



Does expertise matter? An in-depth understanding of people's structure of thoughts on nature and its management implications



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ABSTRACT

Understanding people's way of thought on the natural environment may improve communication and collaboration between professionals and stakeholders from the general public. Focusing on similarities and differences between professionals and the public, this study investigates the relation between people's way of thought and actual attitudes towards conservation measures. Based on an innovative hybrid of quantitative and qualitative research methods, we show that people's thoughts on nature and landscape have a specific structure, consisting of clusters of normative (how we value it), experiential (how we experience it emotionally) and descriptive (how we define it) meanings. Although professionals and the public use similar structure of thoughts, the specific content and relevance of these thoughts differ significantly. Professionals referred to normative meanings four times more often than the public. Because analysis showed people's general thoughts on nature informed concrete attitudes on conservation measures, these results have clear management implications. For example, we found important differences in the preferred conservation focus. Contrary to the professional focus on species, habitats and ecosystem health, the public tended to evaluate conservation measures on their effects on individual animals and trees and their consequences for scenic quality. Results may help practitioners to find common ground for discussing with critical groups in society. Expanding communication from predominantly normative arguments to include also the emotional connotations of nature may contribute to a shared emotional connection with the public that can be a powerful tool to overcome resistance and build shared visions on conservation issues.

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1. Introduction

Diverging views between conservation professionals and the general public increasingly threaten legitimacy and effectiveness of conservation efforts (Engelen et al., 2008). Consequently, conservationists and practitioners nowadays acknowledge the need to include the views of all stakeholders affected by it, i.e. farmers, hunters, entrepreneurs and local communities (Reed, 2008). Stakeholders increasingly criticize the strong focus on biodiversity in conservation efforts (Keulartz, 2009) and policy makers often face implementation problems and local resistance against conservation measures, including the implementation of Natura 2000, the European network of protected nature areas (Rauschmayer et al., 2009; Stoll-Kleemann, 2001). At least three reasons for these implementation problems are frequently mentioned: (i) a classic top-down policy, based on scientific ecological expertise, ignoring the interests of many local stakeholders who are substantially affected by the proposed management measures (Engelen et al., 2008), (ii) the growing dominance of the legal

system in spatial decision-making, undermining the position of informal institutions performing at the local level (Beunen et al., 2013) and (iii) a shortage in effective communication and collaboration between ecological experts and the public (Rauschmayer et al., 2009). This article focuses on increasing effective communication and collaboration.

Public attitudes are much less erratic and unpredictable as sometimes is suggested (Hunter and Brehm, 2003), and attitudes should thus not be investigated as single concepts, without embedding these attitudes in broader structures of thought (Johansson and Henningsson, 2011). Instead, attitudes often are integrated in stable "structures of thoughts" about our natural environment (Bang et al., 2007; Fischer et al., 2011). For example Figari and Skogen (2011) have shown that social conflicts on large carnivores are not based on antagonistic attitudes about the wolf, but on complex cognitions about the wolf as a fundamentally wild animal that is acceptable in wilderness areas, but not in rural areas. They argue that practitioners can only communicate effectively about wolf issues if also the relationship with issues related to rurality, wilderness and rewilding are taken into consideration. Consequently, to understand how attitudes on conservation measures may differ between e.g. experts and the public, we need to understand these

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structures of thought and relate them to specific attitudes on conservation issues.

To understand the relationship between attitudes and structure of thoughts, we turn to social representations theory (Moscovici, 2000). The study of social representations of nature (in this paper truncated as “representations”) is a growing field of interest in conservation studies and environmental psychology (Buijs et al., 2012; Hovardas and Stamou, 2006; Selge et al., 2011). The theory describes how people’s ideas about their natural environment are cognitively organized into representations of nature. Although most people are not consciously aware of their representations, they implicitly use these representations to understand and communicate about the conservation of nature. Social representation theory emphasizes the *structure* of people’s thoughts, in which knowledge, values, and beliefs are interrelated. Representations are developed in interactions with other people (Moscovici, 2000). As such, ecologist and non-ecologists will develop different representations, related to differences in knowledge, education, and the social groups in which they participate. Although most agree that experts have different views on biodiversity conservation and thus use different representations of nature than the public (Buijs et al., 2011), little detail is known on the exact nature of these differences.

The relevance of representations of nature stems from its close relationship with people’s attitudes on conservation issues. Previous work has shown that representations of nature inform attitudes on e.g. nature restoration (Buijs et al., 2011), wolf protection schemes (Figari and Skogen, 2011) and invasive species management (Selge et al., 2011). Unfortunately, only a few studies empirically compare the differences between expert and lay views on either attitudes or representations. Available research suggests differences exist both in support for nature protection in general as well as in the appropriate goals and methods of conservation efforts. Consequently, Daugstad et al. (2006) have argued that to understand conservation attitudes, we need to understand not only attitudes on the needed *level of protection* but also attitudes on the *why and how of protection*. The latter difference seems to relate to both the scope of protection (ecosystems versus individual animals and plants) and people’s interpretation of landscape aesthetics (Gobster et al., 2007; Hunziker et al., 2008).

Interpretation of scope especially seems to differ between the protection of species and habitats versus the protection of individual plants and animals (Stenmark, 2002). This relates to the normative question what concepts and elements of nature are most worthy of protection. In ecology, conservation strategies are usually evaluated on the effects a holistic scale of ecosystems, habitats and species. That is, on the functioning of an ecosystem as a whole, in which individual plants and animals are perceived as components of a larger system. However, preliminary studies show that the general public tend to answer this normative question differently (Buijs, 2009). They evaluate conservation strategies not on how it affects abstract ecosystems, but on how it affects individual living beings, each and every one. This distinction has previously been summarized as the individualistic versus the holistic interpretation of non-anthropocentric (intrinsic) values (Stenmark, 2002). It has been empirically shown that social disputes on the goals and methods of conservation are related to tensions between individualistic and holistic interpretations. For example, large sections of the public consider the culling of invasive species or clear-cutting segments of a forest to enlarge a valuable habitat a serious intrusion on their respect for individual living organisms (Buijs et al., 2011).

Differences on the why and how of protection also relate to the aesthetic evaluation of conservation strategies. Whereas professionals tend to focus on healthy ecological systems, lay people often believe management should focus on accessible and scenic

landscapes. Gobster et al. (2007) suggest that different preferences and attitudes of professionals and non-professionals are based on the difference between ‘ecological aesthetics’ expressed by ecological experts, and ‘scenic aesthetics’ expressed by lay people. Based on this difference, they criticize the influence of landscape paintings and the ensuing aesthetic preferences that have been dominant ever since the Romantic era. Scenic aesthetics are then disqualified as a ‘shallow’ or ‘hedonistic’ view that is based only on the visual perception of landscapes (e.g. De Vries et al., 2007). Ecological aesthetics, on the other hand, is portrayed as incorporating a broader, more elaborated palette of landscape characteristics. In ecological aesthetics, preferences for landscapes are directly related to recognition of the ecological health of a landscape, based on knowledge about the ecological relations. The two types of appreciation are thus related to different types of thought. While with scenic aesthetics, the affective or expressive reaction to nature and landscapes are central in people’s line of thought; in ecological aesthetics the cognitive reactions to nature and landscapes are central, with more focus on knowledge and understanding of ecological processes as manifested in the landscape (Gobster et al., 2007; but see also Ulrich, 1983).

Diverging attitudes on these prioritized themes, i.e. the level of protection, the focus of protection (ecocentric versus biocentric), and the importance of aesthetic use by human beings are frequent sources for conservation conflicts. Explicitly comparing attitudes of experts with the public on these themes might help to understand conflicts regarding conservation measures. But as the wolf example already illustrated, such attitudes are embedded in broader representations of nature. Relating the understanding of specific attitudes to broader representations of nature can help practitioners to understand not only people’s attitudes about such issues, but also how these attitudes come about. Furthermore, it helps to understand the way lay people talk about it and how to successfully select language and wording that resonates with the public’s understanding of the issue.

The general aim of this paper is therefore to improve our understanding of conflicts and of communicative pitfalls and difficulties between experts and the public on the conservation of the natural environment. For this, we investigate (i) the structure and content of the representations people use to understand nature and landscape, (ii) the relation between these representations and specific attitudes towards nature conservation measures, and (iii) the differences between professionals and the general public in representations and attitudes. We explicitly focus on both nature and landscape, as research has shown that for the general public in the Netherlands, natural areas are often not only interpreted as ‘nature’ but also, or even more so, as ‘natural landscapes’ (Buijs, 2009).

2. Methods

2.1. Survey

This study is based on a questionnaire combining qualitative and quantitative techniques. The first part of the questionnaire is based on a word association task as a method to capture people’s structure of thoughts. Word association tasks are considered to tap into the implicit meanings people attach to the stimulus term. Although rarely used in environmental research, word association tasks are common methods in psychology to unravel people’s cognitive schema’s, models, or social representations (Haartsen et al., 2003). As the number of different associations tends to be limited, it is usually possible to summarize free associations in a relatively limited number of categories. Word association methods are an interesting combination of qualitative and quantitative research.

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