most important one in this context is that it relies on the paradigm of **green growth**, which implies that new technologies and re-direction of financial flows will be sufficient to deliver a sustainable future for European citizens."*
	Degrowth **(W2)**	*"**Degrowth** encompass all the measures that economically and politically organize the way out extractivism, productivism and consumerism."*
	Commons **(W2.1)**	*"**Common**s as a category recognizing the interdependence with more than human or all non-human beings out there that we are drawing from how do we live well."*
	Planetary Boundaries **(W2.2)**	*"We need to reduce resource use science says that we very probably need to degrow the economy because growing the economy and trying to do what we're doing what we need to do in terms of remaining within **planetary boundaries"***
Contextual Elements (C)	Neo-colonialism **(C1)**	*"Challenging economic **Neo-colonialism** operated in a space that increasingly focused on planetary limits to growth and the ecological impacts of multi-national corporations"*
	Extractivism **(C2)**	*"We can speak about Neo **extractivism** Etc the question is what is going to happen so in this transition where are the minerals and metals coming from so if you are going to say this is Neo extractivism who's going to own those resources who's going to benefit from those resources."*
	Relations of Domination **(C3)**	*"Growth and "it's world", based on **domination** over nature, women and the global South"*

Table A.1. (Continuation) (Continues next page)

Type of concept	Concepts	Statements
Values (V)	Money **(V1)**	*"We need an economic system in which the key drivers have changed have got to be things which are not measured by **money**"*
	Care **(V2)**	*"**Caring** societies prioritise the well-being of all beings, including humans, non-humans, and nature"*
	Equity **(V3)**	*"The concern for others - intra and intergenerational **equity**"*
Values of Nature (Vn)	Anthropocentrism **(Vn1)**	*"non-**anthropocentric** degrowth policies and practices may be informed by various indigenous cosmologies, which have seldom been 'anthropocentric', and less prone to colonize the Earth".*
	Biocentrism **(Vn2)**	*"it's coming back to the human what works for humans what delivers life for humans care for humans and care for the planet"*
	Ecocentrism **(Vn3)**	*"However, it still needs to embrace spirituality and a truly **ecocentric** worldview, borrowing from alternative cosmovisions from the Global South."*
Beliefs (B)	Economic Growth **(B1)**	*"It is questionable how much **economic growth** has managed to increase our well-being in developed economies in recent decades."*
	Development **(B2)**	*"Building peace that is coherent with planetary and ecological limits (…)necessitates breaking with the extractivist model of **development** that benefits growth and accumulation over people's wellbeing."*
	Decoupling **(B3)**	*"Growth proponents argue that new technologies, with proper market incentives and technocratic regulation, will allow for a sustainable expansion of the ocean economy, further **decoupling** environmental impacts from global economic growth"*
	Localism **(B4)**	*"They foster degrowth by supporting the re-**localization** of supply chains and policy processes. The goal is to capitalize upon **local** resources to arrest and reverse the loss of the capabilities"*

Table A.1. (Continuation) (Continues next page)

Type of concept	Concepts	Statements
Norms (N)	Consumerism **(N1)**	*"Question the capitalist common sense in which abundance and well-being are seen as achieved through high levels of **consumption** and production."*
	Profit **(N2)**	*"The problem is we have finance for finance so it's **profit** maximization that has little to no economic output or input"*
	Sufficiency **(N3)**	*"Commoners collectively self-limiting their consumption to ensure **sufficiency** for all"*
	Needs **(N4)**	*"Sufficiency-oriented production and consumption practices exist to satisfy universal human **needs** instead of superfluous consumer wants."*
	Usership **(N5)**	*"is a relation of non-ownership a relation a relation of **usership"***
What is Nature (Nt)	Nature as a Resource **(Nt1)**	*"this issue of constant economic growth within the limited **natural resources** is it possible what kind of what kind of problems it makes"*
	Humans separated from Nature **(Nt2)**	*"We need climate action but don't come with your biodiversity and resources thing come on we've already accepted enough you know it's already hard enough for companies to make a living"*
	Immaculate Nature **(Nt3)**	*"connected to the European Romanticism of **Immaculate untouched Nature** you know that that has not in fact disappeared"*
	Interdependence with Nature **(Nt4)**	*"recognizing the **interdependence** with more than human or all non-human beings out there that we are drawing from how do we live well within the commons that we draw from what do we give back"*
	Nature as limited **(Nt5)**	"This issue of constant economic growth within the **limited natural resources** is it possible what kind of what kind of problems it makes this kind of systemic approach"

Table A.1. (Continuation)

Type of concept	Concepts	Statements
Human-Nature Relationships (HNR)	Global Nature **(HNR1)**	*"Beginning your consumption there and only moving outwards when that's absolutely required so it's kind of the opposite of **a global Supermarket**"*
	Domination of Nature **(HNR2)**	*"How can we learn to step out of our anthropocentrism, our speciesism and relate to the living network of life without the ever-present **domineering** approach?"*
	Consumption of Nature **(HNR3)** / Sustainable Consumerism **(HNR3.1)**	*"The way we consume the way we interact with the world through our economic consumption" / "That is possible to make production consumption sustainable while maintaining economic growth"*
	Nature as commons **(HNR4)**	*"Commons as a category recognizing the interdependence with more than human or all non-human beings"*
	Spiritual Nature **(HNR5)**	*"What Nature's giving you and having that sort of real fundamental sense of the value that that's bringing you in some spiritual sense"*
	Human-more-than-human-alliances **(HNR6)**	*"Human-more-than-human alliances, contradictory or conflictual relationships, as well as question their potential for building multispecies democracies."*