Journal of Environmental Policy & Planning

ISSN: 1523-908X (Print) 1522-7200 (Online) Journal homepage: https://www.tandfonline.com/loi/cjoe20

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To cite this article: Sina Leipold, Peter H. Feindt, Georg Winkel & Reiner Keller (2019) Discourse analysis of environmental policy revisited: traditions, trends, perspectives, Journal of Environmental Policy & Planning, 21:5, 445-463, DOI: 10.1080/1523908X.2019.1660462

To link to this article: https://doi.org/10.1080/1523908X.2019.1660462

Published online: 10 Sep 2019.

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JOURNAL OF ENVIRONMENTAL POLICY & PLANNING
2019, VOL. 21, NO. 5, 445–463
https://doi.org/10.1080/1523908X.2019.1660462

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INTRODUCTION

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Discourse analysis of environmental policy revisited: traditions, trends, perspectives

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ABSTRACT
Since the mid-1990s, discourse analysis has become an increasingly established framework in environmental policy analysis. The field has diversified in terms of conceptual approaches, methods, topics, and geographies. This special issue revisits trends and traditions regarding theoretical and methodological approaches, 'old' and 'new' discourses, and our knowledge about discursive effects. We contextualize and discuss the twelve contributions to this special issue against the broader trajectory of the field over the past 25 years. Our analysis reveals an abundance of theoretical approaches with limited cross-fertilization, a plethora of rich case studies but few attempts at meta-analysis, and subtle accounts of discursive effects on discourse, policy and practice without an overarching framework. We suggest seven directions for the field's future evolution: a need for more comparative and multiple-case studies, theoretical cross-fertilization, pro-active integration of non-English-speaking research contexts, development of methodological capabilities to capture discursive developments across larger numbers of publics and policy arenas, a more explicit conceptualization of agency, power and materiality, a stronger collaboration with transdisciplinary approaches, and a reflexive engagement with the 'critical' ambition of discourse analysis.

KEYWORDS
Discourse analysis; discourse theory; environmental policy; policy analysis; discursive effects; policy change

1. Introduction

Since the 2005 special issue 'Does discourse matter? Discourse, power and institutions in the sustainability transition' in the Journal of Environmental Policy and Planning (Feindt & Oels, 2005), no journal has attempted a broader assessment of the dynamic development of discourse research in the area of environmental policy – be it despite or because of the constant growth of analyses applying a discursive lens to environmental policy and planning. This volume aims to address this omission.

The 2005 special issue was published about a decade after prominent policy analysis scholars had called for an 'argumentative turn' (Fischer & Forester, 1993) in the study of public policy. Their interest in arguments and discourse was part of a broader movement to enhance the understanding of the policy process that had generated frameworks like the Multiple Streams Framework, the Advocacy Coalition Framework, the Institutional Analysis and Development Framework or the Punctuated Equilibrium Model (for an overview of these approaches see Weible & Sabatier, 2017). Although some of these frameworks draw upon 'discursive' ideas (e.g. the Multiple Streams Framework), discourse analytical approaches differ from them in operating on the fundamental assumption that 'the relationships between human beings and the world are mediated by means of collectively created symbolic meaning systems or orders of knowledge' (Keller, 2012, p. 2). From this perspective, policy analysts should treat the social objects, subjects and relations they analyze as contingent

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and co-constituted through discursive practices that render some objects knowable and governable and others not. This ontological and epistemological contingency includes scholars' own discursive practices (Fischer & Forester, 1993). The social constructivist base of discourse analytical approaches stands in stark contrast to the positivist conceptualization that characterizes some of the frameworks mentioned above and which stipulates that social objects, subjects and relations can and need to be pre-defined by a theoretical framework that provides identifiable, fixed entities connected through falsifiable cause-effect relationships to allow for systematic observation and the formulation, testing, and modification of hypotheses (e.g. Sabatier, 1999, 2000).

The call for an 'argumentative turn' (Fischer & Forester, 1993) in the study of public policy emerged from a growing interest in the social construction of political issues across sociology, political science and philosophy (crucial works include for instance Brand, Eder, & Poferl, 1997; Eder, 1988; Kingdon, 1984; Kitschelt, 1986; Laclau & Mouffe, 1985; Lau, 1989). Environmental policy analysis in particular saw a rise of discourse studies (Keller, 1998; Litfin, 1994; Nelkin & Pollak, 1981; Taylor & Buttel, 1992), connected to the prominence of environmental protest movements in relation to issues such as acid rain and nuclear power in several countries at that time. These studies investigated the discursive construction of policy problems and governable objects, the shared imagination of feasible and unfeasible policies, the demarcation of appropriate and inappropriate practices, or the shaping of social identities and relations through language, non-linguistic communication and practice. The dynamic developments of this research field in the following decade were the starting point for Feindt and Oels' (2005) special issue that assessed the contemporary 'achievements of and challenges to discourse analysis in environmental policy and planning' (p.161).

Since then, the social constructivist lens on political issues has proliferated. The number of publications relating to 'discourse', 'environmental' and 'policy' has increased so significantly that it has become difficult to cover in a single review. A search with these keywords produced about 2000 studies published since 2005 in Science Direct and more than 3000 in the Wiley database. Discursive approaches have developed into an established perspective in policy analysis (Fischer & Miller, 2017) despite initially substantial controversy relating to their academic potential to advance this field. For instance, discourse analytical approaches were 'ignored' in political science handbooks 'largely on grounds that they don't follow scientific norms' of 'clarity, hypothesis-testing, acknowledgement of uncertainty, etc.' (Sabatier & Weible, 2014, p. 11). While discourse analysis became established as a framework for policy analysis, environmental policy discourses also evolved over the past two decades. For example, environmental multilateralism experienced growing competition from discourses promoting bilateral, non-state, or mixed public/private (hybrid) governance (Lang, Blum, & Leipold, 2019; Leipold & Winkel, 2016), while ecological modernization discourses remain prominent but are continuously reinterpreted, for instance in the shape of 'green', 'circular' or 'bio-economy' discourses (Bugge, Hansen, & Klitkou, 2016). At the same time, the environmental movement has experienced repeated waves of public mobilization, e.g. on ocean plastics and coral bleaching, or more recently the 'Extinction Rebellion' or 'Fridays for Future'. These new conditions provide scholars with novel opportunities and challenges to understand the fundamental dynamics of the social construction of political issues.

As both environmental policy and discourse as well as the concepts and methods for their analysis have significantly evolved, the question arises what discursive policy analysis contributes to our understanding of the field of environmental policy, and how continuously advancing academic discourses and related inquiry connect to the simultaneously developing policy discourses. To address these topics, we pose four analytical questions:

(1) What are theoretical and methodological trends and traditions in environmental discourse analysis?
(2) Have new discourses been discovered and have changes in old discourses been observed?
(3) What do we know about the discursive and non-discursive effects of environmental policy discourses?
(4) How does discourse analysis contribute to our understanding of environmental policy processes and which are the challenges and perspectives for the advancement of discourse analysis in the future?

The open call for this special issue generated about 70 paper proposals, of which 26 were invited for an authors' workshop at the University of Freiburg, Germany. Twelve manuscripts were finally published. This

introduction aims to contextualize the contributions to the special issue in the social science discourse about environmental discourses, to discuss its discursive frontiers and boundaries, and to explore possible future research perspectives. To do so, this article will provide a systematic analysis of the contributions to this issue and link them to other developments in the field. While the twelve papers included in this special issue do not represent the full field of discursive analysis of environmental policy and planning, the collection provides an – albeit incomplete – sense of the diversity of approaches and avenues that have been developed over recent years. The ambition is to stimulate scholarly debate about the contribution of discourse analytical approaches to the advancement of environmental policy analysis. In an era where environmental problems proliferate, aggravate, and continue to be linked to and compete with other policy priorities like economic development, migration management and energy security, examining the current contribution and future potential of the approach to portray and understand the evolution of this policy field is crucial and may be of value beyond the environmental policy field.

2. Theoretical and methodological foundations and directions

Discourse analysis encompasses a broader field of related approaches that can be grouped, inter alia, into those that emphasize the study of either language use or of socio-cultural meaning structures (Keller, 2012; Schiffrin et al., 2001; Upton & Cohen, 2009). The discursive study of environmental policy mostly draws upon discourse theories and analytical approaches that focus on socio-cultural meaning structures, and to a minor degree on language use. These meaning structures are accessed through the identification of general characteristics of text, speech or the symbolic aspect of actions, often related to a specific issue area such as 'climate change' or 'biodiversity'. The majority of socio-cultural discourse approaches is based on the assumption that reality is constructed through processes of social meaning-making, relying on the use of language as well as social practices (Foucault, 1973; Hajer, 1995; Keller, 2012; Laclau & Mouffe, 1985). This assumption emerged from post-positivist and post-structural philosophical orientations that draw upon multi-disciplinary foundations from philosophy (e.g. Dewey, 1927/2012; James, 1920; Peirce, 1992), sociology (e.g. Berger & Luckmann, 1966; Blumer, 1986; Mannheim, 1936), cognitive science (Lakoff & Johnson, 1980) as well as linguistics (Kučera & Francis, 1967). In social and political philosophy more specifically, discourse research was influenced by the analysis of discursive hegemony (Gramsci, 1992; Laclau & Mouffe, 1985), structural-ideational power (Lukes, 1974), power and knowledge creation (Foucault, 1973, 1977), or postmodernity (Lyotard, 1979). Discourse analysis in political science, thus, has been influenced by a variety of philosophical and disciplinary traditions. These were partially translated into analytical approaches, for example Laclau and Mouffe's (1985) Discourse Theory, Roe's (1994) Narrative Policy Analysis, Fairclough's (2003) Critical Discourse Analysis (CDA), Dryzek's (1997) Deliberative Discourse Analysis, Hajer's (1995) Argumentative Discourse Analysis (ADA), and Keller's (1998) Sociology of Knowledge Approach to Discourse (SKAD). Featuring many applications to the environmental policy domain, these approaches all focus on underlying meaning patterns – i.e. discourses – related to policy making (Keller & Poferl, 2011). They are based on the assumption that discourses enable and constrain how political entities and societies understand and act on certain social or physical phenomena that are negotiated in environmental policy making. Discourses can thereby be defined as 'an ensemble of ideas, concepts, and categorizations that is produced, reproduced, and transformed in a particular set of practices and through which meaning is given to physical and social realities' (Hajer, 1993). As these patterns also determine the understanding of specific practices and events in the policy process, they are fundamental to the formation and expression of political truth claims, the engagement in, as well as the self-positioning of individuals and collectives for or against policy change (Fischer, 2003; Leipold & Winkel, 2017).

Some of these approaches draw upon Foucault's (1973) notion of discourses as systems of ideas and practices that construct 'truths' about objects, subjects and social realities and, therefore, are a medium of power relations. Foucault argues that – through discourse – power and knowledge are inter-related and co-present in all social relations. Discourse both produces and constrains subjects. On this basis, the task of academic inquiry is not seeking universal truths but understanding how (multiple, sometimes competing) 'truths' are produced through discourses in historical and spatial contexts. Alongside Foucauldian ideas, many discourse

analysists of environmental policy uphold the concept of political argumentation as practical reasoning (Fischer & Forester, 1993) and of policy analysis as deliberative practice (Fischer, 2003, 2007; Hajer & Wagenaar, 2003), influenced by Habermasian ideas about discourse as the testing of arguments with regard to differentiated validity claims (Habermas, 1984, 1987, 1996). Key themes in this line of thinking are the possibility of political deliberation in the face of competing meta-discourses about the environment (Dryzek, 2013; Dryzek & Pickering, 2017), and also a tension in environmental policy between evidence-based or expertise-based claims on the one hand and experience-based claims by those affected by public policy on the other (Fischer, 2000). From such a perspective, the Foucauldian tendency to relate all knowledge claims to power effects undermines the epistemological and normative foundations for any critique of public policy (Habermas, 1986, chapter X). A third important influence on discourse approaches applied in environmental policy analysis are sociolinguistic perspectives concerned with the mutual effects of social structures, power effects and linguistic content (Fairclough, 2003; Jäger, 2001; Wodak, 2013). These 'critical discourse analysis' approaches are motivated by an ambition to unmask hidden (e.g. capitalist, right-wing) ideological agendas as drivers of political text and talk, to advance democratic stakeholder participation in decision making and to critically analyze discriminatory (e.g. racist, antisemitic) language use, especially in the public sphere or by political actors. In contrast to Foucault's notion of discourse and power-knowledge, which insists on the productivity of power and denies the possibility of any social position 'outside' of power, critical discourse analysists embrace particular social norms to establish critiques of domination and asymmetry in organizational or political decision-making and public language use.

These different traditions of discursive approaches to environmental policy analysis mirror the diversity of the broader field of discourse analysis (for an overview see Keller, 2012; Leipold & Winkel, 2017). Yet, in research practice, these distinct frameworks are rarely applied in a comprehensive sense by environmental policy analysts. Instead, general ideas of discourse research are either used as theoretical inspiration or heuristic and/or integrated into more established policy analysis concepts, e.g. institutionalist frameworks (Arts & Buizer, 2009; Arts, Appelstrand, Kleinschmit, Pülzl, & Visseren-Hamakers, 2010; Leipold, 2014). The overall result is a more or less selective reflection of developments in discourse research by environmental policy scholars.

The discursive analysis of environmental policy has also been influenced by recent developments in public policy analysis such as the Narrative Policy Framework (NPF) (Jones & McBeth, 2010; Jones, Shanahan, & McBeth, 2014). Although its name resembles Roe's (1994) Narrative Policy Analysis, NPF is not part of the landscape of discourse analysis covered in this special issue. NPF scholars clearly distance their work from post-structural ontologies and methods and position NPF as a positivist alternative to the study of policy discourses and narratives. Their aim is to provide an analytical basis for an 'empirical' access to socio-cultural meaning structures (i.e. generated through the analysis of large sets of text data) that stands alongside established 'positivist' frameworks for the analysis of the policy process (for an overview of these approaches see Weible & Sabatier, 2017). In their self-positioning and the reception of their work, the ontological distinction between perceived 'positivist' or 'empiricist' and 'constructivist' policy analysis frameworks becomes very visible. Although constructivist ideas and analysis tools have inspired policy analysis for a long time, e.g. in agenda-setting research (Kingdon, 1984) or frame analysis (Rein & Schön, 1996), attempts to connect discourse analysis to the 'empiricist' school are still scarce due to ontological and epistemological tensions (Jones & Radaelli, 2015). Yet, several scholars have suggested to combine discursive approaches with critical rationalist frameworks of policy analysis (Fuchs, 2005; Gerhards, 1995; Gottweis, 2012; Leipold & Winkel, 2017; Schmidt, 2010; Winkel, Gleißner, Pistorius, Sotirov, & Storch, 2011; Winkel & Leipold, 2016). A development in this direction is the Discursive Agency Approach (DAA) which proposes an analytical heuristic for a systematic exploration of agency from a discourse perspective (Leipold & Winkel, 2017). Other recent discussions in the broader arena of discourse studies explore further directions, for instance suggesting a 'postfoundational discourse theory' (Martilla, 2015) as a new perspective for discourse studies.

Alongside discourse analysis and policy analysis scholarship, other research areas, particularly in sociology and the wider field of political science, have also continued to influence the discursive analysis of environmental policy after 2005. For example, Behagel, Arts, & Turnhout's practice-based approach (in this special issue) connects Foucauldian ideas with sociological practice theory and places a focus on situated agency, logic of practice,

and performativity in environmental policy making and implementation. Stevenson's mapping of discourses using Q method (in this special issue) draws upon earlier work on the theory and practice of deliberative democracy, aiming to identify areas of discursive agreement and disagreement as the basis for improved dialogue. Another discipline that continues to exert influence on the discursive analysis of environmental policy is linguistics. For instance, theories and methods of (computational) corpus linguistics (Baker, 2010; Biber, Douglas, Conrad, & Reppen, 1998; Kučera & Francis, 1967), which have gained renewed interest across different disciplines under the header of 'digital humanities', were recently also applied to environmental policy discourses (Feola & Jaworska, 2018; Grundmann & Krishnamurthy, 2010; Willis, 2017).

In line with this broad spectrum of theoretical and disciplinary influences, the contributions in this special issue present a wide, although selective, range of different theoretical and methodological approaches to the discursive analysis of environmental policy. They bear witness to the growing conceptual and geographical range of environmental policy discourse scholarship over the past fifteen years. At the same time, the contributions show that the application of discursive approaches to environmental policy tends to be shaped by the major approaches or 'schools' in the wider field of discourse analysis. These are summarized in Table 1 (for more information on these, see, for instance, Keller, 2012 or Leipold & Winkel, 2017).

In contrast to the dominance of argumentative-deliberative and Foucault-inspired discourse approaches found in previous reviews of parts of the research field (cf. Leipold, 2014; Winkel, 2012), the papers in this special issue provide a more balanced, albeit still incomplete, inclusion of other approaches. However, the collection confirms the prevailing use of a small number of English language-based approaches (generously including the English translations of Foucault's work). So far, scholars have paid little attention to developments and empirical analysis in other linguistic contexts, such as the lively French or German discussions (Angermüller et al., 2014; Chateauraynaud, 2011; Chateauraynaud & Debaz, 2017; Keller, Hirseland, Schneider, & Viehöver, 2010, 2011; Zittoun, 2009), not to mention developments in other regions of the world.[1] Furthermore, the vivid field of Science and Technology Studies provides interesting conceptual tools and insights which could inform research beyond their core domains of science & technology, but have not yet been taken up in environmental policy analysis (Felt, Fouché, Miller, & Smith-Doerr, 2017).

Methodologically, most contributions to this special issue apply a qualitative case-study design with a mixed-methods approach. As such, they are well in line with the preferred research design of environmental policy analysts in general (Fahey & Pralle, 2016). Data sources in the papers range from existing documents to in-depth interviews, focus groups, observation, and q samples. This is noteworthy, as discourse analyses typically draw merely on existing text data, e.g. policy documents, media articles or academic literature while the use of interviews, focus groups or participant observation data is not common (Leipold, 2014). However, more quantitative methodological advancements like the 'Discourse Network Analysis' (Leifeld, 2009, 2017), which has been increasingly applied to environmental questions and policies (Fisher et al., 2013a, 2013b; Schneider & Ollmann, 2013; Wagner & Payne, 2017), were not reflected in the paper proposals received by the editors of this special issue.

Table 1. Major schools of discourse analytical approaches applied among the contributions.

Schools or approaches	Contributions in this issue applying the approach
Foucault-inspired discourse analysis and governmentality approaches	Bezerra, et al.
	Bäckstrand & Lövbrand
	Behagel, Arts, & Turnhouts (plus practice theory)
Argumentative and deliberative discourse approaches	Stevenson
	Frick-Trzebitzky & Bruns
Post-Marxist and linguistic approaches that focus on the critique of ideology or hegemony	Carvalho, Pinto-Coelho, & Seixas
	Griggs & Howarth
	Mert
Sociology of knowledge approaches	Espinosa
Narrative approaches	Ingram, Ingram & Lejano
	Mcnaghten, Davies, & Kearnes
	McCalman & Connelly

Overall, as we have discussed in this section, the discursive analysis of environmental policy draws upon a rich basis of theoretical and methodological traditions. As we will argue in the concluding section, these could be employed more widely for experimentation and dialogue among discourse analysts.

3. Old and new environmental discourses

There are surprisingly few comprehensive reviews or syntheses of environmental policy discourses (see e.g.Keller & Poferl, 2011). Systematic reviews exist only for studies related to forestry and forest policy discourses (e.g. Arts et al., 2010; Leipold, 2014; Winkel, 2012). In the early days of environmental policy discourse analysis, ecological modernization appeared to be the dominant game in town (Hajer, 1995; Keller, 1998; Litfin, 1994). This was soon followed by the delineation of meta-discourses about human-nature relations and environmental policy. Dryzek (1997), for instance, distinguishes four basic discourses that shape political efforts targeting the environment: 'problem solving', 'sustainability', 'survivalism', and 'green radicalism', which he further differentiated into nine specific discourses such as a techno-optimistic Promethean discourse, a state-centered administrative rationalism discourse, the 'reformist' sustainable development and ecological modernization discourses as well as more 'radical green consciousness' discourses. These agenda-setting works paved the way for a multitude of studies on discourses across all levels of environmental policy (from local to global), various regions of the world, and a broad variety of subjects – ranging from acid rain to climate change and mad cow disease.

Well-researched areas in the literature include the variety of discourses present in *climate governance* (Acosta Frances, van Wessel et al., 2019; Bäckstrand & Lövbrand, 2006; Oels, 2005; Somorin et al., 2012; Winkel et al., 2011), *agricultural policy* (Acosta Frances, van Bommel et al., 2019; Daugbjerg & Feindt, 2017; Erjavec & Erjavec, 2015; Feindt, 2017; Potter & Tilzey, 2005), *forest policy* (Arts et al., 2010; Van Heeswijk & Turnhout, 2013; Winkel, 2014), *renewable energy policy* (Sengers, Raven, & Van Venrooij, 2010; Stevenson, 2009), or *nature conservation policy* (Espinosa, Mert, both in this issue). Prominent discourses featuring in the literature include *environmental neoliberalism* (Humphreys, 2009; Lansing, 2011; Stanley, Marsden, & Milbourne, 2005), *ecological modernization* (Berger, Flynn, Hines, & Johns, 2001; Mol, 2002; Pataki, 2009; Spaargaren & Mol, 1992; Toke & Raghavan, 2010), *sustainable development* (Harlow, Golub, & Allenby, 2013; Vanhulst & Beling, 2014) as well as discourses related to *nature conservation* (Bixler, Dell' Angelo, Mfune, & Hassan Roba, 2015; Bryant, 2000; Buijs, Mattijssen, & Arts, 2014; Campbell, 2007; De Koning et al., 2014; Espinosa, 2013; Tyrrell & Clark, 2014), *biodiversity* (Durand & Vázquez, 2011; Seppänen & Väliverronen, 2003; Väliverronen, 1998), *participation*, in particular of marginalized groups in decision making (Medina, Pokorny, & Weigelt, 2009; Mert, 2009), the *bioeconomy* (Levidow, Birch, & Papaioannou, 2012; Pülzl, Kleinschmit, & Arts, 2014) and *environmental justice/rights of nature* (Espinosa, 2014; Stanley, 2009). Alongside these established research areas and subjects, discourse analysis recently attracted the attention of socio-technical transitions scholars. Concerned with the transition/transformation of contemporary production and consumption systems towards a more sustainable mode of operation, several of these scholars have conceptualized *transition/transformation* itself as

Table 2. Research areas and exemplary discourses prominent in the literature.

Prominent Research Areas	Agricultural policy Climate governance Forest policy Nature conservation policy Renewable energy policy
'Old' Discourses (researched since many years)	Biodiversity Ecological modernization Environmental neoliberalism Nature conservation Participation Sustainable development
'New' Discourses (researched since 2010s)	Bioeconomy Transition/transformation

discourse (Audet, 2016; Feola & Jaworska, 2018). Although this discourse has been found to build upon the ecological modernization discourse, it re-interprets it by conceptualizing society as a complex 'system' (Audet, 2016) and emphasizing individual and collective agency and the interconnectedness of developments across scales and communities. Table 2 summarizes some of the most prominent research areas and discourses.

The majority of these discourses originate from the EU or North American contexts, a study focus of much discourse research (Leipold, 2014; Winkel, 2012). To be sure, a growing number of studies analyze discourses from other contexts. For instance, this volume includes studies on Ghana, Ecuador and Turkey. Moreover, numerous studies have applied Foucauldian (governmentality) perspectives to environmental policy in the 'tropics' (Winkel, 2012). Yet, these analyses are typically conducted by European or North American scholars or researchers from other countries who were trained in European or North American universities. One reason for the geographical bias may be constraints to data collection and analysis in non-democratic political regimes or socio-cultural contexts where individual caution and collective political bias towards ruling elites determine public language and symbolic practices. Another reason may be that the experience of the authors of this introduction as well as the existing literature reviews only include studies published in English and German and, therefore, missed important studies conducted around the globe.

The works in this volume partly build on and partly extend the earlier work on environmental policy discourses. First, six papers document the evolution of a dominant environmental modernization discourse. *Steven Griggs & David Howarth* find underlying discursive continuities in UK aviation policy beneath discursive shifts from the New Labour government's discourse of 'balance' and 'sustainable aviation' to the later emphasis on 'global connectivity' and the 'management' of the environment under a conservative government. The absence of any explicit challenge to the assumption of inevitable growth of demand for air travel is characteristic of a weak ecological modernization discourse that adopts changing storylines in response to wider discursive shifts. *Karin Bäckstrand* & *Eva Lövbrand's* analysis of global climate discourses at Conference of the Parties (COP) meetings of the UNFCCC between 2009 and 2015 confirm the continuing presence of three dominant discourses – green governmentality, ecological modernization and civic environmentalism/climate justice – identified a decade earlier (Bäckstrand & Lövbrand, 2006). The authors emphasize a 'discursive compromise between green governmentality and ecological modernization' to be constitutive for global climate governance after the Copenhagen summit, while more critical voices subsumed under a climate justice perspective remain active but overall sidelined. The narrative analysis by *Carolin McCalman* & *Steve Connelly* of George Monbiot's 'epiphany' suggests the development of a 'new environmentalism' that positions itself against an 'environmental orthodoxy'. Monbiot's new position, however, contains many elements of a technology-oriented ecological modernization discourse. The analysis by *Joana Bezerra et al.* reveals how the 'biochar discourse' increasingly aligns with a globalist environmental modernization discourse, while the more participatory and socio-ecological motives are sidelined into an increasingly marginalized 'Terra Preta discourse'. The case studies by *Fanny Frick-Trzebitzky & Antje Bruns* as well as by *Anabela Carvalho, Zara Pinto-Coelho & Eunice Seixas* also demonstrate the hegemony of a weak ecological modernization discourse that privileges technological solutions to environmental problems.

Second, two papers find elaborated discourses of environmental participation. These, however, display great variation, depending on the specific local context. The discourse of 'community forest management' analyzed by *Jelle Behagel, Bas Arts & Esther Turnhout* constitutes a variation of the environmental participation discourse and is adopted very differently depending on the local context. While the counter-discourses in the Sonora Desert at the US-Mexican border revealed by *Mrill Ingram, Helen Ingram and Raul Lejano* resonate with participatory discourses, they also adopt 'Anthropocene' ideas of human-nature interactions.

Third, two papers contrast a dominant, technology-friendly discourse with less visible counter-discourses. *Phil Macnagthen*, *Sarah R. Davies* & *Matthew Kearnes* identify a dominant 'enlightenment' narrative about the emerging nanotechnologies as well as an 'ancient' and a 'modern' counter-narrative as cultural repertoires that render new technology meaningful. *Hayley Stevenson's* Q analysis, based on 451 documents from the period 2011–2013, finds three discourses that structure international stakeholder debates on sustainable economic development: 'Radical Transformationism' rejects economic growth and market-based solutions in favor of cooperation, sharing and redistributive reform; 'Cooperative Reformism' sees sustainability, capitalism, and

economic growth as compatible and calls for reasonable reform and innovations; 'Statist Progressivism' presents a 'vision of a sustainable economy based on the pursuit of wellbeing and happiness rather than gross domestic product' (Stevenson), where state interventions support marginalized communities and pro-environmental forms of production and consumption.

Fourth, two papers find discursive connections between environmental discourses and emerging counter-discourses. *Ayşem Mert's* analysis of the Gezi Park protests in Istanbul shows how environmental demands helped to mobilize a 'countrywide resistance movement against the hyper-developmentalist environmental and urban policies of the government'. *Cristina Espinosa* shows the alignment of a 'rights of nature' discourse with environmental and indigenous discourses in the Pacha Mama movement. In both cases the antagonists fall into Dryzek's category of a 'Promethean' discourse.

The contributions to this special issue show that many studies build on earlier discursive categorizations and confirm earlier studies' findings of the dominance of policy discourses connected to ecological modernization. Two papers (Ingram, Ingram, & Lejano; Bezerra et al.) relate to an Anthropocene discourse which subsumes alternative visions for future environmental policy as well as basic ideas of ecological modernization implying top-down, techno-managerial planning (Dürbeck, 2019). We argue that this picture is typical for the wider landscape of discursive analyses of environmental policy. It illustrates a Janus-faced nature of environmental policy discourses. On the one hand, the contributions demonstrate that earlier categories of environmental discourse are still useful. On the other hand, the studies show considerable spatial and temporal variation in the articulation and institutionalization of environmental policy discourses. This ambivalent conclusion implies a serious puzzle: With so much creative variation in the local adaptations of dominant discourses and the emergence of novel counter-discourses, how can the discursive fundamentals remain so stable over time, and to what extent do academic discourses and analytical lenses affect these findings?

Despite the difficulty to assess the state of knowledge regarding the evolution of environmental discourses without a systematic review, this volume's contributions and related works in the field suggest that environmental policy discourse scholarship:

(1) tends to conduct thematic or spatial case studies of well-established discourses in novel or changing settings,
(2) often aims to identify possibly novel discourses in current political developments,
(3) conducts very few comparative or meta-analyses of discourses across thematic or spatial contexts, and
(4) lacks broader attempts to systematize patterns of discursive continuity, evolution and innovation.

Given discourse researchers' aim to critically reflect on societal debates abstracting from the concrete setting to unveil underlying discursive patterns and constraints, it is noteworthy that current research practice shows few attempts at identifying discursive meta-structures or patterns. The currently dominant practice appears to foster a proliferation of discursive snapshots and often tailor-made conceptual and methodological designs. This could create barriers to learning across studies and to the (theoretical) development of generic accounts of persistent and changing discursive patterns.

4. Discursive effects in environmental policy and planning

The contributions to this special issue demonstrate that discourses can affect change or inertia at various levels of policy making – from discourse itself and its rules to policy outcomes and institutional settings. To be sure, these effects are always contextual. The contributions' findings reveal, however, some notable tendencies (see Table 3). First, most contributors find persistence or incremental change of discourses (and of connected institutions and policies), often accompanied by policy outcomes that are perceived as being dissatisfactory and a corresponding potential for 'radical' discursive or social change. Only one contribution attributes institutional change to discursive interventions (Espinosa in this issue). Second, the contributions provide comprehensive descriptions of discursive effects on discourse rules, patterns or objects, while social or institutional effects are less prominently investigated. Third, structural discursive forces are identified as the source of discursive

Table 3. Nature and types of discursive effects and their source in the contributions to this special issue.

Contribution	Direction of discursive effects (persistence vs. change)	Types of discursive effects	Source of discursive effects
Griggs & Howarth	Discursive continuity and closure with incremental change	Knowledge effects: e.g. privileging certain understandings of objects, connections etc. Effects on discourse formations (rules, patterns)	Discursive logic of hegemony
Macnagthen, Davies & Kearnes	Discursive persistence with incremental change Marginalization of alternative narratives leading to dissatisfaction with policy outcomes	Enabling social mobilization: dominant discourse producing counter-narratives, leading to rejection of public management Enabling certain governance outcomes and constraining others: institutional and procedural arrangements unsuited to meet public demands/fears	Individuals' interpretation of situations on the basis of established narrative patterns (within social groups)
Bäckstrand & Lövbrand	Discursive persistence with incremental change Discursive assimilation of new ideas into established discourses	Knowledge effects: e.g. privileging certain understandings of objects, connections etc. Agency and legitimacy for certain groups Enabling certain governance outcomes and constraining others: persistence of global managerialism	Co-constitution of discourses, knowledge and institutions; consciousness dispersed within policy or expert communities
Stevenson	Persistence of discursive ambivalence with incremental change	Knowledge effects: e.g. privileging certain understandings of objects, connections etc.	Co-constitution of discourses, knowledge and institutions; consciousness dispersed within policy or expert communities
Bezerra et al.	Discursive capture of alternative discourses by 'old' ecological modernization discourse	Knowledge effects: establishment of new, hegemonic definition Exclusion of groups from (monetary) resources Constrained social mobilization, affecting patterns of social connections, networks and social identities	Co-constitution of discourses, knowledge and institutions; consciousness dispersed within policy or expert communities
Behagel, Arts & Turnhout	Contextual assimilation of standardizing and participatory discourses Uneven policy outcomes	Knowledge effects: e.g. privileging certain understandings of objects, connections etc. Enabling social mobilization: enabling groups to challenge governance arrangements Agency and legitimacy for certain groups Effects on policy outcomes and implementation: translation of new concepts/narratives into institutions and/or (implementation) practices, enabling or constraining conflict among groups	Dispersed across complex fields of practice that co-constitute social order and practice
Carvalho, Pinto-Coelho & Seixas	Closure of policy process, i.e. intentional limitation of potential demands for change	Knowledge effects: e.g. privileging certain understandings of objects, connections etc. Agency and legitimacy for certain groups Constrained social mobilization: institutional and procedural arrangements affecting discourse formation (rules, patterns), patterns of social connections, networks and social identities Effects on policy outcomes and implementation: insulating public policy against legitimate public demands and concerns	Public administrations and their strategic management of discursive formats and practices to limit public demands for change
Frick-Trzebitzky & Bruns	Dissatisfactory policy outcomes, i.e. policy 'failure'	Knowledge effects: e.g. privileging certain understandings of objects, connections etc.	Public administrations, policy elites and a mismatch of their discourse with practitioners' experiences

(*Continued*)

Table 3. Continued.

Contribution	Direction of discursive effects (persistence vs. change)	Types of discursive effects	Source of discursive effects
		Enabling certain governance aspects and constraining others: addressing wrong/biased objects of governance Effects on policy outcomes and implementation: hindering local adaptation, causing resignation Knowledge effects: exclusion of strategies that may be beneficial to more people	
McCalman & Connelly	Potentially 'radical' discursive change	Knowledge effects: introducing new, 'problematic' ideas in environmental discourse and provoking responses Constrained social mobilization: new concepts and ideas potentially weakening established environmental narratives and agency of the 'traditional' environmental movement	The individual consciousness of a 'movement intellectual' and his/her ability to shape public discourse
Ingram, Ingram & Lejano	Potentially 'radical' bottom-up social change	Knowledge effects: re-focusing attention away from objects associated with dominant discourse Enabling social mobilization: creating patterns of social connections and networks as well as new social identities	Plurivocal consciousness of social networks constituted through narrative construction and interpretation of reality
Mert	Potentially 'radical' bottom-up social change	Knowledge effects: introducing new language and problems into established political parties Enabling social mobilization: sparking new movements, new political engagement	Presence of hegemonic and counter-hegemonic forces; conscious habitualization and institutionalization of counter-discourse; political mobilization and subversive change of political language through social movements
Espinosa	Institutional change	Knowledge effects: existence of new counter-discourse Enabling social mobilization: new concepts and ideas enabling global alliances Effects on policy outcomes and implementation: adoption of new concepts and ideas in constitution	Social movement entrepreneurs and established groups exploiting discursive affinities in problem construction for mobilization and institutionalization

effects more frequently than the agency of individuals or social groups. These tendencies are in line with the findings of Winkel (2012) and Leipold (2014).

The first group of contributions, describing persistence of dominant discourses with incremental change, identify effects on knowledge (the discursive constitution of objects, connections etc.), rules or patterns of discourse formation, governance objects and corresponding policy outcomes and implementation, social mobilization, and the agency, legitimacy or participation of specific groups. *Steven Griggs & David Howarth* find a logic of hegemony that connects variegated demands to established objects, concepts, subjects/coalitions and strategies and deflects challenging demands. This logic affects the rules that determine the formation of discourse, the relevance of governance objects, concepts, subjects and strategies, and the links between discursive and non-discursive processes. *Phil Macnagthen*, *Sarah R. Davies* & *Matthew Kearnes* show that British technology policy remains largely detached from public narratives that render new technologies meaningful. They identify a repertoire of five co-existing archetypical narratives that shape public conscience and argue that the absence of most of these narratives from 'formal processes of technological appraisal' in fact 'limits public involvement in societal agenda-setting to the role of the consumer'. This affects public mobilization and acceptance of new technologies, creates institutional and procedural arrangements unsuited to meet public demands and fears, and may lead to a widespread rejection of public management. *Karin Bäckstrand & Eva Lövbrand* demonstrate how subtle shifts in the three dominant climate governance discourses – green governmentality,

ecological modernization and civic environmentalism/climate justice – enable a discursive continuation of the 'global managerialism from the Kyoto era' that privileges existing governance objects and instruments while providing agency and legitimacy to a larger group of actors who then support the existing system. This creates discursive barriers to anything but the most incremental governance innovations. *Haley Stevenson's* Q analysis of the global debate on sustainable economic development reveals that a shift from older forms of ecological modernization to 'Cooperative Reformism' emphasizes burden sharing. At the same time, a 'Statist Progressivism' discourse emphasizes wellbeing and happiness, and differs from 'Radical Transformationism' in particular over the monetarization of ecological values as a conservation strategy. Stevenson finds predominantly knowledge effects, suggesting that the 'varied terminology itself obscures actual points of agreement and disagreement'. *Joana Bezerra et al.* demonstrate how the invention of the new concept of 'biochar' in expert discourses replaced the original term 'Terra Preta'. In the process, the object became detached from Amazonian nature, archaeology and indigenous culture. The decontextualized technological 'biochar' was then easily embedded within established international ecological modernization discourses. The authors expect this discursive shift to affect international donors' development strategies and, as a consequence, indigenous and local groups will loose monetary benefits and the potential to mobilize against their discursive and material exclusion.

Three contributions demonstrate effects of discourses on policy outcomes. *Jelle Behagel, Bas Arts & Esther Turnhout* show that similar discourses of community forest management in Ethiopia and Tanzania created very different local practices, with positive impacts for forests only in Tanzania. They argue that, depending on the context, the translation of new concepts into existing institutions and/or practices can provide agency and legitimacy for certain groups and enable them to challenge existing governance arrangements. *Fanny Frick-Trzebitzky* & *Antje Bruns* analyze how arguments in strategic policy documents that do not match the experiences of practitioners and affected groups can undermine policy implementation. This undesirable effect occurred because causes, consequences and strategies in policy arguments were disjointed and important argumentative premises were not disclosed or even obscured. *Anabela Carvalho, Zara Pinto-Coelho & Eunice Seixas* explain how the participatory genre of 'notice and comment' restricted the ability of citizens to exert influence on a national planning process at the argumentative, rhetorical and interactional levels. Their case shows how administrative communities' deliberate management of discursive formats and practices can reinforce unequal power relations between policy proponents and participating individuals without open suppression of opposing positions.

The remaining four studies, which find discursive, social, or institutional alterations, highlight social, indigenous or intellectual movements or networks as drivers of change. They argue that plurivocity and cultural resonance of narratives are crucial for social mobilization and institutionalization of discursive change. In this vein, discursive change paves the way for new political solutions, new actors on the political stage, and eventually, also new institutions and power relations. *Mrill Ingram, Helen Ingram & Raul Lejano* demonstrate how narratives enable policy change by communicatively creating novel connections that transcend established spatial, social and political divisions, and include social as well as ecological processes in the Sonora Desert at the US-Mexican border. *Ayşem Mert's* analysis emphasizes the importance of discourse for the agency of protesters in social mobilization. She shows that the Turkish Gezi Park protests challenged the populist hegemony of the Erdoğan regime by constructing a counter-hegemonic chain of equivalence. The discursive effects became transformative through continued political mobilization, a subversive change of the language of politics and the exacerbation of governability problems. *Cristina Espinosa*'s analysis of the Pacha Mama movement in Ecuador demonstrates how discursive affinities in the problem construction and the positioning of actors facilitated coordinated mobilization across different social groups despite otherwise different discursive problematizations and narratives. These 'discursive affinities' resulted in an institutionalization of rights of nature that protect this discourse and its proponents in intensified struggles over extraction. Nevertheless, its enforcement depends on the broader, partly transnational constellation of political and economic discourses and actors. Finally, *Caroline McCalman & Steve Connelly* show how the 'epiphany' of a prominent 'movement intellectual' can shape a 'new environmentalism' discourse with the potential to affect the perceptions and identities of others who might emulate the transformative narrative.

In summary, scholars have identified a broad variety of effects on knowledge and discourse formation, governance logics, policy outcomes and implementation, agency and legitimacy, as well as social mobilization. At the same time, it is difficult to separate discourse evolution from discursive effects 'outside' or 'beyond' discourses, especially as the difference between the two is not conceptualized explicitly, and effects on material structures and physical properties (e.g. of environmental goods and resources) are hardly investigated. Connections between discursive developments (e.g. the introduction of a new concept like 'biochar') and their non-discursive effects (e.g. constraining indigenous people's voices in policy making and the distribution of resources) are often not explicitly described or investigated as systematically as discursive effects on discourses. Instead, effects of discourses are usually highlighted in the discussion rather than in the results section and authors do not usually distinguish between discursive and non-discursive effects. Some scholars also hypothesize about potential future effects (e.g. Mert; Ingram, Ingram, and Lejano; Espinosa in this issue). Yet, the materialization of the 'expected effects' (or lack thereof) is rarely investigated over time. In terms of the sources of discursive effects, most authors identify structural forces (e.g. logics of hegemony) rather than the agency of individuals or groups (e.g. specific strategies of language use). Although 'administrators' and 'experts' appear in many contributions, they are mostly portrayed as more or less active perpetuators of the status quo. How they are being affected by dominant or counter-discourses is rarely the focus of investigation. The core group described as perceiving the effects of discourses, and often at the receiving end, are social or indigenous movements and networks or 'the public'. These findings suggest a need to develop more systematic and theoretically grounded accounts for the investigation of the discursive and non-discursive effects of discourse. It would be particularly interesting to investigate the interlinkages of discourse evolution and its non-discursive effects across many cases.

5. Perspectives

The discursive analysis of environmental policy has matured over the past 25 years. The contributions to this volume bear witness to the growing topical, conceptual and geographical range of the field. They highlight a remarkable continuity of dominant environmental policy discourses over the past decades while also uncovering novel, alternative or marginalized discourses in various settings around the globe. Scholars have applied a multiplicity of discursive approaches to environmental policy and have thereby participated in the development of a number of established 'schools' in the wider field of discourse analysis and interpretive policy analysis (see table 1). The popularity of discourse approaches in environmental policy analysis helped to establish certain approaches in discourse analysis and discursive policy-making as a relevant and productive lens for understanding policy processes. The co-existence of multiple theoretical traditions has important effects on the structuration of the academic discourse in the field, with both enabling and constraining consequences for its development. We will now highlight seven challenges emerging from these structural peculiarities.

First, the conceptual diversity, while providing scholars a rich menu of heuristics and frameworks to choose from, simultaneously creates barriers for the consolidation of knowledge and for learning across a larger number of studies. The dearth of systematic reviews in the field and the complete absence of meta-studies might well be an effect of the multiplicity of theoretical traditions. Any attempt to identify overarching discursive developments and patterns in the manifold arenas of environmental policy making will quickly run into a dilemma between the need to apply a set of consolidated categories and the ability to do hermeneutic justice to the subtleties of each theoretical approach. Discourse scholars have been reluctant to adopt the standardizing methods of systematic reviews and meta-studies. Consequently, the potential for such reviews to integrate findings from larger numbers of discursive studies remains untapped. Instead, methodologically, we find a dominance of single-case studies in environmental discourse analysis. One reason for this favoring of single-case studies over more complex and demanding research designs may be the general pressure on researchers to publish quickly and in large quantities, an observation that resonates with broader discussions about trade-offs between the quantity and depth of research outputs. As a comparative perspective and meta-studies bring together and interpret discursive developments and events from multiple (sub-)cultural contexts and languages, they

require greater effort and versatility in theoretical accounts, methods, and to some extent multiple languages and (sub-)cultures.

Second, theoretical cross-fertilization across the different analytical frameworks remains limited. Creative combinations of elements from different theoretical traditions can be useful to enrich the research design of case studies, as several contributions to this special issue demonstrate. However, such conceptual eclecticism can also impede the development of coherent sets of theoretical assertions. A more systematic approach towards conceptual reflexivity and even conceptual plurivocity would be desirable, especially considering that the majority of the most frequently applied discourse analytical approaches have been developed more than two decades ago.

Third, the general dominance of English as the medium of international academic communication is likely to favor studies of English language discourse and studies from countries with corresponding research cultures (in particular the UK, the Netherlands and Scandinavian countries). Linguistic barriers have not only impeded the reception of individual scholars, but have also reinforced the dominance of theoretical approaches published in English. A concerted effort to include a broader range of theoretical traditions whose main proponents have published their key works in languages other than English would be desirable. This, however, requires an openness to a broader repertoire of academic genres and writing styles, rather than an enforced adaptation to the dominant research culture.

Fourth, in absence of overarching theoretical assertions, scholars often use established discourses as a hermeneutic guardrail when examining discursive constellations. The analysis then tends to focus on the reconstruction of 'old' as compared to 'new' discursive patterns. Methods that create more openness and opportunity for surprise are desirable. One source of inspiration could be quantitative text analysis methods used to inductively extract discursive patterns from large text data. As these recently attracted renewed attention among many researchers under the header of 'digital humanities', this momentum could be used to inspire novel approaches and generate new findings. Vice versa, the quantitative approaches could benefit from triangulation with qualitative analyses. In addition, the development of a data base and methodology that enable mapping the circulation of established discourses and the emergence of new ones would be desirable, as their diffusion and development across policy arenas, levels of governance and geographies is not well understood. Certainly, this would require significant resources and international, multi-linguistic cooperation. In the absence of such a 'discourse observatory', 'discourse tracing' – or genealogy in Foucauldian terms – is probably the best available alternative to study the circulation and origin of discursive elements.

Fifth, a particularly important issue for environmental policy continues to be the relations between discursive, institutional and material dimensions of social order and practice (cf. Feindt & Oels, 2005, p. 169). Several discourse analytical approaches have included artefacts and material practices in their analysis. However, we are lacking an overarching framework for the analysis of the effects of discourses on the availability of discursive, institutional or material resources for different groups and agents, and how such distributions could be challenged effectively. While various discursive effects on discursive and non-discursive practices have been identified (see section 4 above), consolidated theories and methodologies for the study of discursive effects are still lacking. Here, the integrative development of a conceptual framework, based on a meta-analysis of existing studies, could be a promising approach. The discursive analysis of environmental policy might also benefit from a more in-depth engagement with concepts of power. Several contributions to this issue as well as a vast number of case studies in the field demonstrate the prevalence of ecological modernization discourses accompanied by varying counter-discourses. Attempts at change are often stifled. Systematic reviews could help to better understand the underlying drivers and factors of discursive stability and change. Such systematic engagement requires a clear distinction of discourse evolution and discursive effects, as well as an engagement with concepts of agency, power and materiality. An interdisciplinary engagement with other disciplinary lenses on agency and materiality could help to generate such distinction and develop a critical academic debate on mechanisms that provide agency to marginalized groups or that can affect power relations.

Sixth, the critical ambition of discursive studies deserves more explicit attention. Many discursive studies aim to 'draw attention to marginalized discourses which offer alternative policy options' and to 'open[s] up new opportunities for the democratization of the processes of naming and producing the "environment"'

(Feindt & Oels, 2005, pp. 169, 170). Most discursive studies succeed with the first part: The discursive approach per se emphasizes the contingency of social practices and discourses. The second part is more difficult. We lack systematic knowledge about the discursive and non-discursive effects of discourse scholarship on environmental issues outside the academic silo. We also lack theories and methodologies that could guide cooperation and co-creation of discursive scholarship with non-academic partners. A stronger engagement of discourse scholars with transdisciplinary approaches would benefit both fields – by challenging discourse scholars to develop a clearer approach for putting their critical ambition into practice, and by infusing transdisciplinary studies with the reflexivity enabled by discourse analysis.

Finally, and connected to the fifth and sixth challenge, the explicit and implicit strategies of critique offered by many discourse studies requires more reflection. Many case studies more or less openly criticize ecological modernization discourses, invoking e.g. participation, democratization, de-growth, de-globalization and technology skepticism as core components of a counter-narrative. Yet, their accounts remain fragmented and relatively little debate exists about geographical, cultural, linguistic or topical tendencies in these representations or about the question whether researchers should 'critically' create counter-discourses. A stronger engagement in meta-learning could provide the opportunity to create an overarching account of environmental (policy) discourses that aggregates and, thus, explicates the implicit critiques of many case studies and reconstructs their functions within these studies.

Overall, a reflexive engagement with scholars' own discourses about environmental policy analysis is a worthwhile endeavor that has the potential to resonate far beyond the field. We hope that this special issue will inspire such engagement.

Note

1. For the German discussion see also Zeitschrift für Diskursforschung/Journal for Discourse Research (Weinheim: Beltz Juventa), ed. by Reiner Keller, Werner Schneider and Willy Viehöver.

Acknowledgments

We express our gratitude for the financial support for this Special Issue and this Editorial by the Eva Mayr-Stihl Stiftung under the grant 'Fragmentierung der Internationalen Waldpolitik', the German Research Foundation, project 'Discursive fragmentation of the international forest regime complex' [PAK 813] as well as the German Federal Ministry of Education and Research, research group 'Circulus – Opportunities and challenges of transition to a sustainable circular bio-economy' [031B0018].

Disclosure statement

The authors declare no financial in terest or benefit that has arisen from the direct applications of their research.

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References

Acosta Frances, M., van Bommel, S., van Wessel, M., Ampaire, E. L., Jassogne, L., & Feindt, P. H. (2019). Discursive translations of gender mainstreaming norms: The case of agricultural and climate change policies in Uganda. *Women's Studies International Forum*, *74*, 9–19.

Acosta Frances, M., van Wessel, M., van Bommel, S., Ampaire, E., Jassogne, L., & Feindt, P.H. (2019). The power of narratives: Explaining inaction on gender mainstreaming in Uganda's climate change policy. *Development Policy Review*, forthcoming.

Ahey, B.K., & Pralle, S. B. (2016). Governing complexity: Recent developments in environmental politics and policy. *Policy Studies Journal*, *44*(S1), S28–S49.

Angermüller, J., Nonhoff, M., Herschinger, E., Macgilchrist, F., Reisigl, M., Wedl, J., … Ziem, A. (2014). *Diskursforschung. Ein interdisziplinäres Handbuch. 2 Bde*. Bielefeld: transcript.

Arts, B., Appelstrand, M., Kleinschmit, D., Pülzl, H., & Visseren-Hamakers, I. (2010). Discourses, actors and instruments in international forest governance. In P. Rayner, J. Buck, & A. Katila (Eds.), *Embracing complexity: Meeting the international forest governance challenge: International union of forest research organisation* (pp. 57–74).

Arts, B. J. M., Appelstrand, M., Kleinschmit, D., Pülzl, H., Visseren-Hamakers, I. J., Atyi, R. E. A., … Yasmi, Y. (2010). Discourses, actors and instruments in international forest governance. In *Embracing complexity: Meeting the challenges of international forest governance. A global assessment report. Prepared by the Global Forest Expert Panel on the International Forest Regime* (No. 28, pp. 57–74). Vienna: International Union of Forest Research Organizations (IUFRO).

Arts, B., & Buizer, M. (2009). Forests, discourses, institutions: A discursive-institutional analysis of global forest governance. *Forest policy and economics*, *11*(5-6), 340–347.

Audet, R. (2016). Transition as discourse. *International Journal of Sustainable Development*, *19*(4), 365–382.

Bäckstrand, K., & Lövbrand, E. (2006). Planting trees to mitigate climate change: Contested discourses of ecological modernization, green governmentality and civic environmentalism. *Global Environmental Politics*, *6*(1), 50–75.

Baker, P. (2010). *Sociolinguistics and corpus linguistics*. Edinburgh: Edinburgh University Press.

Berger, G., Flynn, A., Hines, F., & Johns, R. (2001). Ecological modernization as a basis for environmental policy: Current environmental discourse and policy and the implications on environmental supply chain management. *Innovation: The European Journal of Social Science Research*, *14*(1), 55–72.

Berger, P. L., & Luckmann, T. (1966). *The Social Construction of Reality*. New York: Doubleday.

Biber, D., Douglas, B., Conrad, S., & Reppen, R. (1998). *Corpus linguistics: Investigating language structure and use*. Cambridge: Cambridge University Press.

Bixler, R. P., Dell' Angelo, J., Mfune, O., & Hassan Roba, H. (2015). The political ecology of participatory conservation: Institutions and discourse. *Journal of Political Ecology*, *22*, 164–182.

Blumer, H. (1986). *Symbolic interactionism: Perspective and method*. Berkeley, CA: University of California Press.

Brand, K. W., Eder, K., & Poferl, A. (1997). *Ökologische Kommunikation in Deutschland*. Opladen: Westdt. Verlag.

Bryant, R. L. (2000). Politicized moral geographies. Debating biodiversity conservation and ancestral domain in the Philippines. *Political Geography*, *19*(6), 673–705.

Bugge, M. M., Hansen, T., & Klitkou, A. (2016). What is the bioeconomy? A review of the literature. *Sustainability*, *8*(7), 691–712.

Buijs, A., Mattijssen, T., & Arts, B. (2014). The man, the administration and the counter-discourse: An analysis of the sudden turn in Dutch nature conservation policy. *Land Use Policy*, *38*, 676–684.

Campbell, L. M. (2007). Local conservation practice and global discourse: A political ecology of sea turtle conservation. *Annals of the Association of American Geographers*, *97*(2), 313–334.

Chateauraynaud, F. (2011). *Argumenter dans un champ de forces. Essai de balistique sociologique*. Paris: éditions Pétra.

Chateauraynaud, F., & Debaz, J. (2017). *Aux bords de l'irréversible. Sociologie pragmatique des transformations*. Paris: éditions Pétra.

Daugbjerg, C., & Feindt, P. H. (2017). Post-exceptionalism in food and agricultural policy: Transforming public policies. *Journal of European Public Policy*, *24*(11), 1565–1584.

De Koning, J., Winkel, G., Sotirov, M., Blondet, M., Borras, L., Ferranti, F., & Geitzenauer, M. (2014). Natura 2000 and climate change—polarisation, uncertainty, and pragmatism in discourses on forest conservation and management in Europe. *Environmental Science & Policy*, *39*, 129–138.

Dewey, J. (1927/2012). *The public and its problems. An essay in political inquiry*. Edited and with an introduction by Melvin L. Rogers. University Park, PA: Pennsylvania State University Press.
Dryzek, J. S. (1997). *The politics of the earth: Environmental discourses*. New York: Oxford University Press.
Dryzek, J. S. (2013). *The politics of the earth* (3rd ed.). Oxford: Oxford University Press.
Dryzek, J. S., & Pickering, J. (2017). Deliberation as a catalyst for reflexive environmental governance. *Ecological Economics*, *131*, 353–360.
Durand, L., & Vázquez, L. B. (2011). Biodiversity conservation discourses. A case study on scientists and government authorities in Sierra de Huautla Biosphere Reserve, Mexico. *Land Use Policy*, *28*(1), 76–82.
Dürbeck, G. (2019). Narratives of the anthropocene in interdisciplinary perspective. In G. Comos & C. Rosenthal (Eds.), *Anglophone literature and culture in the anthropocene* (pp. 22–44). Cambridge: Cam¬bridge Scholars Publishing.
Eder, K. (1988). *Die Vergesellschaftung der Natur. Studien zur sozialen Evolution der praktischen Vernunft*. Frankfurt am Main: Suhrkamp.
Erjavec, K., & Erjavec, E. (2015). 'Greening the CAP'–just a fashionable justification? A discourse analysis of the 2014–2020 CAP reform documents. *Food Policy*, *51*, 53–62.
Espinosa, C. (2013). The riddle of leaving the oil in the soil-Ecuador's Yasuní-ITT project from a discourse perspective. *Forest Policy and Economics*, *36*, 27–36.
Espinosa, C. (2014). The advocacy of the previously inconceivable: A discourse analysis of the Universal declaration of the Rights of mother earth at Rio+ 20. *The Journal of Environment & Development*, *23*(4), 391–416.
Fairclough, N. (2003). *Analysing discourse: Textual analysis for social research*. London and New York: Routledge Taylor and Grancis Group.
Feindt, P. H. (2017). Agricultural policy. In H. Heinelt & S. Münch (Eds.), *Handbook of European policy: Formulation, development and Evaluation* (pp. 115–133). London: Edward Elgar.
Feindt, P. H., & Oels, A. (2005). Does discourse matter? Discourse analysis in environmental policy making. *Journal of Environmental Policy & Planning*, *7*(3), 161–173.
Felt, U., Fouché, R., Miller, C. A., & Smith-Doerr, L. (2017). *The handbook of science and technology studies*. Boston, MA: MIT Press.
Feola, G., & Jaworska, S. (2018). One transition, many transitions? A corpus-based study of societal sustainability transition discourses in four civil society's proposals. *Sustainability Science*, online first.
Fischer, F. (2000). *Citizens, experts, and the environment: The politics of local knowledge*. Durham, NC: Duke University Press.
Fischer, F. (2003). *Reframing public policy: Discursive politics and deliberative practices*. Oxford: Oxford University Press.
Fischer, F. (2007). Deliberative policy analysis as practical reason: Integrating empirical and normative arguments. In F. Fischer, G. Miller, & M. S. Sidney (Eds.), *Public policy analysis: Theories, politics, and methods* (pp. 223–236). London: CRC/Taylor & Francis.
Fischer, F., & Forester, J. (Eds.). (1993). *The argumentative turn in policy analysis and planning*. Durham, NC: Duke University Press.
Fischer, F., & Miller, G. J. (Eds.). (2017). *Handbook of public policy analysis: Theory, politics, and methods*. London: Routledge.
Fisher, D. R., Leifeld, P., & Iwaki, Y. (2013a). Mapping the ideological networks of American climate politics. *Climatic change*, *116* (3-4), 523–545.
Fisher, D. R., Waggle, J., & Leifeld, P. (2013). Where does political polarization come from? Locating polarization within the US climate change debate. *American Behavioral Scientist*, *57*(1), 70–92.
Foucault, M. (1973). *The birth of the clinic: An archaeology of medical perception*. London: Tavistock.
Foucault, M. (1977). *Discipline and Punish: The Birth of the Prison* (Alan Sheridan, Trans). New York: Vintage Books.
Fuchs, D. A. (2005). Commanding heights? The strength and fragility of business power in global politics. *Millennium - Journal of International Studies*, *33*(3), 771–801.
Gerhards, J. (1995). Framing-dimensions and framing-strategies: Contrasting ideal and real type frames. *Social Science Information*, *34*, 225–248.
Gottweis, H. (2012). Political rhetoric and stem cell policy in the United States: Embodiments, scenographies, and emotions. In F. Fischer & H. Gottweis (Eds.), *The argumentative turn revisited: Public policy as communicative practice* (pp. 211–235). Durham, NC: Duke University Press.
Gramsci, A. (1992). *Prison notebooks* (Vol. 2). Columbia University Press.
Grundmann, R., & Krishnamurthy, R. (2010). The discourse of climate change: A corpus-based approach. *Critical Approaches to Discourse Analysis Across Disciplines*, *4*(2), 125–146.
Habermas, J. (1984). *Theory of communicative action, volume one: Reason and the rationalization of society* (Thomas A. McCarthy, Trans). Boston, MA: Beacon Press.
Habermas, J. (1986). *Der philosophische Diskurs der Moderne*. Frankfurt: Suhrkamp.
Habermas, J. (1987). *Theory of communicative action, volume two: Lifeworld and system: A critique of functionalist reason (Book)* (Thomas A. McCarthy, Trans). Boston, MA: Beacon Press.
Habermas, J. (1996). *Between facts and norms: Contributions to a discourse theory of law and democracy*. Cambridge, MA: MIT Press.

Hajer, M. (1993). Discourse coalitions and the institutionalization of practice: The case of acid rain in Britain. In F. Fischer & J. Forester (Eds.), *The Argumentative Turn in Policy Analysis and Planning* (pp. 43–76). Durham, NC: Duke University Press.
Hajer, M. (1995). *The politics of environmental siscourse: Ecological modernization and the policy process*. Oxford: Oxford University Press.
Hajer, M., & Wagenaar, H. (Eds.). (2003). *Deliberative policy analysis: Understanding governance in the Network society*. Cambridge: Cambridge University Press.
Harlow, J., Golub, A., & Allenby, B. (2013). A review of utopian themes in sustainable development discourse. *Sustainable Development*, *21*(4), 270–280.
Humphreys, D. (2009). Discourse as ideology: Neoliberalism and the limits of international forest policy. *Forest Policy and Economics*, *11*(5-6), 319–325.
Jäger, S. (2001). *Kritische Diskursanalyse: Eine Einführung*. Duisburg: DISS.
James, W. (1920). *The letters of William James* (Vol. 1). Boston: Little, Brown.
Jones, M. D., & McBeth, M. K. (2010). A narrative policy framework: Clear enough to be wrong? *Policy Studies Journal*, *38*(2), 329–353.
Jones, M. D., & Radaelli, C. M. (2015). The narrative policy framework: Child or monster? *Critical Policy Studies*, *9*(3), 339–355.
Jones, M., Shanahan, E., & McBeth, M. (2014). *The science of stories: Applications of the narrative policy framework in public policy analysis*. Berlin, Tokyo et al.: Springer.
Keller, R. (1998). *Müll - die gesellschaftliche Konstruktion des Wertvollen. Die öffentliche Diskussion über Abfall in Deutschland und Frankreich*. Opladen: VS Verlag für Sozialwissenschaften.
Keller, R. (2012). *Doing discourse research. An introduction for social scientists*. London: Sage.
Keller, R., Hirseland, A., Schneider, W., & Viehöver, W. (Eds.). (2010). *Handbuch Sozialwissenschaftliche Diskursanalyse. Bd. 2: Forschungspraxis. 4. Erweiterte Ed*. Wiesbaden: VS-Verlag.
Keller, R., Hirseland, A., Schneider, W., & Viehöver, W. (Eds.). (2011). *Handbuch Sozialwissenschaftliche Diskursanalyse Bd. 1: Theorien und Methoden. 3. aktualisierte und erweiterte Auflage*. Wiesbaden: VS-Verlag.
Keller, R., & Poferl, A. (2011). Umweltdiskurse und Methoden der Diskursforschung. In M. Groß (Ed.), *Handbuch Umweltsoziologie* (pp. 199–220). Wiesbaden: VS Verlag für Sozialwissenschaften.
Kingdon, J. (1984). *Agendas, alternatives and public policies*. Boston: Little Brown.
Kitschelt, H. P. (1986). Political opportunity structures and political protest: Anti-nuclear movements in four democracies. *British Journal of Political Science*, *16*(1), 57–85.
Kučera, H., & Francis, W. N. (1967). *Computational analysis of present-day American English*. Providence, RI: Brown University Press.
Laclau, E., & Mouffe, C. (1985). *Hegemony and radical democracy in hegemony and socialist strategy*. London: Verso.
Lakoff, G., & Johnson, M. (1980). *Metaphors we live by*. Chicago, IL: University of Chicago Press.
Lang, S., Blum, M., & Leipold, S. (2019). What future for the voluntary carbon offset market after Paris? An explorative study based on the discursive agency approach. *Climate Policy*, *19*(4), 414–426.
Lansing, D. M. (2011). Realizing Carbon's value: Discourse and calculation in the production of Carbon Forestry Offsets in Costa Rica. *Antipode*, *43*(3), 731–753.
Lau, C. (1989). Risikodiskurse: Gesellschaftliche Auseinandersetzungen um die Definition von Risiken. *Soziale Welt*, *40*, 418–436.
Leifeld, P. (2017). Discourse network analysis. In *The Oxford handbook of political networks* (pp. 301). Oxford University Press.
Leipold, S. (2014). Creating forests with words — a review of forest-related discourse studies. *Forest Policy and Economics*, *40*, 12–20.
Leifeld, P. (2009). *Anhang B Die Untersuchung von Diskursnetzwerken mit dem Discourse Network Analyzer (DNA)*. Politiknetzwerke: Modelle, Anwendungen und Visualisierungen, 391.
Leipold, S., & Winkel, G. (2016). Divide and conquer—discursive agency in the politics of illegal logging in the United States. *Global Environmental Change*, *36*, 35–45.
Leipold, S., & Winkel, G. (2017). Discursive agency: (Re-)conceptualizing actors and practices in the analysis of discursive Policymaking. *Policy Studies Journal*, *45*(3), 510–534.
Levidow, L., Birch, K., & Papaioannou, T. (2012). EU agri-innovation policy: Two contending visions of the bio-economy. *Critical Policy Studies*, *6*(1), 40–65.
Litfin, K. T. (1994). *Ozone discourse: Science and politics in global environmental cooperation*. New York: Columbia University Press.
Lukes, S. (1974). *Power: A radical view*. New York: Macmillan.
Lyotard, J.-F. (1979). *La condition postmoderne. Rapport sur le savoir*. Paris: Minuit.
Mannheim, K. (1936). *Ideology and Utopia*. London: Routledge.
Marttila, T. (2015). *Post-foundational discourse analysis: From political difference to empirical research*. London: Palgrave MacMillan.
Medina, G., Pokorny, B., & Weigelt, J. (2009). The power of discourse: Hard lessons for traditional forest communities in the Amazon. *Forest Policy and Economics*, *11*(5-6), 392–397.

Mert, A. (2009). Partnerships for sustainable development as discursive practice: Shifts in discourses of environment and democracy. *Forest Policy and Economics*, *11*(2), 109–122.
Mol, A. P. J. (2002). Ecological modernization and the global economy. *Global Environmental Politics*, *2*(2), 92–115.
Nelkin, D., & Pollak, M. (1981). *The atom besieged: Extraparliamentary dissent in France and Germany*. Cambridge, MA: MIT Press.
Oels, A. (2005). Rendering climate change governable: From biopower to advanced liberal government? *Journal of Environmental Policy & Planning*, *7*(3), 185–207.
Pataki, G. (2009). Ecological modernization as a paradigm of corporate sustainability. *Sustainable Development*, *17*(2), 82–91.
Peirce, C. S. (1992). *The essential peirce: Selected philosophical writings* (Vol. 2). Bloomington, IN: Indiana University Press.
Potter, C. A., & Tilzey, M. (2005). Agricultural policy discourses in the European post-Fordist transition: Neoliberalism, neomercantilism and multifunctionality. *Progress in Human Geography*, *29*(5), 581–600.
Pülzl, H., Kleinschmit, D., & Arts, B. (2014). Bioeconomy – an emerging meta-discourse affecting forest discourses? *Scandinavian Journal of Forest Research*, *29*(4), 386–393.
Rein, M., & Schön, D. (1996). Frame-critical policy analysis and frame-reflective policy practice. *Knowledge and Policy*, *9*(1), 85–104.
Roe, E. M. (1994). *Narrative policy analysis. Theory and practice*. Durham/London: Duke University Press.
Sabatier, P. A. (1999). Fostering the development of policy theory. In P. A. Sabatier (Ed.), *Theories of the policy process* (pp. 261–276). Boulder, CO: Westview Press.
Sabatier, P. A. (2000). Clear enough to be wrong. *Journal of European Public Policy*, *7*(1), 135–140.
Sabatier, P. A., & Weible, C. M. (2014). *Theories of the policy process* (3rd ed.). Boulder, CO: Westview Press.
Schiffrin, D., & Tannen, D. (Eds.). (2001). *The handbook of discourse analysis*. Oxford: Blackwell.
Schmidt, V. A. (2010). Taking ideas and discourses seriously: Explaining change through discursive Institutionalism as the fourth "New Institutionalism". *European Political Science Review*, *2*(1), 1–25.
Schneider, V., & Ollmann, J. K. (2013). *Punctuations and displacements in policy discourse: The climate change issue in Germany 2007-2010* (pp. 157–183).
Sengers, F., Raven, R. P., & Van Venrooij, A. H. T. M. (2010). From riches to rags: Biofuels, media discourses, and resistance to sustainable energy technologies. *Energy Policy*, *38*(9), 5013–5027.
Seppänen, J., & Väliverronen, E. (2003). Visualizing biodiversity: The role of photographs in environmental discourse. *Science as Culture*, *12*(1), 59–85.
Somorin, O. A., Brown, H. C. P., Visseren-Hamakers, I. J., Sonwa, D. J., Arts, B., & Nkem, J. (2012). The Congo Basin forests in a changing climate: Policy discourses on adaptation and mitigation (REDD+). *Global Environmental Change*, *22*(1), 288–298.
Spaargaren, G., & Mol, A. P. J. (1992). Sociology, environment, and modernity: Ecological modernization as a theory of social change. *Society & Natural Resources*, *5*(4), 323–344.
Stanley, A. (2009). Just space or spatial justice? Difference, discourse, and environmental justice. *Local Environment*, *14*(10), 999–1014.
Stanley, K. G., Marsden, T., & Milbourne, P. (2005). Ernance, rurality, and nature: Exploring emerging discourses of state forestry in Britain. *Environment and Planning C: Government and Policy*, *23*(5), 679–695.
Stevenson, R. (2009). Discourse, power, and energy conflicts: Understanding Welsh renewable energy planning policy. *Environment and Planning C: Government and Policy*, *27*(3), 512–526.
Taylor, P. J., & Buttel, F. H. (1992). How do we know we have global environmental problems? Science and the globalization of environmental discourse. *Geoforum; Journal of Physical, Human, and Regional Geosciences*, *23*(3), 405–416.
Toke, D., & Raghavan, S. (2010). Ecological modernisation as bureaucracy: Organic food and its certification in the UK and India. *International Journal of Green Economics*, *4*(3), 313–326.
Tyrrell, M., & Clark, D. A. (2014). What happened to climate change? CITES and the reconfiguration of polar bear conservation discourse. *Global Environmental Change*, *24*(1), 363–372.
Upton, T. A., & Cohen, M. A. (2009). An approach to corpus-based discourse analysis: The move analysis as example. *Discourse Studies*, *11*(5), 585–605.
Väliverronen, E. (1998). Biodiversity and the power of metaphor in environmental discourse. *Science Studies*, *11*(1), 19–34.
Van Heeswijk, L., & Turnhout, E. (2013). The discursive structure of FLEGT (Forest Law Enforcement, Governance and Trade): The negotiation and interpretation of legality in the EU and Indonesia. *Forest Policy and Economics*, *32*, 6–13.
Vanhulst, J., & Beling, A. E. (2014). Buen vivir: Emergent discourse within or beyond sustainable development? *Ecological Economics*, *101*, 54–63.
Wagner, P., & Payne, D. (2017). Trends, frames and discourse networks: Analysing the coverage of climate change in Irish newspapers. *Irish Journal of Sociology*, *25*(1), 5–28.
Weible, C. M., & Sabatier, P. A. (Eds.). (2017). *Theories of the policy process* (4th ed.). New York, NY: Westview Press.
Willis, R. (2017). Taming the climate? Corpus analysis of politicians' speech on climate change. *Environmental Politics*, *26*(2), 212–231.
Winkel, G. (2012). Foucault in the forests—A review of the use of 'foucauldian' concepts in forest policy analysis. *Forest Policy and Economics*, *16*, 81–92.

Winkel, G. (2014, July). When the pendulum doesn't find its center: Environmental narratives, strategies, and forest policy change in the US Pacific Northwest. *Global Environmental Change*, *27*, 84–95.

Winkel, G., Gleißner, J., Pistorius, T., Sotirov, M., & Storch, S. (2011). The sustainably managed forest heats up: Discursive struggles over forest management and climate change in Germany. *Critical Policy Studies*, *5*(4), 361–390.

Winkel, G., & Leipold, S. (2016). Demolishing dikes: Multiple streams and policy discourse analysis. *Policy Studies Journal*, *44*(1), 108–129.

Wodak, R. (Ed.). (2013). *Critical discourse analysis: Four volumes*. London: Sage.

Zittoun, P. (2009). Understanding policy change as a discursive problem. *Journal of Comparative Policy Analysis: Research and Practice*, *11*(1), 65–82.