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Enlisting Biodiversity: Steering Public Discourse to Win Support for Policies on Biodiversity Challenges

RESEARCH ARTICLE

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ABSTRACT

Discourses are linguistic expressions of socially constructed understandings of phenomena, which drive power dynamics by implicitly conveying values that may either support or suppress the interests of involved actors. Proponents of specific discourses often seek to establish their interpretation of a phenomenon as the predominant or sole narrative with the aim of furthering their own interests. This is particularly concerning when applied to complex public issues, such as biodiversity loss, in a post truth age in which alterative facts and misinformation can shape public debate and social perceptions more powerfully than objective evidence or rational argument. This paper examines how interest groups perceive and communicate about biodiversity, which sheds light on the underlying worldview, interests, and strategies behind their messaging. We examined documents from two biodiversity-relevant actor groups in Europe: political parties in Italy, Switzerland, Norway, and Austria; and environmental NGOs in the United Kingdom, Switzerland, and Norway. Text elements within the documents were categorised according to their rhetorical functions, including 'warning', 'calling for action (or inaction)', 'informing', 'persuading', 'accusing', 'entertaining', 'othering', and 'raising hope'. The analysis reveals that political parties predominantly employ a rhetoric centred on 'persuading', 'accusing', and 'othering', aiming to rationalise and gain political support their stances and/or to assert themselves as solutions to biodiversity challenges. Environmental NGOs, on the other hand, use rhetoric focussed on 'informing', 'warning', and 'persuading', with consequences of action or inaction often linked to human impacts, to appeal to potential and actual supporters of their activities. These findings reveal the strategic use of biodiversity discourse by different actors to influence their targeted audiences, which provides insights for those interested in creating interventions to influence stakeholder perceptions and behaviours.

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INTRODUCTION

Our planet Earth harbours a unique abundance of life with millions of species. However, alarming and continued loss of biodiversity now threatens both the biosphere and human life through failures in fundamental ecosystem service delivery, such as climate change mitigation and basic materials for food and medicine (Cardinale et al., 2012, Isbell et al., 2023). Johnson et al. (2017, p.270) point out that "extinction has always been a feature of life on Earth, but the domination of global ecosystems by people has caused a sharp rise in the rate of extinctions to far above pre-human levels". Almost 20 years ago, Diaz et al. (2006) explained that biodiversity loss threatens continued human existence, but overexploitation of natural resources and intensive agriculture – the major direct drivers of biodiversity loss – continue unabated: bolstered by inept governance with diverse worldviews and societal values maintained by interlocking power systems mediating the global social-economic dynamics (IPBES, 2019). Dasgupta (2023) place the blame for biodiversity loss on flawed economic reasoning in which biodiversity is the victim of vested interests and political pressures to deliver on a narrow set of economic metrics (OECD, 2017). Put simply, the arguments that biodiversity loss is primarily anthropogenic are overwhelming, which implies that measures to protect remaining biodiversity, along with remediation of biodiversity loss, also lie in human hands.

The issue of biodiversity loss, like most environmental issues, is complex, with many associated factors including habitat destruction and degradation, agricultural intensification, climate change, urbanisation, pollution, and introduced species, and is interconnected with all facets of modern life (Wagner, 2020). To deal with complex issues, humans tend to build their own understanding of a situation and try to make meaning of things (Dryzek, 2005). These meanings are socially constructed and expressed in language as discourses. A discourse contains "representations and systems of meaning" (Howarth, 2010, p. 311), is intersubjective, and reproduced and transformed by those who subscribe to it. Therefore, discourses are highly dependent on the context and subjective experiences of their meaning-making actors (Dryzek, 2005). Analysing discourses provides insight into how a group of people understand a certain issue and reveals a common worldview, the values and often beliefs that are attached to the problem, and potential solutions (Adger et al., 2001; Dryzek, 2005, Dryzek, 2013). Therefore, discourses can motivate and coordinate the actions of large groups of people who subscribe to a shared understanding of the world. Thus, societal actors who control the discourse have considerable power in how society functions.

Discourses matter because they embody power relations by implying values and thereby can support or suppress the interests of actors (Foucault, 1980). Proponents of discourses strive to make their understanding of a phenomenon the dominant story, or the only true story, the latter being known as discursive hegemony (Hajer, 1995). When discourses become dominant, their understood power relations manifest in the real world through structuration and institutionalisation. Structuration describes the process in which a certain phenomenon, and how it relates to the world, is repeatedly conceptualised in the same way, such as the reference of biodiversity as ecosystem services. Institutionalisation happens when understandings are further manifested in laws, policies, or institutions (Hajer, 2006). The availability of discourses in society influences our perception of what is possible and acceptable, so control of societal discourse means control over how resources are allocated in society (Spash and Aslaksen, 2015).

Therefore, organisations that are interested in influencing the quantity of resources allocated to biodiversity conservation, such as environmental NGOs and political parties, also have an interest in influencing the societal discourses on biodiversity. Three dominant social discourses in which biodiversity is understood, valued, and managed are: Resource Management and Utilitarian Discourse, which views biodiversity primarily as a resource to be managed and conserved for human benefit (Muradian & Gomez Baggethun, 2021); The Scientific and Regulatory Discourse, which frames biodiversity as a scientific object, emphasizing measurable indicators and regulatory frameworks and treats nature as a system that can be managed and engineered (Pierce et al., 2020), and a Discourse of Intrinsic Value, which stresses the inherent worth of non-human life, and the need for equity, inclusion, and justice in conservation (Lenzi et al., 2023). However, how these discourses are utilised and/or operationalized by interest groups remains largely unexplored in the scientific literature.

With this analysis of the societal discourse on biodiversity, we aim to gain an understanding of how different social groups perceive and communicate about biodiversity, the worldview this implies, and how perceptions, communication, and worldviews intersect with values. We investigate whether the term biodiversity is understood in the wider community and whether lack of understanding may leave the term open to use, or perhaps abuse, by groups of interested actors to further their agendas. We hypothesise that the language used in the biodiversity discourse can be chosen by actor groups strategically with the intention of controlling the discourse and thereby persuading an audience to support their opinions on biodiversity, such as by donation or voting,

or to justify or explain their own action or inaction and consequent biodiversity outcomes. To address these aims, we take a case study approach (Yin, 2018) and conduct a rhetorical analysis of materials produced by two different biodiversity-relevant actor groups in Europe: political parties and environmental NGOs.

CONTEXTUAL BACKGROUND

System-wide transformative changes are needed, including altering paradigms, behaviour and values (IPBES, 2024). An anti-interventionist discourse prevails in the discussion about protected areas or conservation. Its proponents argue that any interference of humans in nature is inherently harmful and emphasise the preservation of "untouched" nature (Berry et al., 2018; Steinwall, 2015), proposing that nature should not be "disrupted" (Howard et al., 2018). Whereas anti-interventionist arguments are convincing for conservation, they appear inadequate to remedy the significant damage that has already been done to nature. To remedy such damage, an interventionist perspective argues that human interference is necessary to protect and enhance biodiversity. Examples of interventionist language include describing humans as "ecosystem engineers" (Bredin et al., 2015) and "ecosystem and biodiversity management systems" (van den Burg & Bogaardt, 2014). The interventionist discourse includes arguments that the public pressure to address biodiversity loss has been ignored by government and business circles and call for corporate responsibility (van den Burg & Bogaardt, 2014).

Johnson et al. (2017, p.270) observed that "responses to biodiversity decline are being more than offset by rising pressures, related ultimately to increasing human population size and per capita consumption." Dasgupta (2023) argue that economic arguments are not *per se* at fault but rather see the problem that contemporary economic thinking does not acknowledge that the human economy is embedded in nature: a recognition that ought to be heeded when managing global public goods such as the open seas and tropical rainforests. Others argue that the use of business language referring to biodiversity as a management issue is inherently problematic (van den Burg & Bogaardt, 2014). However, Johnson et al. (2017) point out that policy responses and actions tend to address processes individually, so are rarely appropriately scaled to the pressures that produce large and accelerating combined impacts as interactions and synergies amplify their effects. So, effective action requires both an understanding of what is needed (Yanou et al., 2023) and the allocation of resources to undertake such actions, but funding for global conservation has proven inadequate (Johnson et al., 2017).

The principle of financial inclusion (Ozili, 2020) suggests that public money should be available to conserve a public good upon which we are all dependent for our survival, such as biodiversity. However, the scarceness of resources and ever-louder calls for austerity mean that public money in democratic societies is likely to be allocated where the public perceives the greatest need. Despite mounting scientific evidence on the importance of biodiversity for ecosystem functioning and international processes calling for more action to tackle biodiversity loss, such as Target 14 of the Kunming–Montreal Global Biodiversity framework, which demands that biodiversity is fully integrated into policies, regulations, and processes across all levels of government (CBD, 2022), biodiversity is still low on the political agenda (Mace et al., 2018). Consequently, uptake of biodiversity in public policy remains very limited (Bouwma et al., 2018). Biodiversity conservation is rarely mainstreamed into societal economic and social planning or human behaviour and is often marginalised with poorly funded NGOs reacting to threats generated by other, more powerful, sectors such as transport and agriculture (Johnson et al., 2017). If adequate resources are to be channelled into stopping biodiversity loss, the public must be engaged, which implies the need to promote a discourse of biodiversity conservation.

BIODIVERSITY DISCOURSES

Utilitarian discourse

A common approach to motivating public engagement is with the resource management and utilitarian understanding of biodiversity, which is deeply anthropocentric and puts human benefit at the centre of the biodiversity discourse (Huge et al., 2017). The core of this discourse lies in the idea that natural resources are to be utilised for economic development believed to be of utmost benefit to humans. This discourse is prolific and recurrent and commonly reduces biodiversity to its economic value in terms of its potential to generate income. This was expressed not only by forest owners in Finland (Takala et al., 2019) but also by nature conservation professionals in Poland (Blicharska & Grandin, 2015). Despite the ubiquity of the economic valuation of biodiversity, ecosystem services are also commonly related to the social and physical well-being of individuals and society, such as providing opportunities for recreational activity, new drug development or as educational material (Berry et al., 2018; Carmen et al., 2018; Howard et al., 2018; Primmer et al., 2017). Indeed, this utilitarian value of nature has allowed biodiversity to gain traction in political decision-making with (Brunet et al., (2020, p. 1661) identifying anthropocentric benefit from four utilitarian values: namely "economic (distinguished as natural resource outputs (e.g. agriculture, forestry,

commercial hunting and fishing) and tourism), aesthetic, historic, and educational"

There are three sub-categories of the utilitarian discourse: sceptical, economic modernization, and scientific. The sceptical discourse refers to Chalaye's (2022) "ecological urgency scepticism" pointing to economic agents' efforts in denying the urgency of biodiversity conservation, which is echoed by forest owners (Takala et al., 2022). This branch of biodiversity discourse includes accusations that conservationists spread erroneous information and claims that protected species are a "nuisance" (Takala et al., 2022) and detrimental to the economy, as they constrain the full potential of the market" (Chalaye, 2022). This sceptical discourse has gained support in public opinion (Takala et al., 2022) as utilitarian arguments that value biodiversity in terms of what it can give to people are more attractive for many people than arguments for the intrinsic value of biodiversity, which often call for compromises or restrictions to stop species loss (Troumbis & Zevgolis, 2020).

The utilitarian discourse has been criticised as amounting to "hegemonic capitalism" (Borie & Hulme, 2015) in which biodiversity is considered to be a public good that is free to exploit. Several authors point out that species that are considered to have little economic value are at risk of being deprived of protection, or even actively eliminated, if they are assessed as being harmful to economic outcomes (Kusmanoff et al., 2017; Turnhout et al., 2013). Another criticism of the utilitarian discourse is the issue of "biopiracy", which is defined as "the commercial collection, development and patenting of modern medicines from biodiversity and traditional knowledge in the South" (Adger et al., 2001).

The scientific discourse revolves around the value of biodiversity for scientific knowledge (Blicharska & Grandin, 2015; Howard et al., 2018; Lee et al., 2021). Although, this discourse is in many ways a branch of utilitarian discourses, the value of knowledge for the sake of knowing is what distinguishes this discourse from the latter. In analysing political speeches, Lee at al. (2021) reveal how nature was viewed as a "repository of scientific knowledge" (p. 7) in the context of examining fireflies' use of energy. Scientific biodiversity discourse has been seen as neutral, evidence-based, and universal (Turnhout et al., 2013); granting it an advantage in influencing policies. An example for this argument is the Nature Index in Norway (Spash & Aslaksen, 2015). The scientific approach claims to provide "objective truth, separation of facts from values, and designation of expert judgement as independent from political process" (Spash & Aslaksen, 2015, p. 247). However, the scientific approach dismisses biodiversity's normative character (Jetzkowitz et al., 2018) as well as the effect of science on policy formation (Turnhout et al., 2013; Primmer et al., 2017).

Intrinsic value discourse

A less prominent, yet value-laden view of biodiversity, is the view of nature having intrinsic value (Berry et al., 2018; Borie & Hulme, 2015; Brunet et al., 2020; Carmen et al., 2018; Lee et al., 2021; Spash & Aslaksen, 2015). This stands in contrast to the scientific and utilitarian discourses as it does not objectify nature and gives value to nature and its biodiversity without being subjected to humans. Mattijssen et al. (2020) adds relational value, related to the interaction of humans with nature, in addition to the intrinsic value of biodiversity assumed by active citizens. Interestingly, this discourse is more prominent in policy documents than in the scientific discourse, which was noted by Aggestam (2015) and demonstrated by Anquet & Girard (2022).

The intrinsic value of nature morally obliges humans to preserve biodiversity (Mitchell, 2016) as an obligation to future generations (Blicharska & Grandin, 2015). Proponents of the obligations discourse point out that humans are not entitled to make decisions about the life of other beings in nature. Anchored in morality, this discourse also entails religious beliefs and ethics that highlight the obligations to other people (Howard et al., 2018). Gustafsson (2013) points out that the moral obligation towards biodiversity preservation is one of the three most prevalent biodiversity discourses; the other two being nature as an object of knowledge (science-centred) and as a resource for society (anthropocentric). Nature's dependence on humans further highlights the obligation of humans towards biodiversity preservation (Drury et la., 2022). However, this anthropocentric stance has been criticised as supporting the arguments of those who propose that technological advancements, as opposed to natural methods, provide the solutions to halt biodiversity loss (Drury et al., 2022).

To stimulate action to halt the loss of biodiversity, alarming terms and metaphors are used. The term 'ecological collapse' (Chalaye, 2022; Valiverronen & Hellsten, 2002) gives a sense of urgency to halt the loss of biodiversity. While the uptake by civil society has been effective, it has had little effect on governmental policies: at least in the French political context (Chalaye, 2022). On another note, metaphors such as burning the library of life (Valiverronen & Hellsten, 2002) have been used in the holistic discourse to stimulate biodiversity protective action. Such metaphors assume the intrinsic value of nature, but position humans as agents responsible for the collapse and capable of amending, or at least preventing, further biodiversity loss.

Utilitarian morality, on the other hand, refers to the moral obligation towards biodiversity because of the benefits of biodiversity for humans (Muradian & Gomez, 2021). The utilitarian discourse stipulates the anthropocentric view of nature as a provider for human needs that we must protect

so that it can keep giving. The "othering" of humans is viewed as separating humans from nature, while simultaneously placing humans at the centre of the biodiversity discourse (Olaussan & Uggla, 2019). This stance has been likened to the morally indefensible recommendation put forward by a Jesuit priest regarding the treatment of slaves, which was not to hit the slaves when one is angry as this could render a slave useless (Muradian & Gomez, 2021).

Political obligations towards biodiversity stem from the argument of rights of nature and include recognition of the rights of indigenous populations whose cultural identity and values are closely connected to nature. For governments, institutions, and individuals, policies and actions to preserve biodiversity can be seen as an opportunity to gain popularity and claim national or global leadership (Carmen et al., 2018) or to enhance their reputation (Howard et al., 2018). The "solidarity with nature" discourse goes along the rights discourse by pointing to the indigenous people's identity and cultural embeddedness in nature (Anquet & Girard, 2022). Similarly, ecological solidarity "considers human emancipation and healthy ecosystems as interdependent" (Chalaye, 2022, p. 2) with the goal of strengthening this relationship (Chalaye, 2022; Primmer et al., 2017). In this discourse, the social, cultural, and health-bestowing values of biodiversity is emphasised (Chalaye, 2022; Primmer et al., 2017). Cultural heritage values, social relations, cultural diversity, and sense of place were some of these interconnections that have been pointed out (Serrano et al., 2019).

METHODOLOGY

We apply a rhetorical analysis approach, which provides a structured way of identifying the values and rhetoric functions that are expressed within the texts that are analysed (Gee, 2011). Rhetorical analysis examines how language is used in texts to achieve specific communicative purposes, such as persuasion, warning, or influencing. which we refer to as "rhetoric function" (Lönngren & van Poeck, 2021), and how the actor groups enlist values to enhance the functions. The rhetorical analysis approach is located within the area of critical discourse analysis, which incorporates rhetorical analysis to uncover how language is used to construct power dynamics and social relations through rhetorical strategies. CDA looks at how texts use rhetorical function in the service of larger ideologies or interests (Wooffitt, 2011). Similar to other critical discourse approaches, rhetorical analysis emphasises the practice-related quality, the context dependence, and the constructed as well as constructive character of discourses (Haas and Flower, 1988). This approach contests the idea of an objective and neutral science and rejects the idea that it can be value-free (McCormick, 2007).

When considering societal discourse on biodiversity, it is important to remember that Europe is not homogenous but rather contains a wide variety of cultures who may understand, and use, the term 'biodiversity' differently, so we differentiate our analysis between four European countries: Italy, Switzerland, Norway and Austria for the analysis of the publications from political parties, and three countries: Switzerland, Norway and the UK for the analysis of publications by NGOs. These countries were selected because they are all liberal democracies, which implies that there will be openness in the competition by interest groups to establish the dominant discourse (Hajer, 1995) and there were partners from these countries in the Horizon Europe project: PLANET4B who were able to collect and deliver data.

IDENTIFYING ACTOR GROUPS TO UNDERSTAND BIODIVERSITY DISCOURSE

Choosing actor groups for in-depth analysis was based on the 'fields of interest' (Reisigl, 2017), with the final selection guided by the perceived relevance as a reflection of societal interest and/or the potential influence on the societal discourse on biodiversity. Reisigl's (2017) fields of interest include:

- Discourse and politics/policy/polity, which we address by analysing the use of discourses by political parties in Italy, Switzerland, Norway, and Austria.
- Discourse and identity, which we address by analysing the discourses used in publications by environmental NGOs in Switzerland, Norway, and the UK.

We acknowledge that there are other fields of interest, such as 'discourse and technical language', and 'discourse and history' (Reisigl, 2017), but these were deemed to be less relevant to how the concept of biodiversity is included in the societal discourse.

DATA COLLECTION: POLITICAL PARTIES

The analysis of political party documents was carried out for four countries: Austria, Italy, Norway, and Switzerland. Firstly, the five national political parties that received the first through fifth highest proportions of votes in the last national elections were selected (shown in Table 1). A Google News search of each party's website was conducted using the search command "biodiversity site: www.PartyName.com" or "biodiversity site: PartyName.com". In countries, where several words are used for the concept of biodiversity such as in Austria with the terms "Biodiversität" and "Artenvielfalt", the search command was adapted

COUNTRY	PARTY NAME	ENGLISH NAME	PARTY FAMILY
Austria (AT)	Die Grünen	The Greens	Green/Ecologist
	Freiheitliche Partei Österreichs (FPÖ)	Freedom Party of Austria	Right-wing
	NEOS	NEOS – The New Austria	Liberal
	Österreichische Volkspartei (ÖVP)	Austrian People's Party	Christian democratic
	Sozialdemokratische Partei Österreichs (SPÖ)	Social Democratic Party of Austria	Social democratic
Italy (IT)	Fratelli d'Italia	Brothers of Italy	Right-wing
	Partito Democratico	Democratic Party	Social democratic
	Movimento 5 stelle (M5S)	Five Star Movement	No family
	Lega per Salvini	League for Salvini	Right-wing
	Forza Italia	Go Italy	Conservative
Norway (NO)	Arbeiderpartiet	Labour Party	Social democratic
	Fremskrittspartiet	Progress Party	Right-wing
	Høyre	Conservative Party	Conservative
	Miljøpartiet de Grønne (MDG)	Green Party	Green/Ecologist
	Senterpartiet	Centre Party	Agrarian
Switzerland (CH)	Die Mitte	The Centre	Christian democratic
	Freisinnig-Demokratische Partei (FDP)	Free Democratic Party of Switzerland	Liberal
	Grüne	Greens	Green/Ecologist
	Sozialdemokratische Partei der Schweiz (SP)	Social Democratic Party of Switzerland	Social democratic
	Schweizerische Volkspartei (SVP)	Swiss People's Party	Agrarian

Table 1 Political Parties by country and party family according to the ParlGov database.

accordingly by using both terms (e.g. "biodiversität OR artenvielfalt site: www.övp.de"). The first 10 returns, which were listed in the sequence as returned by the Google algorithm were selected for the analysis, resulting in a total of 200 documents.

DATA COLLECTION: ENVIRONMENTAL NGOs

The analysis of Environmental NGO documents was carried out in three countries: United Kingdom, Switzerland and Norway. Firstly, five environmental NGOs were selected (shown in Table 2) based on an informed, but subjective, evaluation of the NGOs by the research teams in each country, who collectively have many years of experience working within the field of biodiversity research in their respective countries. For each NGO, a Google search was conducted for "biodiversity" and "press release" (translated to the local language) using the following search command "biodiversity AND "press release" site: www.<NGO's w*eb address*>". In countries, where several words are used for the concept of biodiversity, such as in Austria with the terms "Biodiversität" and "Artenvielfalt", the search command was adapted accordingly by using both terms. The first ten returns from each NGO, which were listed in the sequence returned by the google algorithm, were collected and translated to English, giving a total of 150 documents.

ANALYSIS

The published documents were analysed using a qualitative content analysis, with pre-determined codes that had been derived from the literature (Brunet et al., 2014), in which statements were categorised according to values (Mace et al. 2012), rhetoric function (Lönngren and van Poeck, 2010), or call for action (Bemelmans-Videc et al., 2011).

Values: We identify the value domains held by members of the actor groups and distinguish between 1) Utilitarian, or anthropocentric, which understands nature as a resource to be managed for the benefit of humans, or 2) intrinsically valuable.

Rhetoric function: The rhetoric function of an action or object refers to the point that it makes in the context of an argument or public discourse exchange (Bliss, 2023). We follow the lead of Lönngren and van Poeck (2010) by viewing rhetoric as discourse which is argumentative or strategic and which seeks to persuade. In this way rhetoric

COUNTRY	NGO
United Kingdom (UK)	Butterfly Conservation
	Plantlife
	Royal Society for the Protection of Birds (RSPB)
	The Wildlife Trusts
	World Wide Fund for Nature (WWF)
Switzerland (CH)	Birdlife Switzerland
	Greenpeace
	ProNatura Switzerland
	Stiftung Landschaftschutz (SLS)
	World Wide Fund for Nature (WWF)
Norway (NO)	Bellona
	Natur og Ungdom (Nature and Youth, NU)
	Friends of the Earth Norway (Naturvernforbundet, NVF)
	Sabima
	World Wide Fund for Nature (WWF)

Table 2 Overview of selected environmental NGOs by country.

about biodiversity encompasses the ways that individuals or groups use the concept of biodiversity to further their agendas.

Calls for action: Statements could also be classified as "calls for action", which Bemelmans-Videc et al. (2011) suggest can be further classified into 'carrots', 'sticks' and 'sermons'. Sticks refer to regulatory measures such as laws, regulations, and requirements; carrots refer to economic or market interventions such as taxes, incentives, subsidies, and licences; and sermons refer to informative measures such as strategies, plans, standards, and voluntary agreements (Bemelmans-Videc et al., 2011). This classification corresponds to the commons literature on regulatory, market-based, and voluntary-information-based mechanisms of governance interventions outlined by Ostrom (2010).

RESULTS

BIODIVERSITY DISCOURSE OF POLITICAL PARTIES

The examination of the views of various political parties on biodiversity, predominantly highlighted a utilitarian perspective while also acknowledging some intrinsic values. Most parties underscore the utility of biodiversity for humans, emphasising its role as the foundation of human existence and livelihoods. For instance, the Swiss Green Party and Norway's Arbeiderpartiet stress that biodiversity is essential for human life. Similarly, the Norwegian Conservative Party, Høyre, emphasises the necessity of preserving biodiversity for the benefit of future generations, indicating a concern for the sustainability of human livelihoods.

Utilitarian discourse

Additionally, the economic value of biodiversity is a significant theme across different party lines. Green/Ecologist and Social Democratic parties in Norway and Switzerland advocate for the calculation of biodiversity's economic worth. They argue that those who damage biodiversity should be financially accountable, and there should be incentives for its conservation. The Swiss Social Democrats call for internalising the external costs associated with biodiversity loss, suggesting that financial mechanisms should be employed to correct the imbalance in cases where those causing harm do not bear the costs. This perspective aligns with the broader view of ecosystem services, as highlighted by the Austrian Green Party and the Norwegian and Swiss Social Democrats. These parties underscore the critical functions provided by healthy ecosystems, such as clean water and air, which are indispensable for human well-being.

Economic dependence on biodiversity is highlighted by parties such as Fratelli d'Italia and the Swiss Social Democrats. Fratelli d'Italia emphasises the fundamental role of biodiversity in Italy's economic production, while Norway's agrarian party, Senterpartiet, advocates for prioritising resource conservation over financial savings. This stance is supported by the Norwegian Green Party, which views nature as an irreplaceable asset that should be preserved and not consumed.

Intrinsic value discourse

Despite the predominant utilitarian framing, some parties adopt an intrinsic value perspective, recognising the intrinsic value of nature and animals. The Italian Five Star Movement advocates for acknowledging animals as sentient beings and challenges the notion of human superiority over nature. This party emphasises the need for a new balance between human activities and nature, highlighting the importance of safeguarding plant and animal biodiversity for the well-being of the planet. Similarly, the Austrian Green Party and Free Democratic Party of Switzerland stress the importance of strengthening human-animal relationships and ensuring animal welfare. They advocate for a greater awareness of the interdependence between humans and animals, calling for stricter measures against cruelty and inappropriate animal husbandry.

Furthermore, some parties acknowledge the complexity and fragility of nature. The Swiss Green Party and Norwegian

Greens highlight the need to protect ecosystems from overexploitation, recognising that the loss of biodiversity accelerates climate change and impacts human health. They argue that the intricate interactions within ecosystems are not fully understood, underscoring the importance of preserving biodiversity to maintain the quality of soil, air, and water, which are crucial for human health.

Rhetoric function

The identified rhetoric functions used by various political parties towards biodiversity, focused on informing, persuading, accusing, calling for action, and othering.

Informing about biodiversity developments is a crucial role undertaken by most parties, particularly the Green/Ecologists and Social Democrats. Five of the 20 parties, including one Green/Ecologist, three Social Democratic, and one Agrarian, use specific statistics to describe the state of biodiversity. These descriptions include existing populations, numbers of threatened or lost species and habitats, declining populations, and the overall value of biodiversity.

Persuasion is the most significant rhetorical strategy used by almost all party families to emphasize the importance of biodiversity and the urgent need for action. Various parties underscore biodiversity's vital role with statements such as "*we need biodiversity to survive*" from Italy's Partito Democratico and "*we depend on biodiversity*" from Norway's MDG. The urgency for action is articulated through terms such as "*threat*", "*greatest challenge*", "*dramatic loss/decline*", "*extinction*", "*crisis*", and "*damaged nature*." The necessary actions are described in vigorous terms such as "*fight*", "*halt degradation*", "*stronger commitment*", and "*invest sufficient resources*". Some parties adopt a constructive tone, encouraging proactive steps with phrases such as "*become a pioneer*" (NO-MDG) and "*we can do something about it*" (NO-Arbeiderpartiet). Conversely, the Swiss People's Party (SVP) argues that "*biodiversity [*already*] thrives on agricultural land*", suggesting no further action is needed.

Accusations are a common tactic, with parties frequently blaming other actors for their lack of action in promoting biodiversity. These accusations are typically directed by opposition parties at the incumbent government or coalition partners. The agrarian Swiss People's Party SVP accuses environmental NGOs and the Green Party of unfairly blaming farmers for biodiversity loss, arguing that "*excessive immigration*" and "*increased food production demands*" are the real culprits. They criticise organic farming, suggesting that prioritising "'*butterfly counts*'" *over food production on Switzerland's best soils*" is unjustifiable. Liberal and right-wing parties, such as AT-NEOS, AT-FPÖ, CH-FDP, and CH-SVP, contend that centrally defined regulations, such as those from the EU, are problematic and advocate for more effective local and regional policies.

There is a consensus among parties that biodiversity is declining and call for action that they perceive as necessary. Social Democratic and Green parties emphasize the importance of addressing biodiversity loss, equating its significance with climate change. However, some parties, including one Christian Democratic, one conservative, and one right-wing, emphasise the need to promote biodiversity without specifying clear actions. Conflicts between human activities and biodiversity are acknowledged, with varying priorities assigned to biodiversity promotion. Swiss Agrarians and Norwegian Conservatives argue for balancing biodiversity with other interests.

In the context of othering, two parties (one right-wing and one Agrarian) see no need for additional biodiversity protection. The Swiss agrarian party (SVP) claims that "*Switzerland is ahead in biodiversity protection*" compared to other countries and argues against further measures, fearing additional state requirements and economic burdens. Similarly, Fratelli d'Italia and Swiss liberals emphasise a traditional commitment to balanced ecology, distancing themselves from green/ecological and social democratic parties, which they perceive as prioritising external over national interests.

Calls for action

The analysis revealed diverse measures proposed by various political parties to promote biodiversity, detailing the legal obligations, underlying rationales, time perspectives, and financial allocations associated with these measures. Green and Social Democratic parties in Switzerland, Norway, and Italy advocate for substantial financial resources to support biodiversity. The Norwegian Conservatives emphasise cost-efficiency, while the Norwegian Greens stress the need for long-term perspectives, advocating for rules that prioritise long-term impacts on nature in both public and private decisions. The suggested measures range from legally binding to voluntary. The Norwegian Greens call for stringent regulations requiring explicit permission for any interventions in nature, while the Swiss People's Party (SVP) and Norwegian Conservatives favour voluntary measures, emphasising strong private property rights.

Sticks – Regulatory Measures: Greens, Social Democrats, and the Italian Five Star Movement call for binding legal measures and bans on certain practices. The Austrian Social Democrats propose banning patents on plants and animals and certain pesticides such as glyphosate. The Swiss Green Party advocates for reducing pesticide use, banning their sale to private users, and prohibiting their use in public facilities. The Swiss Christian Democrats support less strict compensation areas for biodiversity loss due to construction

but reject granting the Federal Council authority to impose minimum ecological compensation requirements. Instead, they propose enhancing ecological infrastructure near settlements. Parties in Switzerland, Norway, and Italy (Christian Democratic, Green, and Social Democratic) advocate for expanding protected areas with no human intervention due to their ecological and economic benefits.

Carrots – Market Interventions: Another approach involves financial incentives for voluntary measures by companies or private households. Liberal and conservative parties support market-based, voluntary interventions, emphasising the compatibility of biodiversity promotion with economic growth. An example is the internalisation of external costs through taxes, such as the nature tax proposed by the Norwegian Greens or the pesticide tax by the Swiss Greens. The Swiss Social Democrats and Norwegian Greens advocate for the polluter-pays principle to address biodiversity damage and fund protective measures. The Norwegian and Swiss Greens also call for abolishing biodiversity-damaging incentives, highlighting the role of agricultural subsidies. The Swiss Christian Democrats and Austrian Greens emphasise compensating farmers for biodiversity efforts and losses due to wild animals.

Sermons – Information Measures: Prominent measures include setting clear biodiversity targets. Area targets, where a percentage of land promotes biodiversity, are contested in Switzerland. The Swiss liberals support including all types of areas, while the Swiss agrarian party and Christian Democrats oppose area targets, citing existing agricultural efforts. The Norwegian Green Party calls for a "*zero net loss target using 'land*-neutrality'". Various parties advocate for specific species diversity targets. The Italian right-wing party Fratelli d'Italia emphasises realistic, gradual goals that do not harm the economy.

Some parties highlight the need for a comprehensive land use perspective, with the Swiss liberals stressing habitat connection and ecological infrastructure. Informing and raising awareness about biodiversity loss is suggested by a few parties. Three parties call for mapping habitats and biodiversity, and one Liberal party advocates for more research on genetic engineering. The Austrian Greens emphasize organising awareness-raising events to educate citizens about biodiversity loss.

BIODIVERSITY DISCOURSE OF ENVIRONMENTAL NGOs

Values

The analysed documents predominantly make anthropocentric arguments for the value of biodiversity and nature. The NGOs repeatedly state that biodiversity is the "*basis of our existence*" (SFS, CH) or of our "*livelihood*" (e.g. Sabima; NO, Birdlife, CH). In few cases biodiversity is framed as of less fundamental importance when saying that it is necessary for human well-being (WWF, UK) or that people (elsewhere) are suffering because of degraded nature (Sabima, NO).

The NGOs further argue for biodiversity by referring to specific ecosystem services, especially provisioning services, such as:

- Carbon sequestration of moors, marshes, wetlands and forests (Pro Natura, CH, WWF, CH; Sabima, Norway; NU, NO)
- Storage and purification of water (ProNatura, CH; WWF, CH; NU, NO)
- Protection against extreme weather events such as heat, drought or flooding (ProNatura, CH; WWF, CH; NU, NO; Sabima, NO)
- Protection against erosion (NU, NO; ProNatura, CH; WWF, CH)
- Provision of food, either via pollinating insects (Greenpeace, Switzerland; WWF, CH) or directly from an ecosystem (NU, NO)
- Medicine (NU, NO)
- Raw materials (Sabima, NO)

The NGOs rarely argued for biodiversity from an ecocentric perspective and the only NGO to do so was WWF. In the UK WWF used ecocentric statements by referring to the world as "*our home*" (WWF, UK) or calling for "*A change from viewing nature as something that's optional or 'nice to have' to the single greatest ally we have in restoring balance to our world*" (WWF, UK).

Rhetoric function

The rhetoric from environmental NGOs focussed on warning, persuading, and calling for action.

The warning rhetoric in the UK is more alarming and emotional than in Norway or Switzerland. The organisations from the UK warn of an "*ecological emergency*" (RSPB, UK) with "*catastrophic consequences for the planet*" (WWF, UK) given the "*freefall*" in wildlife which is in a "*catastrophic decline [...] showing no signs of slowing*" (WWF, UK) or of "*nature's extreme declines*" (Wildlife Trusts, UK). Additionally, the decline in local wildlife and the framing of the UK as "nature depleted" is a unique narrative (Wildlife Trusts, UK). In Switzerland and Norway the most emotional language is used by WWF. However, most press releases are less confrontational than in the UK, for example: "*The year 2022 was not a good year for biodiversity in Switzerland and globally. The biodiversity crisis is still not taken seriously enough, especially in politics*" (Birdlife, CH).

A persuasion strategy by the UK, Swiss, and Norwegian NGOs is to use the increased awareness about climate

change to draw attention to the problem of biodiversity loss and persuade readers to consider them as interrelated. They highlight that "*biodiversity loss is as acute a crisis as the climate crisis*" (Sabima, NO) framing them as the "*twin crises*" (Plantlife, UK). Such statements are sometimes given further external justification, with the NGOs referring to publications or statements of trusted institutions, such as the Conference of the Parties (COP) to the United Nations, Framework Convention on Climate Change (e.g. Birdlife, CH) or the World Biodiversity Council (WBC) (e.g. SFS, CH). Biodiversity loss and climate change is understood as being interrelated, with climate change proposed as a major cause for biodiversity loss by "*accelerat[ing] species extinction*" (WWF, CH), while functioning ecosystems are "*the most important insurance against the consequences of climate change*" (Sabima, NO). Some NGOs argue for the need to tackle climate change and the biodiversity crisis jointly and not "*play* [...them] *against each other*" (WWF, CH). WWF Switzerland explains the relation between climate change and biodiversity as follows:

> "*Climate change is a financial risk that is recognised as such by a growing number of financial actors and regulators. A related but unrecognised environmental risk is the rapid loss of global biodiversity. Climate change further accelerates species extinction and leads to rapid changes in ecosystems. This drastically limits the natural carbon sequestration of ecosystems, which in turn exacerbates climate change. This negative spiral has so far been virtually ignored by decision-makers, the financial sector, and its regulators*" (WWF, CH).

In their calls for action, NGOs in the UK, Switzerland, and Norway use urgent and emotive language to highlight the biodiversity crisis, emphasizing the need for immediate and decisive action. For example, the WWF in the UK describes the situation as a "*fight for our world*," underscoring the critical need for genuine measures rather than superficial promises. These NGOs pin their hopes on international negotiations, particularly the COP on Biodiversity, to curb global biodiversity loss. They primarily address politicians and governments, urging them to prioritize biodiversity and implement effective policies. The Norwegian NGO Sabima uniquely calls on citizens to consider biodiversity when voting in national elections.

Many NGO press releases argue for or against specific policy measures, often calling for increased government funding to close the "*biodiversity finance gap*." They advocate for financial resources to support protected areas, scientific research, and environmental authorities. The policy measures are categorized into 'carrots,' 'sticks,' and 'sermons,' following Bemelmans-Videc et al. (2011) and regulatory, market-based, and voluntary-information-based mechanisms (Ostrom, 2010).

Carrots – Market Interventions: Few measures fall under this category. NGOs emphasize removing subsidies that harm biodiversity, such as those for oil, gas, and animal product sales, highlighting their significant impact on the biodiversity crisis. They also support the polluter-pays principle but offer no concrete proposals for its implementation.

Sticks – Regulatory Measures: Regulatory measures frequently discussed include establishing more protected areas, imposing greater restrictions within these areas, and banning harmful practices like peat burning, pesticide use, and gravel gardens. NGOs also call for stricter, legally binding biodiversity legislation across various sectors. Country-specific measures include restoring damaged peatlands in the UK and stricter risk assessments for oil spills in Norway. Swiss NGOs discuss the conflict between environmental goals and biodiversity protection, criticizing relaxed regulations intended to expedite renewable energy projects.

Sermons – Information Measures: The most prominent information measures advocate for international cooperation and ambitious agreements within the CBD (2022) COP framework. NGOs urge governments to push for strong international commitments to "*set the world on a new course*," as exemplified by a statement from Sir David Attenborough. Despite high hopes for the Kunming-Montreal Biodiversity Targets Framework, there is criticism that the agreement is non-binding and has loopholes. Post-COP15, NGOs call for swift and decisive implementation of the treaty.

In Switzerland, the national biodiversity strategy faces significant criticism for failing to meet its goals due to "toothless" strategies and lack of implementation. Apart from advocating for international agreements and national strategies, there are calls for better monitoring and mapping of vulnerable areas in Norway and for the Swiss government to disseminate more information about biodiversity.

DISCUSSION

The aim of this study was to gain an understanding of how two social groups: political parties and environmental NGOs, perceive and communicate about biodiversity, the worldview this implies, and how perceptions, communication, and worldviews intersect with values. The review of the existing academic literature on biodiversity discourses revealed the main discourses and enabled us to identify whether these reappeared within the actor groups

that were the focus of this research. The Rhetorical Analysis Approach proved to be a useful way of identifying actor groups (political parties, environmental NGOs), the values that are evident within them (anthropocentric, ecocentric, and science-centric), and the rhetoric functions they use (warning, calls for action, informing, persuading, accusing, entertaining, othering, and raising hope). The results were structured according to actor group, so in this discussion section, we will examine the values and rhetoric functions between actor groups including within national contexts.

The term biodiversity is rarely understood and beyond our ability to define (Takacs, 1996), which leaves it open to use, or perhaps abuse, by actor groups to further their agenda. We investigated whether the language used in the biodiversity discourse can be chosen by actor groups strategically with the intention of persuading an audience to take action or inaction or to justify or explain their own action or inaction. The results from the political parties, and NGOs, at least implicitly, support this premise.

UTILITARIAN VALUE OF BIODIVERSITY

We investigated whether participants in the utilitarian discourse around biodiversity frame their values of biodiversity in terms of the contribution it can make to people. This set of anthropocentric values was found to be ubiquitous in publications by both NGOS and political parties. This result is understandable from the point of political parties, who seek to gain or maintain power by representing the population, so are served by connecting their position with the everyday life of their constituents. However, it was less intuitive for environmental NGOs, many of whom perceive an intrinsic value of nature, including biodiversity, as central to their identity.

We also investigated whether participation in the science-centric discourse on biodiversity leads to biodiversity being valued in terms of its potential contribution to scientific endeavour but this rhetoric was rarely found in publications by the NGOs. However, some examples of rhetoric indicating science-centric values were found in publications by political parties, although this result might be explained by derived anthropocentric values in that they wish to support scientists. Although science-centric values of biodiversity have been noted by Blicharska and Grandin, 2015; Howard et al., 2018; Lee et al., 2021; Mitchell, 2016; and Valiverronen and Hellsten, 2002, we argue that science-centric is a specific example of a utilitarian perspective in that scientists, who are the usual participants in the scientific discourse, are interested in preserving a biodiversity as a resource that is useful to them.

INTRINSIC VALUE OF BIODIVERSITY

We investigated whether a range of actors perceive biodiversity to have intrinsic value and assume the role speaking on its behalf, with this role taken predominantly by environmental NGOs. Overall, the analysis shows that the NGOs included in this study mainly use anthropocentric values to argue for biodiversity protection, which is surprising because they simultaneously, or more prominently, argue for recognition that biodiversity has intrinsic values. Essentially, they face "the Environmentalists' Dilemma" (Norton, 1991) of whether our obligation is to save natural resources *for future* consumption, or to save nature *from* consumption, which is solved by arguing for the former to achieve the latter. This result suggests that the environmental NGOs are pragmatic in their operationalisation of the biodiversity concept, and use it to motivate participation and action by connecting it to the well-being of the people they are targeting. However, we did not find any statements expressing monetary values of biodiversity or its services. This clearly sets the biodiversity discourse of environmental NGOs apart from discourses in political parties.

RHETORIC FUNCTION

We investigated whether rhetoric about biodiversity is used by individuals or groups to be argumentative or strategic and to persuade in order to further their agendas. The rhetoric functions discussed in this work were inductively identified, which means they were driven by the data and used to generate theory. We acknowledge the subjectivity of such inductive work, but some comparison with the results of previous study adds plausibility to the interpretations. The depth of rhetoric functions could be reduced to three major functions of rhetoric: *Warning*, *Calling for Action,* and *Informing.*

The warning rhetoric was identified as a mainstream of rhetoric function in the public discourse in both actor groups. Muradian and Gomez-Baggethun (2021) point out a strategy to use rhetoric function to create a connection between the audience and the phenomenon by anchoring experience in analytical categories, establishing causal relationships, and conveying symbolic meaning. Indeed the warning rhetoric used by environmental NGOs was framed with an anthropocentric focus that appears to be intended to motivate the audience to change behaviour, contribute to the NGO, or both. Warning rhetoric by political parties was framed in such a way that it appears that the actors placed themselves as part of the solution, which could thereby attract votes.

The Calling for Action rhetoric was found to be primarily based on the anthropocentric utilitarian arguments that we have:

1. A *moral obligation* to preserve biodiversity as a resource for future generations, which echoes the findings of Valiverronen and Hellsten (2002) who identified

discourse around "green medicine" and Muradian and Gomez-Baggethun (2021) who identified a narrative in which nature and biodiversity are represented as domains that are external to human societies and from which a positive flow of benefits emerge.

2. A *political obligation* to preserve biodiversity to enable economic development, which is similar to the position taken by Serrano et al. (2019) who identified a discourse that sees biodiversity as a product of histories that shows the interconnection between nature and society with diverse global contexts, such as culture, science, and economy.
3. A *solidarity based obligation* to preserve biodiversity to respect the cultural ties with biodiversity held by others, which supports the findings of Bjærke, (2019), Blicharska and Grandin (2015), and Serrano et al. (2019).

Arguments to preserve biodiversity based on its scientific value as a store of scientific knowledge were present, but less common, in the analysed documents, so the findings of authors, such as Valiverronen and Hellsten (2002) who identified the description of biodiversity as the "library of life" appear to be less relevant outside academia. Sceptical arguments that enough is already being done to preserve biodiversity, were also found, for example, by Takala et al. (2022), but were even rarer. Calling for Action was identified as dominant discourses in all the analysed materials.

The informing function of rhetoric appears to be rarely used by the actor groups and was almost always attached to another rhetoric function. In the realm of public discourse, a range of other rhetoric functions were identified. These included 1) persuading: particularly by NGOs and political parties; 2) accusing: particularly by NGOs and political parties, and 3) othering and raising hope, which were commonly found in political parties who each appeared to be attempting to represent an optimistic future.

LIMITATIONS

A limitation is that the research focussed on two actor groups, each with their own genre of communication, from a small number of countries for in depth analysis. Although these actor groups were selected according to their perceived stake in the biodiversity discourse, and combined with categorisations suggested by Lee et al. (2021) , Bemelmans-Videc et al. (2011), and Ostrom, (2010), there are other fields, such as education or health, that may be informative to understanding the societal discourse on biodiversity. A further limitation is that there is an inherent degree of subjectivity, as in any qualitative analysis, when classifying statements according to categories, so direct quotes have been included in the results section. Time and resource constraints did not allow the inclusion of more countries in the analysis of the discourse in political parties and NGOs than the four and three countries respectively. Furthermore, the three countries are western, rather progressive democracies, so the geography of the countries may have been decisive in finding these results. The inclusion of further countries in the analysis may have gained additional insights and remains the challenge of future research. Finally, there is the potential for selection bias in the selection of the key environmental NGOs in the target countries. Although these were chosen by researchers who live in the target countries and consider themselves well informed about the active NGOs in their countries, a different selection may have produced different results. Such future research will also be faced with methodological challenges, as this study was, such as inter-coder reliability and the potential for nuance to be lost due to translation.

The search strategy was also a limitation to this research. Although the search strategies for each field of interest were as systematic as possible within our available resources, some pragmatic decisions had to be made. For example, the NGO study was limited to press releases because they were deemed to be a good way of learning the individual NGO's perspectives, but other document types, such as speech and/or interview transcripts, might also have been informative. Although the "site" query in Google is well suited to return results from one specific domain, it returns documents based on a google algorithm to evaluate relevance and the time frame was not filtered. A study by Bevendorff et al. (2024) used 41 quantitative indicators and concluded that the underlying ranking quality of Google's core algorithm remained robust for identifying semantically relevant and authoritative pages. While this search strategy is a good tool to identify relevant articles, the number of returned search results should be interpreted with care. Despite these limitations, the searches returned a rich data set that enabled some generalizations and conclusions.

CONCLUSION AND OUTLOOK

We investigated whether the language used in the biodiversity discourse can be chosen by actor groups strategically with the intention of persuading an audience to take action or inaction, with influences on biodiversity outcomes, or to justify or explain their own action or inaction. Although it is beyond the resources of this study to directly evaluate biodiversity outcomes based on the rhetoric, we could draw conclusions from prior research and link these with the results of this study. We found extensive and theoretically supported evidence that the language that is used and communicated might indeed intended to motivate action or inaction. Furthermore, the patterns suggest that the use of rhetoric might be strategic

and systematic in attempting to further the agendas of actor groups.

We explored three dominant value domains that have been identified in discourses of biodiversity – anthropocentric, ecocentric, and science-centric. However, the results of this study led us to the conclusion that they instead represent two value domains: anthropocentric and intrinsic, with science-centric discourse being essentially a subset of anthropocentric discourse. The science-centric biodiversity discourse was found to use exclusively anthropocentric arguments, so we consider it as part of the anthropocentric value domain rather than a value domain in its own right. We also found that virtually all rhetoric function is based on anthropocentric arguments: even from organisations which espouse a mindset that biodiversity has intrinsic values. We also note that following these dominant discourses (here adopted from Lee et al. 2021) does not capture relational values that emphasises relationships and responsibilities (Chan et al. 2016), which is an area of investigation that we suggest for future research.

The dominant and alternative discourses in society influence the actions that are taken, which appears to be a point that is embraced by both political parties and NGOs. Most political parties frame biodiversity in terms of its benefits to humans, but some also advocate for an intrinsic value view, emphasizing the intrinsic value of nature and the need to protect it for the sake of all living beings. Political parties appear to attempt to gather political support, and thereby gain or hold power, by using a rhetoric that is centred on 'persuading', 'accusing', and 'othering', although it also includes 'informing' and 'calling for action'. With this rhetoric, they place themselves as being the solution to biodiversity loss or provide justification for their actions or inactions, while differentiating themselves from other political parties that are competing for power. Environmental NGOs exist to work towards environmental goals, which is reflected in their rhetoric that includes 'informing', 'warning', and 'persuading' their audience to engage with their issues: usually by relating consequences of action or inaction with the effects on humans. In this way, environmental NGOs appear to take a pragmatic approach to gaining followers and gathering support for their activities by using anthropocentric arguments to further their ecocentric ideologies.

The outcomes of this analysis are expected to enhance the understanding of perceptions of and values related to the concept of biodiversity by different actor groups. Indeed, the premise that biodiversity discourse can be chosen by actor groups strategically, with the intention of persuading an audience, has been supported in this analysis.

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COMPETING INTERESTS

The authors have no competing interests to declare.

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REFERENCES

Adger, W. N., Benjaminsen, T. A., Brown, K., & **Svarstad, H.** (2001). Advancing a political ecology of global environmental discourses. *Development and Change*, *32*(4), 681–715. https://doi.org/10.1111/1467-7660.00222

Aggestam, F. (2015). Framing the ecosystem concept through a longitudinal study of developments in science and policy. *Conservation Biology*, *29*(4), 1052–1064. https://doi.org/10.1111/cobi.12516

Anquet, R., & **Girard, F.** (2022). Biocultural community protocols and the ethic of stewardship: stewardship: The Sovereign Stewards of Biodiversity. *Biocultural Rights, Indigenous Peoples and Local Communities: Protecting Culture and the Environment*, 271–313. https://doi.org/10.4324/9781003172642-14

Bemelmans-Videc, M.-L., Rist, R. C., & **Vedung, E. O.** (2011). *Carrots, sticks, and sermons: Policy instruments and their evaluation* (Vol. 1). Transaction Publishers.

Berry, P. M., Fabok, V., Blicharska, M., Bredin, Y. K., Llorente, M. G., Kovacs, E., Geamana, N., Stanciu, A., Termansen, M., Jaaskelainen, T., Haslett, J. R., & **Harrison, P. A.** (2018). Why conserve biodiversity? A multi-national exploration of stakeholders' views on the arguments for biodiversity conservation. *Biodiversity and Conservation*, *27*(7), 1741–1762. https://doi.org/10.1007/s10531-016-1173-z

Bevendorff, J., Wiegmann, M., Potthast, M., & **Stein, B.** (2024). Is Google getting worse? A longitudinal investigation of SEO spam in search engines. In *Proceedings of the 46th European Conference on Information Retrieval (ECIR 2024)*. Leipzig University, Bauhaus-Universität Weimar, and ScaDS. AI. Retrieved from https://downloads.webis.de/publications/papers/bevendorff_2024a.pdf

Bjærke, M. R. (2019). Making Invisible Changes Visible: A Minister, a Cuckoo and the Mediation of a Red List. Culture Unbound. *Journal of Current Cultural Research*, *11*(3–4), 394–414. https://doi.org/10.3384/cu.2000.1525.191127

Blicharska, M., & **Grandin, U.** (2015). Why protect biodiversity? Perspectives of conservation professionals in Poland. *International Journal of Biodiversity Science, Ecosystem Services and Management*, *11*(4), 349–362. https://doi.org/10.1080/21513732.2015.1050969

Bliss, H. (2023). *What Is Rhetorical Function?* https://www.languagehumanities.org/what-is-rhetorical-function.htm. Visited April 14. 2023.

Borie, M., & **Hulme, M.** (2015). Framing global biodiversity: IPBES between mother earth and ecosystem services. *Environmental Science & Policy*, *54*, 487–496. https://doi.org/10.1016/j.envsci.2015.05.009

Bouwma, I., Schleyer, C., Primmer, E., Winkler, K. J., Berry, P., Young, J., Carmen, E., Špulerová, J., Bezák, P., Preda, E., Vadineanu, A., & **Balázs, B.** (2018). Adoption of the ecosystem services concept in EU policies. *Ecosystem Services*, *29*, 213–222. https://doi.org/10.1016/j.ecoser.2017.02.014

Bredin, Y. K., Lindhjem, H., van Dijk, J., & **Linnell, J. D. C.** (2015). Mapping value plurality towards ecosystem services in the case of Norwegian wildlife management: A Q analysis. *Ecological Economics*, *118*, 198–206. https://doi.org/10.1016/j.ecolecon.2015.07.005

Brunet, N. D., Dagenais, D., Breux, S., & **Handa, I. T.** (2020). A characterization of media representation of biodiversity and implications for public perceptions and environmental policy: the case of Quebec, Canada. *Environment Development and Sustainability*, *22*(2), 1655–1669. https://doi.org/10.1007/s10668-018-0244-6

Brunet, N. D., Hickey, G. M., & **Humphries, M. M.** (2014). The evolution of local participation and the mode of knowledge production in Arctic research. *Ecology and Society*, *19*(2), 69. https://doi.org/10.5751/ES-06641-190269

Cardinale, B. J., Duffy, J. E., Gonzalez, A., Hooper, D. U., Perrings, C., Venail, P., ... & **Naeem, S.** (2012). Biodiversity loss and its impact on humanity. *Nature*, *486*(7401), 59–67. https://doi.org/10.1038/nature11148

Carmen, E., Watt, A., & **Young, J.** (2018). Arguing for biodiversity in practice: a case study from the UK. *Biodiversity and Conservation*, *27*(7), 1599–1617. https://doi.org/10.1007/s10531-016-1264-x

CBD. (2022). *Convention on Biological Diversity*. Kunming–Montreal Global Biodiversity Framework: Target 14. https://www.cbd.int/gbf/targets/14/

Chalaye, P. (2022). The discursive sources of environmental progress and its limits: biodiversity politics in France. *Environmental Politics*. https://doi.org/10.1080/09644016.2022.2034411

Chan, K. M., Balvanera, P., Benessaiah, K., Chapman, M., Díaz, S., Gómez-Baggethun, E., ... & **Turner, N.** (2016). Why protect nature? Rethinking values and the environment. *Proceedings of the National Academy of Sciences*, *113*(6), 1462–1465. https://doi.org/10.1073/pnas.1525002113

Dasgupta, P. (2023). *The economics of biodiversity: The Dasgupta Review*. London, UK: HM Treasury. https://doi.org/10.1017/9781009494359

Díaz, S., Fargione, J., Chapin, F. S., III & **Tilman, D.** (2006). Biodiversity Loss Threatens Human Well-Being. *PLoS Biol*, 4(8), e277. https://doi.org/10.1371/journal.pbio.0040277

Drury, M., Fuller, J., & **Keijzer, M.** (2022). Biodiversity communication at the UN Summit 2020: Blending business and nature. *Discourse & Communication*, *16*(1), 37–57. https://doi.org/10.1177/17504813211043720

Dryzek, J. (2005). Environmentally Benign Growth: Sustainable Development. In J. S. Dryzek (Ed.), *The Politics of the Earth* (2nd edn). Oxford University Press, pp. 145–61.

Dryzek, J. (2013). *The Politics of the Earth: Environmental Discourses*. Oxford: Oxford University Press. 270 p.

Foucault, M. (1980). *Power/Knowledge: Selected Interviews and Other Writings*. 1972–79, (Ed. Colin Gordon). New York: Pantheon.

Gee, J. P. (2011). *An Introduction to Discourse Analysis: Theory and Method* (3rd ed.). Routledge. https://doi.org/10.4324/9780203847886

Gustafsson, K. M. (2013). Environmental discourses and biodiversity: the construction of a storyline in understanding and managing an environmental issue. *Journal of Integrative Environmental Sciences*, *10*(1), 39–54. https://doi.org/10.1080/1943815X.2013.769455

Haas, C., & **Flower, L.** (1988). Rhetorical reading strategies and the construction of meaning. *College Composition and Communication*, *39*(2), 167–183. https://doi.org/10.58680/ccc198811161

Hajer, M. (1995). The Politics of Environmental Discourse: Ecological Modernization and the Policy Process. *Science, Technology, & Human Values*, *23*(2), 245–248.

Hajer, M. (2006). Doing discourse analysis: coalitions, practices, meaning. In M. van den Brink & T. Metze (Eds.), *Words matter in Policy and Planning—Discourse Theory and Method in the Social Sciences*. KNAG/Nethur, Utrecht, pp. 65–74.

Howard, B., Braat, L. C., Bugter, R. J. F., Carmen, E., Hails, R. S., Watt, A. D., & **Young, J. C.** (2018). Taking stock of the spectrum of arguments for biodiversity. *Biodiversity and Conservation*, *27*(7), 1561–1574. https://doi.org/10.1007/s10531-016-1082-1

Howarth, D. (2010). Power, discourse, and policy: Articulating a hegemony approach to critical policy studies. *Critical policy studies*, *3*(3–4), 309–335. https://doi.org/10.1080/19460171003619725

Hugé, J., Rochette, A.-J., Janssens de Bisthoven, L., Dahdouh-Guebas, F., Koedam, N., & **Vanhove, M. P. M.** (2017). Utilitarian framings of biodiversity shape environmental impact assessment in development cooperation. *Environmental Science & Policy*, *75*, 91–102. https://doi.org/10.1016/j.envsci.2017.06.003

Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES). (2019). Global assessment report on biodiversity and ecosystem services. In E. S. Brondízio, J. Settele, S. Díaz, & H. T. Ngo (Eds.), *IPBES Secretariat*. https://doi.org/10.5281/zenodo.3831673

IPBES. (2024). Thematic Assessment Report on the Underlying Causes of Biodiversity Loss and the Determinants of Transformative Change and Options for Achieving the 2050 Vision for Biodiversity of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services. In K. O'Brien, L. Garibaldi, A. Agrawal, E. Bennett, O. Biggs, R. Calderón Contreras, E. Carr, N. Frantzeskaki, H. Gosnell, J. Gurung, S. Lambertucci, J. Leventon, C. Liao, V. Reyes García, L. Shannon, S. Villasante, F. Wickson, Y. Zinngrebe, & L. Perianin (Eds.), *IPBES Secretariat*. https://doi.org/10.5281/zenodo.11382215

Isbell, F., Balvanera, P., Mori, A. S., He, J. S., Bullock, J. M., Regmi, G. R., … & **Palmer, M. S.** (2023). Expert perspectives on global biodiversity loss and its drivers and impacts on people. *Frontiers in Ecology and the Environment*, *21*(2), 94–103. https://doi.org/10.1002/fee.2536

Jetzkowitz, J., van Koppen, C., Lidskog, R., Ott, K., Voget-Kleschin, L., & **Mei Ling Wong, C.** (2018). The significance of meaning. Why IPBES needs the social sciences and humanities. *Innovation: The European Journal of Social Science Research*, *31*(sup1), S38–S60. https://doi.org/10.1080/13511610.2017.1348933

Johnson, C. N., Balmford, A., Brook, B. W., Buettel, J. C., Galetti, M., Guangchun, L., & **Wilmshurst, J. M.** (2017). Biodiversity losses and conservation responses in the Anthropocene. *Science*, *356*(6335), 270–275. https://doi.org/10.1126/science.aam9317

Kusmanoff, A. M., Fidler, F., Gordon, A., & **Bekessy, S. A.** (2017). Decline of "biodiversity" in conservation policy discourse in Australia. *Environmental Science & Policy*, *77*, 160–165. https://doi.org/10.1016/j.envsci.2017.08.016

Lee, S. H., Kang, Y. H., & **Dai, R.** (2021). Toward a More Expansive Discourse in a Changing World: An Analysis of Political Leaders' Speeches on Biodiversity. *Sustainability*, *13*(5). https://doi.org/10.3390/su13052899

Lenzi, D., Balvanera, P., Arias-Arévalo, P., Eser, U., Guibrunet, L., Martin, A., Muraca, B., & **Pascual, U.** (2023). Justice, sustainability, and the diverse values of nature: Why they matter for biodiversity conservation. *Current Opinion in Environmental Sustainability*, *64*, 101353. https://doi.org/10.1016/j.cosust.2023.101353

Lönngren, J., & **Van Poeck, K.** (2021). Wicked problems: A mapping review of the literature. *Environmental Education Research*, *27*(5), 651–671.

Mace, G. M., Barrett, M., Burgess, N. D., Cornell, S. E., Freeman, R., Grooten, M., & **Purvis, A.** (2018). Aiming higher to bend the curve of biodiversity loss. *Nature Sustainability*, *1*(9), 448–451. https://doi.org/10.1038/s41893-018-0130-0

Mace, G. M., Norris, K., & **Fitter, A. H.** (2012). Biodiversity and ecosystem services: A multilayered relationship. *Trends in Ecology & Evolution*, *27*(1), 19–26. https://doi.org/10.1016/j.tree.2011.08.006

Mattijssen, T. J. M., Ganzevoort, W., van den Born, R. J. G., Arts, B. J. M., Breman, B. C., Buijs, A. E., … **Knippenberg, L. W. J.** (2020). Relational values of nature: leverage points for nature policy in Europe. *Ecosystems and People*, *16*(1), 402–410. https://doi.org/10.1080/26395916.2020.1848926

McCormick, S. (2007). Democratizing Science Movements: A New Framework for Mobilization and Contestation. *Social Studies of Science*, *37*(4), 609–623. https://doi.org/10.1177/0306312707076598

Mitchell, A. (2016). Beyond Biodiversity and Species: Problematizing Extinction. *Theory Culture & Society*, *33*(5), 23–42. https://doi.org/10.1177/0263276415619219

Muradian, R., & **Gomez-Baggethun, E.** (2021). Beyond ecosystem services and nature's contributions: Is it time to leave utilitarian environmentalism behind? *Ecological Economics*, *185*. https://doi.org/10.1016/j.ecolecon.2021.107038

Norton, B. (1991). *The unity of environmentalists*. New York: Oxford University Press.

Olausson, U., & **Uggla, Y.** (2019). Celebrities celebrifying nature: The discursive construction of the human–nature relationship in environmental organizations' media communication. *Celebrity Studies*, *10*(3), 351–368.

Organisation for Economic Co-operation and Development (OECD). (2017). *The political economy of biodiversity policy reform*. OECD Publishing. https://doi.org/10.1787/9789264269545-en

Ostrom, E. (2010). Beyond Markets and States: Polycentric Governance of Complex Economic Systems. *American Economic Review*, *100*(3), 641–72. https://doi.org/10.1257/aer.100.3.641

Ozili, P. K. (2020). Theories of financial inclusion. In: *Uncertainty and challenges in contemporary economic behaviour* (pp. 89–115). Emerald Publishing Limited. https://doi.org/10.1108/978-1-80043-095-220201008

Pierce, J. R., Miller, B., Martin, C., & **Hafner, J.** (2020). Actions, indicators, and outputs in urban biodiversity plans. *Plos One*, *15*(7), e0235773. https://doi.org/10.1371/journal.pone.0235773

Primmer, E., Termansen, M., Bredin, Y., Blicharska, M., Garcia-Llorente, M., Berry, P., Jaaskelainen, T., Bela, G., Fabok, V., Geamana, N., Harrison, P. A., Haslett, J. R., Cosor, G. L., & **Andersen, A. H. K.** (2017). Caught Between Personal and Collective Values: Biodiversity conservation in European decision-making. *Environmental Policy and Governance*, *27*(6), 588–604. https://doi.org/10.1002/eet.1763

Reisigl, M. (2017). The Discourse-Historical Approach. In J. Flowerdew & J. Richardson (Eds.), *The Routledge Handbook of Critical Discourse Studies*. Available at: https://www.routledgehandbooks.com/doi/10.4324/9781315739342.ch3. Site visited April 14, 2023.

Serrano, J. V, Gelisan, L. A., Lacaste, A. V, Muyco, P. G. M., Alazada, N. D. S., & **Marasigan, S. B.** (2019). Discourse analysis of indigenous women's construct on biodiversity and sustainable development. *International Journal of Social Ecology and Sustainable Development*, *10*(4), 31–46. https://doi.org/10.4018/IJSESD.2019100103

Spash, C. L., & **Aslaksen, I.** (2015). Re-establishing an ecological discourse in the policy debate over how to value ecosystems and biodiversity. *Journal of Environmental Management*, *159*, 245–253. https://doi.org/10.1016/j.jenvman.2015.04.049

Steinwall, A. (2015). Naturalness or Biodiversity: Negotiating the Dilemma of Intervention in Swedish Protected Area Management. *Environmental Values, White Horse Press*, *24*(1), 31–54, February. https://doi.org/10.3197/096327115X14183182353791

Takacs, D. (1996). *The Idea of Biodiversity: Philosophies of Paradise*. Johns Hopkins University Press.

Takala, T., Brockhaus, M., Hujala, T., Tanskanen, M., Lehtinen, A., Tikkanen, J., & **Toppinen, A.** (2022). Discursive barriers to voluntary biodiversity conservation: The case of Finnish forest owners. *Forest Policy And Economics*, *136*. https://doi.org/10.1016/j.forpol.2021.102681

Takala, T., Hujala, T., Tanskanen, M., & **Tikkanen, J.** (2019). Competing discourses of the forest shape forest owners' ideas about the biodiversity of their forests. *Biodiversity and Conservation*, *28*(13), 3445–3464. https://doi.org/10.1007/s10531-019-01831-7

Troumbis, A., & **Zevgolis,Y.** (2020). Biodiversity crime and economic crisis: Hidden mechanisms of misuse of ecosystem goods in Greece. *Land Use Policy*, *99*, 105061. https://doi.org/10.1016/j.landusepol.2020.105061

Turnhout, E., Waterton, C., Neves, K., & **Buizer, M.** (2013). Rethinking biodiversity: From goods and services to "living with". *Conservation Letters*, *6*(3), 154–161. https://doi.org/10.1111/j.1755-263X.2012.00307.x

Valiverronen, E., & **Hellsten, L.** (2002). From "Burning Library" to "Green Medicine": The Role of Metaphors in Communicating Biodiversity. *Science Communication*, *24*(2) 229–245. https://doi.org/10.1177/107554702237848

van den Burg, S., & **Bogaardt, M.** (2014). Business and biodiversity: A frame analysis. *Ecosystem Services*, *8*, 178–184. https://doi.org/10.1016/j.ecoser.2014.04.005

Wagner, D. (2020). Insect declines in the Anthropocene. *Annual Review of Entomology*, *65*, 457–480. https://doi.org/10.1146/annurev-ento-011019-025151

Wooffitt, R. (2011). Critical Approaches to Discourse Analysis. *Conversation Analysis and Discourse Analysis*, 137–1. https://methods.sagepub.com/book/mono/conversation-analysis-and-discourse-analysis/chpt/critical-approaches-discourse-analysis#_=_

Yanou, M. P., Ros-Tonen, M., Reed, J., Moombe, K., & **Sunderland, T.** (2023). Efforts to integrate local and scientific knowledge: The need for decolonising knowledge for conservation and natural resource management. *Heliyon*. https://doi.org/10.1016/j.heliyon.2023.e21785

Yin, R. K. (2018). *Case study research and applications: Design and methods* (6th ed.). Thousand Oaks, CA: SAGE.

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