Decline of 'biodiversity' in conservation policy discourse in Australia

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ABSTRACT

Market-based instruments along with conceptualizing the environment as a collection of 'ecosystem services' has become increasingly common within environmental and conservation policy. This kind of thinking is also increasingly prominent in the public discourse surrounding environment and conservation policy, particularly in the context of communicating the importance of policy measures. Language used in public discourse can have a powerful influence on how people engage with policy issues, and changes within the biodiversity and conservation discourse may have consequences for public engagement in conservation. We explored how these factors are changing with time by documenting the use of the terms 'bio' and the prevalence of economic language in the text of 3553 media releases between 2003 and 2014 from the Australian Government environment portfolio, and 1064 media releases from the Australian Conservation Foundation (ACF). Results show that in the last decade, the term 'biodiversity' has become less prevalent whilst economic language has increased in both Australian Government and ACF communication. A further content analysis in a subsample of 745 media releases explored the prevalence of ecosystem services framing, results indicating that it has become a mainstream concept. While this may reflect a strategic response by these agencies to better engage with both the general public and decision makers within what is an increasingly dominant neoliberal paradigm, we argue it may also have unintended (possibly adverse) impacts on how people think about and engage with biodiversity conservation.

1. Introduction

How we think about an issue is significantly influenced by the way it is represented in the discourse within which it sits. Consequently, environmental discourse influences how 'the environment' is understood and addressed by society (Dryzek, 2013; Gustafsson, 2013), including how it is governed (Fairclough, 1992; Coffey, 2015). Given that we are in the midst of a 'biodiversity crisis', this raises questions about how biodiversity is represented within the discourse concerning public environmental policy. Biodiversity loss is recognized as one of the most critical environmental problems (Gordon, 2006; Gustafsson, 2013) and remains so, despite global efforts to tackle it (Butchart et al., 2010).

Public environmental policy is typically a responsibility of national governments, although this is often shared with regional state governments or other local jurisdictions who may have different priorities and objectives. Many national governments have specific responsibilities for biodiversity conservation as signatories to the Convention on Biological Diversity (1992). This makes environmental policy inherently political in its nature. It is also of central importance to conservation NGOs,

some of which have direct roles in conservation programs, but most of which seek to play some role in conservation advocacy. It has been argued that environmental NGOs are uniquely suited to build the links and advocate for the actions needed to curb biodiversity loss (Gunter, 2004). As a result, both governments and conservation NGOs provide a significant contribution to the public political discourse on environmental and conservation issues. Much of this discourse is in the form of media releases about prominent environmental policy issues of the day.

One approach to analyzing discourse is to identify different 'frames'. While there is no precise universal definition of what a 'frame' is (Capella and Jamieson, 1997; Druckman, 2001), frames generally "select some aspects of a perceived reality and make them more salient in a communicating text" (Entman, 1993, pp 52). In this way frames can provide both a framework by which people "locate, perceive, identify, and label" information and events (Goffman, 1974, pp 21) and thereby understand the world, and also provide a central organizing idea which makes sense of relevant events, and highlights what is at issue (Gamson and Modigliani, 1989). All information exists within a frame of some kind, and it is well established that the way information is presented

and framed can significantly affect the way people understand and respond (e.g. Harris, 1973; Tversky and Kahneman, 1981; Gamson and Modigliani, 1989; Entman, 1993; Druckman, 2001). As such, understanding how issues within a discourse are framed can provide insight into the way issues are thought about by a society.

Of interest to us is how the public environmental policy discourse has changed over the last decade, including the concept of 'biodiversity' and the use of economic rationales within the discourse. 'Biodiversity' is the contracted form of 'biological diversity' and lacks precise definition, but is generally used to conceptualize heterogeneity at multiple levels of biology, such as within organisms, within populations, within communities and within biomes (Haila and Kouki, 1994). As such, the same term can be used with different meanings within different contexts (Haila and Kouki, 1994; Kaennel, 1998), including as shorthand for 'life on Earth', or as a natural resource to be exploited (Haila and Kouki, 1994). Biodiversity loss has become one of the key issues of the environmental movement (Takacs, 1996) and is central to the discipline of conservation science. Arguably this connection has (at least previously) enabled biodiversity loss to remain a relevant public policy issue where concern for other environmental issues has been subject to the 'issue-attention cycle' (Hannigan, 1995). However, concern about biodiversity loss has seen the term 'biodiversity' used across many disciplines (Väliverronen, 1998) and in myriad ways, ensuring that it has become a more complex concept than its original 'biological diversity' (Takacs, 1996).

Concurrent with the evolution of the term biodiversity, is the genesis and increasingly prominent concept of 'ecosystem services'. Ecosystem services are the useful and essential services that nature provides humans, for example, a supply of clean air, drinking water, food, building materials, pollination, etc. Originally developed in the 1970s as a communication tool to attract public interest in biodiversity conservation (Westman, 1977), it is arguably now "the dominant paradigm framing research and policy making in biodiversity, ecology and conservation biology" (Silvertown, 2015, pp 641) and facilitates the valuation of biodiversity in monetary terms (Costanza et al., 1997; Spash, 2008; Silvertown, 2015). This is consistent with the broader rise of neoliberal ideology in public policy since the late 1970s (Purcell, 2009), including within environmental policy (Coffey, 2015), and co-incides with the more recent decline in power and authority (in the 2000s) of the environmental protections afforded at the national level of OECD countries (Mol, 2016).

Here we ask whether there has been an increase in the use of 'ecosystem services' within environmental policy communication, similar to that which has occurred within policy making, and if so, whether this corresponds to an increase in economic arguments appearing alongside environmental arguments in the policy communication discourse. We are also interested in how the frequency of use of the term 'biodiversity' within environmental policy discourse compares with its use within the scientific discourse. As a starting point in tackling these complex issues, we used Australia as a case study and analyzed the text of media releases from the Australian Government environment portfolio and the Australian Conservation Foundation (ACF), a large conservation advocacy NGO who "speak out for the air we breathe, the water we drink and the places and wildlife we love" (www.acf.org.au). Thus biodiversity is a key element of what the ACF seek to protect, although (like the Australian Government environment portfolio) it is only one aspect of the greater 'whole' that is the target of their advocacy. As such, the context and manner in which the media releases from both organizations discuss biodiversity is of interest. We tracked use of the term 'biodiversity' and the prevalence of economic language over the period 2003 to 2014 in all Australian Government and ACF media releases. This time frame allows trends over this recent decadal period to be observed. We also investigated the prevalence of ecosystem services framed rationales within a subsample from each organization.

Because a discourse enables people to interpret information and

create meaning and narratives about issues, changes in the frequency of terms and concepts may be indicative of a change in how they are understood. We offer here an initial dataset to track changes in the way biodiversity is framed in this public discourse over time. Our vision is that researchers can contribute to this database and explore future trends, building on the data longitudinally, or with other terms, or from other sources and regions. To our knowledge, this kind of investigation has not previously been undertaken, and Australia makes an interesting initial case study, as it represents a large industrialized economy (member of the G20) and a nation with a long history of stable democratic government and which also has had a long standing conservation movement.

2. Methods

In order to be able to understand how the data from the policy discourse compares with the scientific discourse, we first interrogated the Web of Science database (Web of Science, 2016) and recorded the proportion of publications for each year that included the terms 'biodiversity' and 'ecosystem services' within title, abstract or keywords between 1995 and 2015.

We then analyzed the policy discourse by first conducting a text search to document the prevalence of key terms in 4617 media releases. These comprised of 1064 media releases published by the Australian Conservation Foundation between 2004 and 2014 and 3553 media releases published by Ministers within the Australian Government environment portfolio ('Australian Government') between 2003 and 2014. The ACF releases were downloaded from the ACF website (www.acf.org.au) and the Australian Government releases from 2003 to 2012 were provided by the Department of the Environment and those from 2013 to 2014 were downloaded from the Department of the Environment website (www.environment.gov.au). The ACF provides an appropriate NGO comparator to the Australian Government, as it campaigns on a national level and is one of the most prominent national environmental advocates in Australia, although it may not necessarily be considered a proxy for all Australian NGOs.

All Individual media releases were subjected to key word searches. We searched for the term 'biodiversity' and for the term 'econo' as the root of 'economic', 'economy', and 'economist', allowing the inference that the presence of these terms indicate that economic considerations are present in a media release (Fig. 1). In order to compare use of these terms over time, we calculated the percentage of the total media releases that contained at least one instance of a term for each year, for both the ACF and the Australian Government media releases. Although the presence (or absence) of the term 'biodiversity' or of economic language doesn't give any information about the broader frame within which these concepts are used, changes in the frequency with which these concepts are used can provide an indication that the way in which these concepts are thought of or are communicated, have changed.

We also conducted a more detailed latent content analysis on a subsample of 745 media releases. This comprised of 229 ACF (approximately 20% of all 1064 ACF releases) and 516 Australian Government (approximately 15% of all 3553 Australian Government releases) media releases to identify those that framed the environment in terms of 'ecosystem services' within any part of the document (Fig. 1). The specific term 'ecosystem services' itself was unsurprisingly not present in the media releases, as this is a technocratic term with little meaning for the public with whom the media releases seek to communicate. However, we were interested in the presence of statements that used this conceptual logic (present in many releases), which necessitated a content analysis, rather than a simple text search. Latent content analysis was necessary as there is no keyword or phrase that could be considered diagnostic for the presence of ecosystem services logic or rationale. Given that the Australian Government environment portfolio has from time to time included policy areas such as arts and heritage, to ensure that the sub-sample of Australian Government