

# Public



Social representations  
of nature and  
local practices

Arjen Buijs



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# **Public** Na- tures

**Social representations  
of nature and  
local practices**

Arjen Buijs

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Public Natures:  
Social representations of nature and local  
practices

Arjen Buijs

**Thesis**

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## **Public Natures: Social representations of nature and local practices**

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## Voorwoord

Een mooie tijd in mijn loopbaan loopt op zijn eind. Een unieke kans om even een stap terug te doen uit de hectiek van Alterra. Een tijd om ideeën na te jagen waar normaal geen ruimte voor is. Een tijd ook waarin ik veel heb geleerd. Aanvankelijk ook een rustige tijd. Niet meer vijf afspraken per dag met allerlei telefoontjes tussendoor, maar gewoon de gehele dag concentreren op je proefschrift. Alhoewel aan het eind van een proefschrift de hectiek natuurlijk weer toeneemt, heb ik toch genoten van de autonomie van deze periode.

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Tegelijkertijd ben ik ook blij dat ik al die tijd ook bij Alterra mijn projecten ben blijven draaien. Want full-time met een promotie bezig zijn, lijkt me ook weer wat eenzaam. En nog veel belangrijker, een beetje promovendus komt, afgezien van de veldwerkperiode, slechts zelden in de echte wereld. En juist het werken voor de echte wereld is wat voor mij dit werk zo aantrekkelijk maakt. Wetenschap is leuk, maar wetenschap die ook nog in praktijk wordt gebracht is nog veel leuker. Mede dankzij de projecten bij Alterra ben ik met beide benen op de grond gebleven.

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Het samenstellen van een coherent team van promotoren en co-promotoren is essentieel voor een prettig verloop van het proces. Mijn team is enigszins toevallig tot

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# Introduction





# 1 Introduction

## 1.1 Those were the days

Once upon a time, I could hike through some of the most beautiful parts of the Netherlands and fully enjoy the peace, beauty, and historicity of Dutch nature. I could experience the restorative effects of nature by freeing the mind. Ah, those were the days...

Hiking through the Dutch countryside is still one of my favorite pastimes. However, because it has become my professional field of interest, it can no longer provide a real contra-structure for my professional life. Consequently, I can never fully reach the state of detachment that is so typical of a hiking experience. Nature is no longer a quiet background for daydreaming. It no longer refers only to the natural processes that have shaped it into the current landscape. It no longer simply “is.” Just as many naturalists recognize the results of complex ecological processes when they look at natural areas, I started to recognize the result of complex social and political processes – the recreational zoning of the area, the ecological theories behind apparent management strategies, the critical questions of local residents, and the political quarrels related to economic and ecological changes in land use.

For example, some years ago I went on a short holiday break to Diever in order to enjoy the Drents Friese Wold National Park, and I noticed how significant parts of the forest had been felled, apparently to enhance the area of drift sand. I like the open views and the smell of “desert” in this area, and I am not particularly fond of vast expanses of coniferous woods. So no worries there. But then I wondered: What do the local residents think of these management practices? Do they support this transformation of the forest, or are they attached to the old coniferous forest that has dominated the area for so long? I remembered stories from other areas where respondents had wistfully witnessed the felling of parts of the woods their grandparents had planted. Furthermore, if local residents were not to agree with this management, what would they do? Would their discontent be limited to the usual complaining at social gatherings? Or would they stand up and resist the measures planned for the area – measures that are based on experts’ views on biodiversity and naturalness? This experience motivated me to choose this area as a case study for a European project on biodiversity management.

Another example. The winter of 2009 was the Netherlands’ first genuine winter in many years, and some friends and I decided to make the most of this opportunity and go ice-skating. We went to the Oostvaardersplassen – one of the largest and most

impressive wetlands in the Netherlands. This area is usually off-limits to visitors, but ice-skating opportunities tend to lead the Dutch to break all the rules. We had a rare chance to experience the area's wildness and lack of management. While skating, we were struck by the many dead and decaying trees in and around the lakes. We were surprised by the beauty of the area, and saddened by the strict access regulation to which the area is normally subjected.

During a break, one of my friends expressed his delight at the show of naturalness all around us: "You really feel quite tiny when skating among these old, decaying trees." Most of us agreed, and nobody felt sorry for the dying trees – until another friend mentioned the discussion in the national media about the wholesale starvation of wild horses due to the winter conditions. This friend felt that the media has good reason to criticize the National Forest Service (NFS). According to him, because the NFS introduced these large herbivores into the Oostvaardersplassen for grazing purposes, it is responsible for their well-being and should provide them with additional food. He considered it an act of cruelty to regulate the herd by letting the horses starve to death. Most of us, however, supported the management strategy and argued that this is just "the way it is" in nature.

These are just two of examples of the complex interplay between nature management and society at large. Although nature managers usually have the best intentions, they may find it difficult to understand the views of the general public. Many of the site managers, policy makers, water managers, and ecologists I spoke with, told me how difficult it is to understand how lay people<sup>1</sup> differ with experts in their views on nature. The existence of considerable diversity within the general public and between different stakeholders makes it even more difficult to understand. Many said that they feel that the views of the general public are fluid and not really intelligible. Such conversations often ended with an Dutch saying: "Well, one cannot argue over personal taste." In this thesis, I argue that the views of the Dutch public are much less erratic and incomprehensible as some may think.

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<sup>1</sup> In this thesis, I frequently speak of "lay people" when referring to the general public. However, using this term does not imply a view of the public as ignorant and not having any knowledge or understanding of nature and its processes. On the contrary, citizens are often experts in regard to their own local environments (e.g. Fischer, 2000). The term is merely used to demarcate residents, tourists, and other non-professional actors from professional, often ecologically trained, actors. As such, I use "lay people," "non-professionals," and "the public/general public" more or less interchangeably in this thesis.

## 1.2 The societalization of nature policy

Nature policy on the national level in the Netherlands is undergoing a shift from an ecological focus to a combination of an ecological and a societal focus. In the first Nature Policy Plan of the Netherlands Ministry of Agriculture, Nature Management and Fisheries (LNV, 1990), nature conservation policy was predominantly based on ecological arguments and theories, and aimed at the physical conservation and rehabilitation of nature<sup>1</sup> and landscape. Particularly the realization of an ecological network (EHS) to connect fragmented natural core areas by means of ecological restoration was carried out very energetically. Partly because of the difficult position of agriculture at the time, this strategy was widely adopted at the regional level as well as by other actors, such as nature conservation and water management agencies. However, this innovative strategy was not appreciated by all. Various actors, especially on the local level, expressed divergent views on appropriate strategies to protect and manage natural areas. Consequently, many social conflicts arose over projects to “restore” nature on agricultural lands or in flood plains along the country’s rivers (e.g. Kuindersma & Kolkman, 2006).

The title of the second Nature Policy Plan – Nature for People, People for Nature – signifies an explicit effort to expand nature policy from a predominantly ecological focus to include the social values of nature (LNV, 2000). This inclusion of social values was related both to the democratic task to accommodate public demands, and to the acknowledgement of the need to preserve public support for nature conservation in the long run. Several strategies toward a societalization of Dutch nature policy were suggested. First, the primacy of the ecological or intrinsic value of nature was replaced by a triad of values: the intrinsic value, the use value, and the experience value of nature. Furthermore, the definition of nature was expanded. Not only officially recognized natural areas were regarded as nature: Also green areas in cities and agricultural areas were perceived as ecologically and socially important green spaces. People’s need to connect to nature and the accessibility of nature near cities were put in the spotlight. Finally, collaboration was stimulated with a wide array of stakeholders, ranging from farmers to citizens and private companies. However, this shift toward a more socially inclusive nature policy has proven difficult. Ever since national policy started aiming at achieving a balance between the ecological and the

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<sup>1</sup> As the focus of this thesis is on how lay people perceive “nature,” I – as a researcher – do not want to impose any predefined definition of nature on them. After all, the definition of nature in itself is an important element of people’s views on nature. It is up to the people to define these constructs and to define the boundary between nature and non-nature (if such boundaries exist). For the moment, it is sufficient to say that empirically, this thesis focuses mainly on non-urban natural areas. In the empirical chapters, the geographical focus of each case is described in more detail.

social benefits of nature policy, policy makers have been struggling with the elaboration of the social benefits and demands (Rientjes, 2002). This especially holds for the understanding of the views of the public and the experiences they seek in natural areas.

The societalization of Dutch nature policy relates not only to the acknowledgement of the social values of the landscape: Policy itself has become more intimately intertwined with “external” stakeholders from civic society and businesses. This is often called governance or multi-actor governance (Kohler-Koch & Eising, 1999; Pierre, 2000). In the last decade, the implementation of nature policy on the regional and the local level has changed significantly, and area-based rural policy has been introduced, incorporating several non-governmental actors in the implementation of nature-related policies. However, in multi-actor governance, “the possibilities to control and actively steer developments are limited. (...) This is especially true when discussions emerge on the nature of the problems and the preferred solutions. Several ideals and images on nature exist and conflict with each other” (Kuindersma, 2002, p. 8; my translation). This has been a great challenge for policy makers: They suddenly found themselves having to acknowledge the divergent views and interests of a wide variety of stakeholders, including tourists and local residents. Because these policy changes above all manifest themselves in everyday management on the local level, especially site managers experience difficulties in incorporating these policies and engaging with the general public.

### **1.3 Divergent publics, articulate citizens**

It is not only policy that changes: Also the social structure in which residents and tourists relate to this policy changes. The social structure in (late-)modern society has become very fragmented, and the activities, demands, and responses of citizens have become very diverse. This increasing complexity of society at large also makes it more difficult to incorporate the views of the public. In the following, I outline some of the complexities that are relevant to nature policy and nature management.

A general trend on which many of the other trends are based is the increase in post-material values that started in the 1970s and has been ongoing ever since (Inglehart, 1977). As a result, the public interest in nature conservation has risen dramatically. This is evidenced by the fact that over four million people in the Netherlands are members of nature-related NGOs. In combination with increased urbanization and the busyness of daily life, the rise in post-material values has also increased people’s participation in nature-related leisure activities. At present, 75 per cent of Dutch citizens visit a national park at least once a year (PBL, 2009). The

number of people who hike or cycle in non-urban landscapes during their spare time is still rising, as can be seen in many crowded natural areas on a sunny Sunday afternoon (Huis et al., 2008). Consequently, the protection and management of natural areas is of interest not only to rural residents: Urban tourists also relate to these issues and may raise their voices when the landscape they love is in danger of disappearing or being altered.

The recreational use of natural areas is an example of the “consumption” of natural areas. This consumption is primarily a symbolic consumption (MacCracken, 1988). People especially look for the symbolic meaning of a natural area as, for example, “relaxing,” “exciting,” or “healthy.” Traditional rural areas remind us of bygone days, while the emergence of new life in spring reminds us of the spiritual or divine basis of human life, and the decay in autumn reminds us of our mortality.

The symbolic consumption of natural landscapes is also related to the rise in rural areas of counter-urbanization – that is, the trend for urban dwellers to move to the countryside, drawn by the symbolic values of open space and natural areas (Elbersen, 2001). This counter-urbanization has resulted in an increase in the number of non-autochthonous residents in many rural and natural areas. This influences not only the physical landscape, but also the social structure of these areas. First, newly arrived residents are usually less familiar with the down-to-earth focus on production in agriculture and forestry. They may interpret negatively some traditional techniques, for example, the spreading of manure on fields or the logging of forests. Second, many of these new residents bring with them considerable managerial and legal experience, while some also bring important political networks. These skills and networks are very useful resources whenever disputes arise in relation to the design or management of natural areas. Counter-urbanization thus increases not only the number of potential disputes over the use and management of natural areas, but also the resources that residents have to defend their interests and to actively resist undesirable projects.

These newcomers in rural areas also bring with them a much more individualistic view on life, related to the general trend toward individualization (Dagevos, 2000). This individualization has at least two significant effects on nature and rural areas. First, individual needs, motivations, experiences, and behaviors are becoming more and more diverse. In addition to hiking and cycling, also paintballing, geocaching, mountain biking, survival trips, and many other activities are now practiced in natural areas. As can be expected, these activities sometimes interfere with each other, and there are frequent conflicts between the various user groups related to their views on nature and on the appropriate use of nature. This diversification is further increased by immigration: Ten percent of the Dutch population is now made up of immigrants. Although it is unclear whether immigrant groups hold different views and expectations regarding Dutch nature, their very limited participation in leisure activities in natural areas seems to suggest this (Jókövi, 2001).

Second, individualization is related to the decrease in hierarchical relationships in society. This decrease has resulted in residents who are much more articulate and who will object if local developments do not fit in with their views or meet their needs (Tonkens, 2003). Consequently, residents and tourists are more inclined to explicitly state their opinions on all kinds of issues, including those related to land use.

## 1.4 The need to understand public views

These social and political trends have a major impact on Dutch nature policy and management. Professionals can no longer protect and develop nature independently of society at large. Consequently, they are confronted by the differences in views that exist between experts and lay people (Soini & Aakkula, 2007), as well as by the diversity of views, demands, and interests that exist among the general public. The emergence of conflicts over nature conservation and management often surprises local managers and the implementation of ecological restoration projects on agricultural land has repeatedly resulted in conflicts between policy makers and the public (Kuindersma & Kolkman, 2006; Open Polders, 2009). The intended felling of trees and the management of invasive species are also often contested (Lub, 2000; Woudreus, 2009).

One widely promoted strategy to manage divergent views and prevent social protest is to actively engage the public. Although participatory processes can be very helpful in accommodating divergent views and preventing conflicts (Buchy & Hoverman, 2000), such approaches are not applicable in every context and many managing agencies are reluctant to implement them on a wide scale. Their reluctance may be related to the amount of time and energy they have to put into these processes, as well as to their fear of not being able to control the outcome of such processes (Petts, 2006). Furthermore, it has proven difficult to effectuate truly inclusive participatory approaches, namely approaches that focus not only on institutionalized stakeholders with vested interests, but also on non-organized citizens (e.g. Swyngedouw, 2005). Managing agencies have found it difficult to include non-organized citizens in participatory processes that are related to the design and management of natural areas. For example, during a long-term project that some colleagues and I did with several Dutch water boards, water managers expressed their frustration over the difficulties they had in getting a grip on citizens' views on water management and nature conservation. Water managers were aware of the possible differences between experts' views and the views of local residents, but were unable to comprehend the views that circulate in the local community. And whether they organized a simple information meeting or an extensive participation process, citizens

were often not very motivated to actively participate. Nevertheless, when a project was finally going to be implemented, individual citizens protested and took legal action against it. Consequently, these managers expressed the need to complement participatory processes with empirical research that would map the different views of the public and help to understand their attitudes toward the ecological restoration projects that managers want to implement (Jacobs & Buijs, 2008).

Understanding public views on nature is especially relevant to the two challenges faced by nature policy and nature management described above, namely the democratic need to understand public views on nature in order to incorporate these views into policy and management, and the pragmatic need to understand and prevent socio-political issues that may emerge when nature policy is being implemented at the local level.

First, social science can contribute to the democratic ambition to incorporate the public's views and needs into the formulation of policy targets. It may thus contribute to translating the explicit policy aim that "nature should fit with the needs and desires of Dutch citizens" (LNV, 2000). On a national level, such studies can help to focus nature conservation policies on areas that are highly valued by the public, or to draw attention to specific social values of nature that need to be protected or enhanced.

Second, social science can contribute to the understanding of socio-political issues and, hopefully, help to prevent conflicts from arising. Understanding public views and incorporating them into local and regional policies and into local management plans can contribute to the successful implementation of these policies (Clayton & Brook, 2005). Such studies may focus on the differences in views between experts and lay people, on residents' knowledge and understanding of natural processes, on people's attachment to their local environment, or on the construction of local attitudes toward nature management.

## **1.5 Some challenges for people-environment studies**

Several studies have been conducted in the past on the relationship between people and their natural environment. In my view, the theoretical foundation of many of these studies and their practical value for professionals could be improved. This thesis takes up four limitations that may diminish the practical or theoretical power of many current studies: the fragmentary focus on single aspects of the human-nature relationship; the tendency to focus on voluntaristic and individualistic theories; the lack of grounding in everyday practices; and the limited attention to understanding differences in preferences for nature. In section 1.6, these limitations are rephrased into four research questions.

A first limitation relates to the fact that many studies focus on just one or two aspects of people's views on nature. For example, studies may be limited to values of nature (Winter, 2007), value orientations (Teel et al., 2005), or beliefs and knowledge about nature and biodiversity (Hunter & Rinner, 2004). Although such studies contribute to our understanding of specific elements of public views on nature, their focus on only one or two elements in isolation from other relevant elements may contribute to the confusion experienced by practitioners in the field. Practitioners already find it difficult to take notice of the diversity of views among the general public, and they may become even more confused if they try to understand all these different aspects separately. After all, they then need to focus not only on divergent values or divergent types of knowledge, but also on divergent value orientations, divergent beliefs, and divergent images of relationships. This may lead to confusion and reinforce the managers' feeling that the public's views are fragmented and unpredictable. Understanding how the different elements of people's views relate to each other could be useful for practitioners to manage the socio-political challenges in their work. Such an effort has already been undertaken in relation to policy analysis (Keulartz et al., 2000). The result was three comprehensive, political and ecological views on nature, based on interrelated knowledge, values, and aesthetic theories. It is thus useful to investigate whether also among the general public the different aspects of people's views on nature are interrelated and can be summarized into a limited number of comprehensive views.

A second limitation is related to the focus on voluntaristic and individualistic approaches in many studies, especially those from environmental psychology. These studies tend to ignore the history and social processes in which people's views on nature are developed and put into practice. Such studies investigate, for example, people's attitudes toward the implementation of a nature restoration project at a certain moment in time, without taking into account the complex social-political influences on such attitudes (e.g. Lindström et al., 2006; Knight, 2008). These social-political influences may be related to, for example, the negative experiences a community has already had with the initiator of a project, or to the activities of a local protest group: Even people who agree with the aim of a project may be persuaded by a protest group and develop negative attitudes. Furthermore, in small communities attitudes may be based not on individual values or beliefs related to nature conservation, but on how the project will influence all members of the community. For example, if a limited number of farmers will suffer the consequences of a project, the whole community may declare their solidarity with these farmers. Consequently, our understanding of how the public relates to local nature management may increase if we incorporate such social processes in our studies.

A third limitation of most of these studies is their focus on general values of nature, rather than on the actual experiences of citizens in their daily encounters with

nature and nature conservation activities. Although these studies may contribute to the awareness of policy makers and ecologists of the divergent values and preferences of the Dutch public, the practicability of the results remains somewhat limited. This is particularly true for the practicability in design and management of natural areas and the prevention of local conflicts (Berends & Veeneklaas, 2003). Especially when nature policy or management is contested, policy makers and site managers need more practice-based insights and tools to deal with the diversity of views among the general public.

The fourth limitation is the focus of the majority of studies in the Netherlands on commonalities in public views on nature conservation, in people's landscape preferences, and in the restorative effects of nature<sup>1</sup>. These studies showed, for example, the broad definition of nature as used by the general public; the general preference for perceptual diversity of landscapes and the visibility of water; and the dislike of cluttering of the landscape and the restorative values of nature. Many of these studies were based on quantitative methods (e.g. questionnaires) or on the modeling of landscape preferences based on G.I.S. data. The results of such studies can suggest specific design and management strategies to enhance the public appreciation of natural landscapes (Kaplan et al., 1998). However, because of their focus on commonalities, they do not contribute to the understanding of the diversity of views among the general public. Furthermore, when these studies do focus on such differences, they relate them not to different views on nature, but to very general socio-demographic variables, such as age, gender, and education (see Koole & Berg, 2004 for a notable exception). For example, the often found differences in landscape preferences between people who prefer managed versus people who prefer wild landscapes has especially been related to differences in professional backgrounds and education (Van den Berg & Koole, 2006). This thesis is an attempt to contribute to a more substantive understanding of such differences in landscape preferences in relation to different views on nature.

This thesis explicitly focuses on the differences in views on nature held by different groups among the general public and the social processes through which these views are developed. At the same time, it investigates whether these elements can be summarized into a limited number of comprehensive views. Moreover, it combines more general studies into the substance of the different views on nature with very contextual studies that focus on social processes in local communities related to socio-political issues in the field of environmental management. It is exactly in this local context that public views are expressed and are related to professional

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<sup>1</sup> Examples include (Van den Berg et al., 1998; Elands & Lengkeek, 2000; Buijs et al., 2003; Bakker et al., 2007; De Vries et al., 2007; Van den Born, 2007; Van Marwijk et al., 2007; Salverda & van Dam, 2008; Van der Wulp, 2008).

views. This explicit grounding in local and regional policies and management is intended to ensure both the empirical validity and the practical relevance of this thesis. Based on these considerations, the aim of this thesis is twofold.

- 1) *To contribute theoretically to the understanding of the relation between individual and social processes in the development of public views on nature.*
- 2) *To contribute practically to nature policy and management by investigating the interrelatedness of single aspects of public views on nature and the consequences of these views for socio-political issues related to local management.*

## 1.6 Research questions

Based on this twofold aim, I formulated four preliminary research questions. They are preliminary because, after the theoretical elaborations in Chapters 2 and 3, I rephrase them into research questions that are both conceptually and theoretically more elaborated. The theoretical aim of understanding the interrelatedness of individual elements is related to research question 1, while the social influence of the development of views on nature is related to research questions 2 and 3. The practical aim of understanding socio-political issues is related to research questions 3 and 4, which focus on socio-political issues and divergent experiences of the public.

1. *How do lay people understand and value nature? To what extent are these understandings and values related, and can they be grouped into comprehensive views on nature?*

This question relates to the content of the different views on nature. Of which elements do lay people's views on nature consist? Which elements are shared by all, and which differ between people? Can a classification of such comprehensive views on nature be developed based on these commonalities and differences?

2. *Through which processes are people's views on nature developed and adjusted?*

In answering this question, I reflect theoretically on the different approaches conceptualizing lay people's views on nature as either individual traits or as socially constructed meanings. First, I reflect theoretically on the relationship between individual and social processes and try to integrate specific elements from these approaches. Second, I investigate these theoretical presuppositions in subsequent empirical chapters.

3. *To what extent are socio-political issues over nature management related to divergent views on nature?*

This question concerns the practical consequences of divergent views on nature. Here, I relate these views to real-life management practices, with an explicit focus on disputes between the managers and the users of natural areas: Nature conservation agencies and actors like farmers, residents, and tourists may differ in their views on nature and develop different views on the proper management of natural areas. Such divergent views can develop into major conflicts that may go on for many years. In trying to understand such conflicts, I focus not only on the content of divergent meanings between different actors, but also on the dynamics of the social processes in which actors construct, and sometimes even deliberately amplify, these differences in order to mobilize support.

4. *To what extent do views on nature inform people's experiences of nature?*

In tackling this final question, I focus on the effects of views on nature on individual perceptions and experiences. Are different views on nature related to different appreciations of and preferences for natural areas? The answer to this will contribute to a more substantive, and thus policy-relevant, understanding of interpersonal differences in the perception and appreciation of natural areas.

## 1.7 Organization of the thesis

This thesis comprises four parts: the introduction, two theoretical chapters, five empirical chapters, and a concluding chapter. In Chapter 2, I give an overview of and reflect upon the dominant approaches in the study of the human-nature relationship. Then, in Chapter 3, I present the theoretical framework of this thesis, basing myself on the conclusions arrived at in Chapter 2. I introduce the concept of social representations, which combine a focus on cognitions with more social constructivist traditions. I describe several aspects of social representations theory, including their functions, the processes through which they come into being, and the relation with individual images of nature. In the second part of this chapter, I relate social representations theory to the theory of framing, and argue that social representations of nature may be used as cultural resources in environmental framing processes.

The empirical chapters are based on contract research I conducted at Alterra Green World Research. As these projects were administered by the EU (Ch. 6), the Dutch government (Ch. 4), the Netherlands Environmental Assessment Agency (Ch. 5 and 9), and the Netherlands Directorate General for Public Works and Water Management (Ch. 8), the studies combined a theoretical focus with an applied focus.

The applied focus was primarily directed at improving the implementation of nature policy on both the national and the local level. As such, the results have been communicated to the field, and feedback on the applicability of the approach has been incorporated. Because the empirical data were collected in an applied research setting, the studies presented in this thesis do not constitute a purely theoretical development in which the design of each study builds on the theoretical results of prior studies in this thesis. The studies rather show a theoretical *and* an applied development. The empirical studies in this thesis develop from a focus on the individually internalized views on nature, to the development and application of these views in relation to the design and management of natural areas. Within this development, the structure of each study is based on a pragmatic balance between theoretical and policy-related aims.

In Chapter 4, I develop a classification of public views of nature and argue for a holistic approach that integrates different types of cognitions into comprehensive views on nature. I describe five such views, and each has different implications for people's attitudes toward natural resource management. I argue that integrating the pluralism of cognitions into comprehensive views may help managers to understand conflicts that are based on divergent opinions about local nature conservation measures.

In Chapter 5, I focus on differences between native Dutch people and immigrants in the views of nature they hold. I also show the relationship between individual views on nature and landscape preferences.

In Chapter 6, I investigate public views on biodiversity in Scotland, Germany, and the Netherlands. I show that protest against and the lack of public support for biodiversity management measures cannot be explained by the public's insufficient knowledge of biodiversity, but is related to divergent views on the different values and functions of nature and biodiversity.

In Chapter 7, I look at ecological restoration projects in three flood plains and show that the effects of restoration were evaluated positively by most of the local residents. However, this positive evaluation did not always result in positive attitudes, due to the critical framing of river restoration by local protest groups. I also show how the framing of river restoration by the project initiators did not resonate very well among the more critical local residents.

In Chapter 8, I describe the dynamics of a conflict over the management of a national park, and show how a protest group and a nature conservation agency differently frame the conflict. I also describe how views on nature are used by the contending stakeholders to reinforce their framing of the conflict.

In Chapter 9, I revisit the conceptual framework, basing myself on the results of the empirical studies. I draw conclusions on both the empirical and the theoretical

results of this thesis, and discuss the practical implications for nature policy and management.

Figure 1.1 illustrates the relation of the empirical studies with the research questions.

Research question	Methods	Chapter
How do lay people understand and value nature? To what extent are these understandings and values related, and can they be grouped into comprehensive views on nature?	Interviews → Questionnaires → Focus groups	→ 4. Individual images of nature
		→ 5. Cultural differences and the relationship with landscape preferences
		→ 6. Social representations of biodiversity
		→ 8. Social representations of nature and the framing of environmental issues
Through which processes are people's views on nature developed and adjusted?	Focus groups → Questionnaires	→ 5. Cultural differences and the relationship with landscape preferences
		→ 6. Social representations of biodiversity
		→ 8. Social representations of nature and the framing of environmental issues
To what extent are socio-political issues over nature management related to divergent views on nature?	Mixed methods approach → Questionnaires → Focus groups → Interviews → Document analysis	→ 7. The framing of ecological restoration in floodplains
		→ 8. Social representations of nature and the framing of environmental issues
To what extent do views on nature inform people's experiences of nature?	Questionnaires → Picture ratings	→ 5. Cultural differences and the relationship with landscape preferences

Figure 1.1: Overview of research questions, methods and empirical studies.

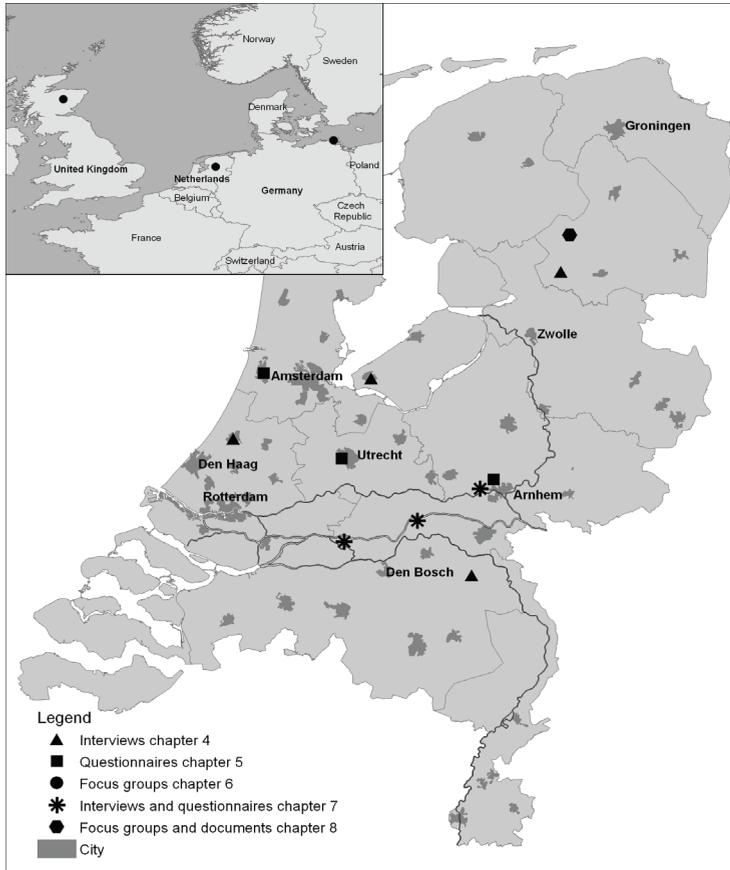


Figure 1.2: Overview of where each study was carried out

**2**  
**Different  
theoretical  
approaches  
to study  
the human-  
nature  
relationship**



## **2 Different theoretical approaches to study the human-nature relationship**

### **2.1 Introduction**

Much has been said and written about the human–nature relationship. Of the variety of disciplinary approaches adopted in the study of human–nature relationships, three have guided the studies reported in this thesis.

In this chapter, I first describe approaches from environmental psychology and environmental sociology. These approaches focus on such concepts as environmental values, preferences, and images in order to understand lay people’s attitudes toward nature management, their preferences for different kinds of landscapes, and their actual recreational behavior. These studies tend to focus on individual people. Consequently, social and temporal dynamics are often not taken into account.

Section 2.3 expands the focus on individual cognitions by looking at historical and philosophical investigations into the human–nature relationship. In it, I describe the broad historical trends in the cultural views on the human–nature relationship. However, because of the broad focus, the historical account needs to be combined with more detailed empirical studies in order to improve the understanding of contemporary lay people’s positions on nature management practices.

Section 2.4 describes a third approach, one that is based on a more social constructivist view on the human–nature relationship. This approach shares with the historical approach its focus on the social and cultural level, but empirically it is much more focused on present-day relationships. In this section, the constructivist view is illustrated by two approaches. The first focuses on how individuals engage discursively in nature management practices, while the second focuses on the discursive framing of nature management practices by different stakeholders.

In order to work toward the conceptual framework for this thesis, each section contains a reflection on the usefulness of the different approaches to answer the research questions posed in Chapter 1. Based on these reflections, criteria are formulated for the development of the theoretical framework in the concluding section (2.5). These criteria are used in Chapter 3 to develop the conceptual framework of this thesis.

## 2.2 Psychological approaches

### 2.2.1 Values, beliefs and attitudes

One of the most important approaches to studying people's views on nature conservation and nature management was developed in environmental psychology (e.g. Bell et al., 2001; Bechtel & Churchman, 2002) and environmental sociology (e.g. Dunlap & Van Liere, 1978; Stern, 2000). This approach focuses on the values, beliefs, and attitudes that people hold toward nature and the natural environment. The most frequently used theories are those related to values and attitudes as explanatory variables for conservation behavior and support.

The first influential theory to theoretically link general values to conservation behavior was the norm-activation model (Schwartz, 1977). This theory is based on the empirical finding that “self-transcendent” values (focusing on values beyond a person's immediate social circle) are stronger amongst people who engage in conservation activities. Through “activating” these values, people are supposed to be stimulated to express pro-conservation behavior. Based on this theory, Stern and others developed the value-belief-norm theory (Stern, 2000) to describe the processes through which these general values are triggered and influence conservation behavior. The theory links personal values and ecological world-views to conservation behavior.

One of the most utilized scales to measure environmental values (and beliefs) is the ecological paradigm scale developed by Dunlap and van Liere (Dunlap & Van Liere, 1978; Dunlap et al., 2000). This scale measures two distinct world-views: the “human exceptionalism paradigm” and the “new ecological paradigm.” These world-views combine ecological values (e.g. “Humans are meant to rule over the rest of nature”) with common beliefs<sup>1</sup> about nature and the environment (e.g. “Humans will eventually learn enough about how nature works to be able to control it”). The central thesis of their theory is that since the rise of environmentalism in the 1970s, the dominant values of people in most Western societies have been changing from an anthropocentric world-view (the human exceptionalism paradigm; HEP) toward an ecological world-view, one that is more respectful of nature (the new ecological paradigm; NEP). This measurement scale has become very influential in studies into environmental behavior. Western countries on average score very high on this scale. Unfortunately, this high average score statistically results in low variance of the scale, which in turn may limit the statistical usefulness of the NEP scale to understand differences in conservation behavior across individuals (Steg & Buijs, 2004).

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<sup>1</sup> Beliefs can be defined as “associations people establish between the object it refers to and attributes they ascribe to that object” (Eagly & Chaiken, 1998).

Most studies on environmental attitudes and behavior have focused on the relationship between values, attitudes, and behavior. Values, value orientations, and attitudes are often supposed to be elements of a “cognitive hierarchy” in which lower level concepts influence higher level concepts. So values are supposed to influence attitudes, which influence intentions and, ultimately, conservation behavior (Figure 2.1).

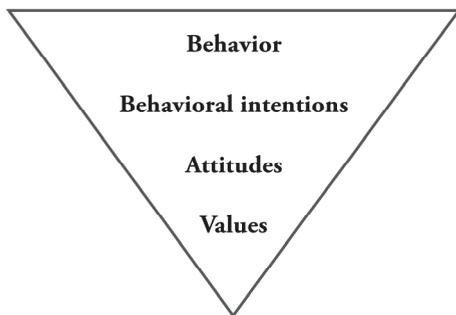


Figure 2.1: *The cognitive hierarchy*

Distinctions are made between ecocentric, altruistic, and egoistic values. This theory integrates several interesting approaches, most notably the research on anthropocentric and ecocentric values. Ecocentric values have been shown to correlate positively with positive attitudes toward the importance of conserving forests (Vaske et al., 2001) and with voting intentions related to wildland conservation (Vaske & Donnelly, 1999). People who hold ecocentric values also put greater priority on the protection of biodiversity (Hunter & Rinner, 2004). However, extensive research has shown that, in general, the cognitive hierarchy of values, attitudes, and behavior is not always as strong as is sometimes postulated. Especially the relationship with behavior is often difficult to establish (Boudon, 2003). A strong effect of attitudes and intentions on behavior is usually found only when both are measured at a very high level of specificity (e.g. “What is your attitude toward signing a petition against a planned ecological restoration project?” and people’s actual signing or not signing of a petition) (Ajzen, 2005). However, at such a high level of specificity, the practical relevance of attitudes to predict behavior diminishes. Furthermore, if attitudes are measured at such a concrete level, the problem of weak predictive power is shifted to the relationship between values and attitudes. Very general values on nature (e.g. ecocentric values) will then have only limited power to predict very concrete attitudes (Cleveland et al., 2005).

It is probably because of this difficult relationship between attitudes and behavior that environmental psychology and sociology have focused on people’s environmental values and attitudes (e.g. Stern and Dietz 1994). Values can be defined as “guiding

principles of what is moral, desirable or just” (Kempton et al., 1995, p. 12). They are supposed to be rather stable and to transcend specific objects and situations. Studies have consistently shown important cultural and personal differences in environmental values that can be interpreted in terms of a dimension ranging from ecocentric<sup>1</sup> to anthropocentric<sup>2</sup> values (Thompson & Barton, 1994; Bell et al., 2001).

Support for ecocentric values is generally high. In a study based in the United States, for example, the average score was 2.2 on a scale ranging from ecocentric values (1) to anthropocentric values (7) (Vaske et al., 2001). Studies carried out in the Netherlands since the 1980s have also shown that the endorsement of ecocentric values is very high among the general public (Nelissen et al., 1987; Nas et al., 1997; Van den Born et al., 2001). For example, in a representative survey among 2000 Dutch inhabitants (Buijs & Volker, 1997), 92% of the respondents endorsed the view that “nature is important for its own sake, independent of the functions it has for humanity.” The same percentage agreed that “the balance of nature is very delicate and easily upset” (cf. Dunlap & Van Liere, 1978). Ecocentric values are typically associated with urban and highly educated people (Bell et al., 2001), women (Vaske et al., 2001), people who hold post-materialist values (Manfredo et al. 2003), and members of conservation organizations (Thompson and Barton 1994).

Although there is much general support for pro-environmental behavior and policy, the relationship between the values of nature that people hold and their attitudes toward nature conservation is not as simple as is often assumed. For example, support for nature conservation is not always based on ecocentric values; it may also be based on anthropocentric values.<sup>3</sup> Only the purpose of nature conservation then differs. While in ecocentrism nature is especially valued for its own

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<sup>1</sup> The terminology used in the studies related to environmental values is usually not very consistent. For example, ecocentric values as defined in environmental philosophy are sometimes called biocentric values (Stern & Dietz, 1994; Stern, 2000; Schultz, 2001; Kaltenborn & Bjerke, 2002), while others stick to the term ecocentric values (Thompson & Barton, 1994). As the definitions of biocentric values – e.g. “nature has intrinsic rights, independent of human interests” (Kaltenborn & Bjerke, 2002) – usually coincide with definitions of ecocentric values from environmental philosophy, I will consistently speak of “ecocentric values” when referring to nature being valued for its own sake.

The distinction between anthropocentric and ecocentric values is sometimes conceptualized as a distinction between instrumental and intrinsic values (e.g. Winter, 2005). Although these distinctions do not fully overlap, the two categorizations are closely related and I will thus not describe this alternative categorization. Other conceptual and terminological discontinuities are discussed in subsequent notes.

<sup>2</sup> Sometimes the anthropocentric values are divided into ego-centric values (related to oneself and one’s direct social group) and altruistic values (related to humans outside one’s social group) (Stern, 2000; Schultz, 2001).

<sup>3</sup> See also (Skogen, 1999, p. 223) for the need to avoid “simplistic interpretations of environmental concern as a uni-dimensional phenomenon ranging from strong to weak.”

sake (i.e. for its intrinsic value), in anthropocentrism nature is valued for its instrumental values (Thompson & Barton, 1994).<sup>1</sup> In anthropocentrism, the protection of nature is important because of the ecosystem services that nature provides: Its life-support functions, the recreational and restorative benefits it furnishes, and the stabilizing impact it has on the global environment. For example hunters often endorse rather anthropocentric values. Nevertheless, many hunters feel very connected to and spend much time in nature and will strongly oppose any threats to natural areas (Filius et al., 2000). They are often also actively engaged in landscape management and the conservation of existing natural areas (Skogen, 2003).

Not only support for, but also resistance to and protest against nature conservation may be based on both ecocentric and anthropocentric values. Endorsement of ecocentric values does not automatically imply support for nature conservation, because the exact focus of such ecocentric values may differ. Some people who endorse ecocentric values may support ecological restoration projects because they feel that nature and biodiversity will benefit from such projects. However, other people who are equally motivated by ecocentric values may oppose ecological restoration, because they want to protect and maintain the current landscape, for example, because of the value of that landscape for meadow birds or other species that depend on cultural landscapes.

To improve the understanding of conservation behavior and attitudes, it has been suggested that pro-environmental attitudes need to be differentiated between the various reasons why people may endorse such attitudes (Steg & Buijs, 2004). For example, Daugstad and colleagues (2006) suggest that the usefulness of the distinction between ecocentric and anthropocentric values may be improved by including the direction of these values. Which type of nature or landscape needs to be protected? Should the focus be on cultural landscapes or on wild landscapes? The fact that people endorse ecocentric values and support nature conservation in general, is insufficient to understand specific opinions on specific goals for nature conservation and the choice of concrete management measures. Ecocentric values may be focused on the protection of cultural landscapes, but may just as well be focused on the protection or the restoration of wild landscapes. Actors may thus share general ecocentric values, but differ on the type of nature they want to protect. As a result, differences between ecocentric and anthropocentric values will hardly differentiate on more detailed attitudes related to the appropriate management of nature (Daugstad et al., 2006).

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<sup>1</sup> I will not engage here in the discussion about whether intrinsic values are truly intrinsic, or whether intrinsic values are always assigned by humans. For that discussion, I refer to (Lockwood, 1999).

### *Value orientations*

A possible approach to improve the predictive strength of environmental values can be found in the concept of value orientations. This concept was introduced in the United States to understand how very general values like ecocentrism and anthropocentrism translate into lower-order values related to people's views on management (Fulton et al., 1996). Value orientations are defined as "an expression of basic values and are revealed through the pattern and direction of basic beliefs held by an individual" (Manfredo et al., 2003, p. 289). Although this theory was originally developed to understand people's views on the management of wildlife, its focus has been extended to also understand other fields of environmental management. This concept helps to comprehend why people who share the same general values may still develop different value orientations. Through diverging value orientations, people who share ecocentric values may differ in their attitudes toward certain aspects of the management of nature, thus informing either positive or negative attitudes toward certain measures (Teel et al., 2007). These different value orientations are then related to different beliefs about nature and natural processes (Manfredo et al., 1999).

Even though value orientations are closely linked to attitudes, they are not the same as attitudes. While value orientations are general views on the management of nature (e.g. hands-off management), attitudes are predispositions toward concrete objects or situations (Fishbein & Ajzen, 1975) (e.g. opposing the felling of the invasive species of wild cherry in certain areas). For example, the much studied wildlife value orientations are composed of dimensions or sets of basic beliefs about wildlife and wildlife management. Usually two dominant orientations are distinguished: the mutualism wildlife value orientation and the utilitarianism wildlife value orientation (Teel et al., 2007). Utilitarianism relates to the view that wildlife should be used and managed for human benefit. It is related to the belief that there is an abundance of wildlife for hunting and fishing. Mutualism is associated with a desire for humans and wildlife to coexist and live in harmony. Humans and animals are believed to be dependent on each other and able to live side by side without fear. People are supposed to take care of wildlife, and all living beings are seen as part of one big family.

### *Reflection*

What is the contribution of the approaches that are based on environmental psychology and sociology? First of all, they have contributed both theoretically and empirically to rigorous investigations of concepts like values, beliefs, and value orientations. This has resulted in numerous studies focusing on specific themes in environmental management, and illuminating especially the different beliefs and values that lay people hold regarding, for example, large carnivores, invasive species, forest management, and nature restoration (Tunstall et al., 2000; Winter, 2005; Whittaker et

al., 2006; Fischer & Van der Wal, 2007; Skogen, 2008). These concepts may be helpful to unravel people's complex thoughts regarding nature. Most studies in this field use quantitative methodologies to study the relevant concepts. These studies are often very methodologically sophisticated.

However, the explicit focus on the study of the mental dispositions of individuals is a serious drawback. For example, this methodological individualism<sup>1</sup> (Boudon, 2003) may fall short in understanding how these experiences are intertwined with the complex and contingent practices of nature recreation and nature conservation. The social context in which nature management takes place may have a strong influence on the construction of individual attitudes. As management practices also shape people's views on nature in that area, their views on how a specific area needs to be protected or managed can hardly be described separately from the management practices in that area. In my view, although concepts such as values and beliefs are useful concepts, their sociogenesis needs to be taken into account in order to fully understand how they are developed and manifest themselves. Moreover, this approach treats the general public as rather passive actors in nature conservation policy, despite recent efforts to work toward more participative approaches in nature management practices. Although Macnaghten and Urry (1998) may be overreacting when they warn of the danger of a "polling culture" in which nature policy is based merely on the results of superficial public attitudes that are not related to actual practices, they have a point when arguing for a more contextual approach to understanding the relation between nature conservation practices and the general public. Furthermore, the validity of the supposed hierarchy of cognitions (Fulton et al., 1996) is not uncontested: The relationship between attitudes and behavior can be found only on a very high level of specificity. Finally, the values distinguished in most attitude-related approaches may be of a too general nature to be able to capture the normative views of people on nature management. As suggested by Daugstad (2006) and others, the distinction between ecocentric and anthropocentric values needs to be further refined. In this respect, the concept of value orientations may be a useful addition.

## 2.2.2 Landscape preferences

The influence of nature management practices on the landscape and their effects on people's preferences have been an object of study in environmental psychology ever

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<sup>1</sup> Methodological individualism holds that social phenomena (e.g. nature conservation behavior) can be decomposed into and explained by properties of individual people (e.g. values and attitude) (Schatzki, 2005).

since the 1970s. Psychological studies into landscape preferences especially emerged as an alternative to the widely criticized landscape assessments based on expert judgements (Dakin, 2003). Although this expert approach still plays an important role in environmental management practices, empirical studies have clearly shown that lay people's perceptions of and preferences for natural landscapes differ significantly from those of experts (Daniel, 2001). For example, experts and lay people differently interpret the cultivatedness, complexity, or coherence of a landscape (Van den Berg et al., 1998). Furthermore, Huntziker and colleagues (2008) found that experts also assess future landscape developments. While experts prefer restoration of the traditional cultural landscape, lay people often prefer either reforestation or the intensification of agriculture. These results suggest that such divergent preferences may contribute to social conflicts over land use and nature management. The expert approach is therefore not further taken into account in this thesis.

Most empirical studies in environmental psychology are based on what can be called the perceptual approach (which is also called the experimental approach: Zube et al., 1982). This approach focuses on the evaluation of the environment through individual perceptual processes (Figure 2.2). Landscape is thus considered an external stimulus to which individuals respond (see Jacobs, 2006 for an extensive discussion on the cognitive processes induced by the perception of landscapes). This response is typically measured by rating overall preference, scenic beauty, attractiveness, or simply "liking."

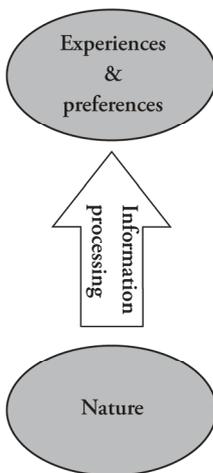


Figure 2.2: Psychological approach to study nature-related experiences and preferences

Landscape perception is usually conceptualized as comprising an affective and a cognitive response (Ulrich, 1983, 1993). The affective response is immediate and

unconscious, based on the general adaptive needs of a person. This initial affective reaction triggers general feelings of liking or disliking, as well as primitive behavioral responses, such as fleeing or exploring. The rapid affective reaction to the environment is most likely based on evolutionary processes. People's reactions to natural landscapes have been developed through adaptive processes in the course of human evolution. Because the natural landscape has been the natural habitat of humans throughout the majority of their evolutionary history, people have adapted to these landscapes and prefer landscapes that best serve their evolutionary (biological) needs. The general hypothesis is therefore that those environments that offered the best opportunities for survival in the early days of evolutionary human development still arouse positive feelings today, while environments that used to be threatening arouse negative feelings. Several applied theories focusing on different evolutionary needs that may be served by natural landscapes have been developed on the basis of this adaptive approach.

One of the most influential examples of an adaptive theory is the prospect–refuge theory (Appleton, 1975). According to this theory, a person's most important need is to be able to see other people or animals (“prospect”) while remaining unseen by them (“refuge”). As hunters and gatherers, humans needed to be able to spot game; but prehistoric nature was very perilous, so people also needed refuge in order to keep out of sight of dangerous animals or rival tribes. This evolutionary heritage has resulted in a preference for half-open savannah landscapes in which prospect and refuge are combined (Appleton, 1975). Interestingly, empirical studies have shown that such refuge need not always be natural, but can also be human related. Even the suggestion of a possible refuge, such as the presence of a house or a farm, may serve the need for refuge and thus contribute to the preference for a landscape. The prospect–refuge theory has never been convincingly validated, however, although some studies do confirm some of its elements. For example, in a study of youngsters, Balling and Falk (1982) found that young children indeed prefer half-open landscapes that provide both prospect and refuge. This preference, however, diminishes as children grow older: In early adolescence, children start to prefer landscapes with which they are familiar. This difference between young children and adolescents suggests that in the initial phase of people's lives, evolutionary adaptation may indeed be dominant in their landscape preferences, while the relative importance of more cognitive, knowledge-related processes comes to the fore as they grow older (Jacobs, 2006).

Another influential theory is that of information processing, as developed by Stephen and Rachel Kaplan (1989). This approach is also based on evolutionary adaptation theories. However, preference judgments are not conceptualized as affective reactions to a landscape, but as based on knowledge-related processes and information processing. It is suggested that people have two basic needs in natural

environments: the need to understand and the need to explore. Both needs can be related to the direct visible environment, as well as to the environment that is hidden beyond the horizon or behind the trees. Combining these factors, the Kaplan's formulate a "preference matrix" consisting of four landscape features that are hypothesized to positively affect landscape perception: coherence, complexity, mystery, and legibility (Table 2.1).

Table 2.1: *The preference matrix (Kaplan and Kaplan, 1989)*

	Understand	Explore
Direct information	Coherence	Complexity
Indirect information	Legibility	Mystery

Coherence refers to the ease of structuring and understanding a scene, legibility to way-finding and orientation, complexity to the availability and variety of information in the landscape, and mystery to the promise of finding new information if one were to move further into the scene. Although results differ significantly between studies (Stamps III, 2004), numerous empirical investigations have shown that especially mystery and coherence are positively related to landscape preferences (Kaplan & Kaplan, 1989; Aoki, 1999; Tveit et al., 2006). The influence of complexity on landscape preference is less clear, however, and legibility is often found not to be related significantly to landscape preferences (Kaplan & Kaplan, 1989; Stamps III, 2004).

Based on these and other theories, landscape preference studies have suggested a wide range of landscape features that are positively related to preferences for landscapes. It has been shown that people consistently prefer natural environments to built environments (Ulrich, 1981). Furthermore, preference for natural landscapes increases with the presence of vegetation, the visibility of water, scenic variety (variation and contrast between landscape elements), the absence of man-made objects, the scale or extent of the view, and the historicity and coherence of the scene (Ulrich, 1986; Kaplan & Kaplan, 1989; Purcell & Lamb, 1998; Van den Berg, 1999; Tveit et al., 2006; De Vries et al., 2007).

### ***Biological, cultural, and individual factors***

Perceptual landscape preference studies have traditionally focused more on consensus in landscape preferences than on personal and cultural differences. This focus may be related to theoretical, methodological, and strategic considerations. First, theoretical

considerations. As described above, environmental psychology has focused strongly on evolutionary theories to explain landscape preferences. Because all humans share this evolutionary basis, it is almost inevitable that studies based on these theories focus on commonalities in preferences. Second, methodological reasons may exist. Until recently, it was methodologically quite difficult to statistically investigate in one study both differences between landscapes and differences between groups of people (Van den Berg et al., 1998). Consequently, most studies focused on variety in landscapes instead of on variety between people. Third, there may be strategic reasons. Especially in the European realm, the importance of taking into account the impact of environmental change on lay people's preferences has never been uncontested. The existence of interpersonal differences in landscape preferences may therefore weaken the plea to incorporate such values. The Dutch saying "You can't argue about taste" has often been used to dismiss the incorporation of landscape perception into environmental decision making (e.g. Bax & Welgraven, 2006).

However, this focus on consensus has been both theoretically and empirically criticized. Empirically, important individual differences have been shown to exist in visual preferences for landscapes that have been subjected to either low or high degrees of human management (Strumse, 1994; Van den Berg & Koole, 2006). Some people prefer well-kept landscapes, whose sense of order and care reflects active and careful management of the area, while others prefer highly natural and wild landscapes that reflect the autonomy of nature. This preference for unmanaged landscapes has been shown to be related both to socio-demographic variables and to individual values and personal involvement: Preference for unmanaged landscapes increases with education and environmentalism, and decreases with age and length of residence (Van den Berg & Koole, 2006). Furthermore, motivations to engage with natural landscapes differ between individuals (Elands & Lengkeek, 2000).

Also theoretically, the focus on general evolutionary based preferences for natural environments has been questioned. Bourassa (1990) recommended expanding this focus to also include cultural and individual factors. He suggested that three fundamental processes that inform the appreciation of natural landscapes need to be distinguished, namely phylogenesis, sociogenesis, and ontogenesis. Phylogenesis is concerned with the evolutionary or biological basis of landscape perception, sociogenesis with cultural developments that may influence landscape perceptions, and ontogenesis with the individual differences in landscape perception, based on individual experiences, motivations, and learning processes.

It can thus be concluded that the biological basis for landscape perception is covered extensively in environmental psychology. The influence of individual experiences is also taken up in many studies, for example based on interpretative and transactional approaches. These studies do not focus on general preferences, but try to unravel the different meanings of nature, including the possible differences

between individuals. This approach is based on the assumption that people not just observe the landscape, but actively engage with it. These studies focus on how individuals develop meanings in interaction with the natural environment, incorporating situational and contextual variables. Widely used concepts include sense of place, personal attachment, and wilderness experiences (Tuan, 1974; Relph, 1976; Sundstrom et al., 1996; Stedman, 2003; Van Marwijk, 2009). While the biological and individual basis for landscape perception is frequently studied, Bourassa's plea to include the cultural dimension of landscape experience has received much less attention.

### ***Reflection***

The biological basis of landscape preferences is thus extensively investigated in environmental psychology (Appleton, 1975; Ulrich, 1983; Kaplan & Kaplan, 1989). Studies suggest that some of these preferences may be related to general evolutionary adaptation. These studies therefore contribute to our understanding of the meanings people attach to nature. For example, people's preference for landscapes that offer both mystery and coherence is an empirically validated, general preference in landscape experiences. Insight into these meanings is also useful to understand public appreciation of nature. Furthermore, and despite the focus on consensus, environmental psychology has clearly shown that experts and lay people may differ significantly in their appreciation of nature and landscape. As such, the field has contributed to the acknowledgement of the need to incorporate public views and perceptions into nature management, and suggests topics on which views may differ (e.g. the perception of naturalness). Finally, landscape preference studies contribute useful methodologies to investigate lay people's meanings and preferences, as it has shown, for example, the validity of using pictures to measure landscape preferences.

However, this thesis focuses on differences between people and the possible conflicts that may result from these differences. As environmental psychology has mainly focused on consensus in landscape preferences, the second research question of this thesis – about the relationship with broader social processes – is mostly unaccounted for. Although several studies from environmental psychology have focused on individual differences, many limit these differences to the usual suspects of socio-demographic variables, such as age, gender, education, or functional ties (Dearden, 1984; DeLucio & Mugica, 1994; Aoki, 1999; Van den Berg, 1999; Herzog, 2000; Tyrväinen et al., 2003). This focus on consensus significantly limits the contribution of the field to the understanding of social conflicts, including conflicts between different non-expert groups.

Furthermore, the approach has several limitations. First, it – like other approaches from environmental psychology – can be criticized for its methodological individualism, neglecting the complex practices of nature recreation and nature

conservation in which these preferences are developed. For example, it has been shown that cultural practices influence individual views on nature (Bang et al., 2007). Finally, the strong empirical focus on descriptive, mainly quantitative, methodologies<sup>1</sup> may hamper the contribution of the field to understand the process of these conflicts and the effects these conflicts have on people's meanings.

### 2.2.3 Images and visions of nature

The concept of mental images of nature that influence the perception and restorative qualities of nature was introduced already in the 1960s (Miller, Galanter and Pribham, 1960. In: Kaplan, 1983). Images of nature were considered to be developed in interaction between environmental perception, environmental knowledge, and people's mental reflections. Based on this concept, Kaplan (1983) developed notions about the relationship between the restorative effects of an environment and the fit between that environment and people's mental images. Van den Berg uses the term images of nature to refer to these mental images, and defines these images as "people's general cognitions of what nature is" (Van den Berg et al., 2006 page xxx). In this operationalization, images of nature are conceptualized as the definitions people use to define nature. What are the boundaries of the concept of nature, and what characteristics of our natural environment influence these boundaries?

Several studies from environmental psychology have used prototypicality ratings to measure people's images of nature and the underlying dimensions of these images (Purcell, 1986; Buijs & Volker, 1997; Buijs, 2000; Van den Born et al., 2001; Van den Berg et al., 2006). Wals (1994) studied images of nature in a more qualitative manner, focusing on children's images of nature. He described different aspects of these images, for example, the vitality of nature; the self-supporting, spontaneous, and pristine character of nature; and nature as evoking feelings of freedom and solitude. According to van den Berg (2006), people who perceive landscapes that are visibly influenced by humans as typical examples of nature can be described as having an anthropocentric image of nature, while people who perceive landscapes that seem untouched by humans as typical examples of nature can be described as having an ecocentric image. Many of these studies found an underlying dimension related to the human influence on nature. Buijs and Volker (1997) distinguished between five different dimensions: elements, spontaneous nature, productive nature, designed nature, and domesticated nature. As can be seen from Table 2.2, lay people often define nature rather broadly. Many people consider not only natural and semi-natural

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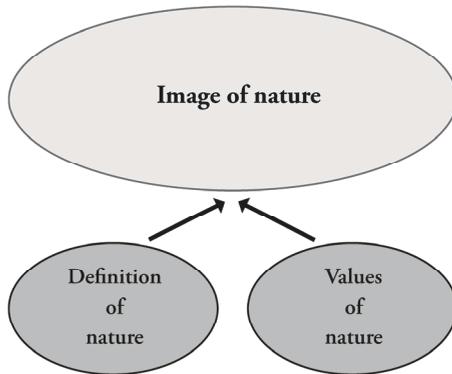
<sup>1</sup> Let alone the frequent use of undergraduate college students as respondents representing "the general public" (Bang et al., 2007).

areas (e.g. marshes, dunes) but also more domesticated life forms (e.g. cows, dogs, house plants) to be part of nature.

Table 2.2: Five dimensions of the prototypicality of nature (Buijs & Volker, 1997)

Image of nature Prototypicality rating	The elements	Spontaneous nature	Productive nature	Designed nature	Domesticated nature
Very typical ↑     ↓	sea sun wind	game wild plants meadow birds moss insects			
		fungus city birds weeds on the fields	landscape meadows	wooded banks	
Somewhat typical ↑     ↓			fields of maize	road verges city parks	cows & pigs
				gardens allotments	dogs & cats
					house plants
Not typical at all					

Buijs (2000) explicitly expanded the definition of images of nature to also include normative stances (see also Korfiatis et al., 2004). He conceptualized images of nature as consisting of two separate dimensions (Figure 2.3). The first dimension relates to people’s definition of nature, measured by the use of prototypicality ratings. The second dimension relates to people’s normative notions of nature, related to anthropocentric utilitarian values, the need to actively manage nature, and the importance of maintaining a strict distinction between nature and culture.



*Figure 2.3: Individual images of nature*

Such a broader operationalization may be a first step toward answering Daugstad's (Daugstad et al., 2006) call to expand the ecocentric–anthropocentric dimension with the type of landscapes that should be protected, through combining values with definitions of nature. Indeed, this operationalization of images of nature has clarified differences between hunters, fishermen, birdwatchers, and landscape volunteers in how they conceptualize nature (Filius et al., 2000). It has been shown that hunters and fishermen use a broader definition of nature, one that also includes productive and domesticated nature. But more interestingly, the different user groups also differ in their normative stances on nature conservation and nature management. For example, compared to the other user groups, the autonomy of nature is not very important for hunters. Furthermore, birdwatchers and landscape volunteers argue for the autonomy of nature and reject the intensive management of natural areas (Filius et al., 2000). Such group-related differences in images of nature were also found by van den Berg and colleagues (2006).

Several studies suggest a relationship between images of nature and landscape preferences. Different images of nature are assumed to function as a cognitive and normative filter that influences the perception and evaluation of natural landscapes (Van den Berg, 1999). However, evidence for this relationship is still very preliminary. For example, preferences for managed landscapes are related to such aspects as functional images of nature (Buijs, 2000; De Groot & Van den Born, 2003). Moreover, managed landscapes are more often preferred by people who hold anthropocentric values, while people who hold more ecocentric values show a preference for wild landscapes (Dearden, 1984; Kaltenborn & Bjerke, 2002). However, van den Berg and colleagues (2006) found only weak relations between images of nature and landscape preferences. This relationship thus needs further study.

### *Visions of nature*

By adding the dimension “images of relationship” (the view that people hold of the proper relationship between humans and nature), van den Born (2001, 2007) extended the initial concept of images of nature, and coined the latter “visions of nature.” Visions of nature thus comprise: i) values of nature (why is nature important? These values of nature come in two types: instrumental values and intrinsic values); ii) definitions of nature (what is and what is not considered nature?); and iii) images of relationship (the images of the appropriate relationships between humans and nature).<sup>1</sup>

These images of relationship are based on philosophical elaboration about the relationship between humans and their natural environment. In the 1980s, several philosophers constructed theoretical or ideal typical types of this relationship between humans and nature (e.g. Passmore, 1974; Barbour, 1980; Achterberg & Zweers, 1984; De Groot, 1992; Huitzing, 1994; Zweers, 1995). Starting from general values of nature (usually the well-known distinction between ecocentric and anthropocentric values), these approaches try to develop a more comprehensive understanding of the relationship between humans and nature. Although most authors constructed their own, distinct classifications, the majority of these classifications are quite comparable with each other. For example, Kockelkoren (1993) described four images of human–nature relationships (see also Table 2.3).

*Table 2.3: Philosophical images of the human–nature relationship (based on Kockelkoren, 1993).*

Image of human–nature relationship	Characteristics
<b>Master</b>	Instrumental values, human dominion
<b>Steward</b>	Recognition of human’s responsibility toward God or future generations to care for nature
<b>Partner</b>	Intrinsic value of nature, cooperation
<b>Participant</b>	Intrinsic value of nature, immersion in nature, spiritual values

<sup>1</sup> In my view the conceptualization of these concepts could be improved, as they show considerable internal overlap. Especially the “values of nature” and “images of relationship” show conceptual overlap. It seems to me that the values of nature are one of the elements of the images of the human–nature relationship. For example, the intrinsic value of nature is one of the decisive aspects to differentiate between the different images of relationship, especially between the steward and the partner (Van den Born, 2007).

The master is the ruler of nature, ruling nature as he seems fit. This is a purely instrumental vision of nature. Nature and nature protection may be important, but only for the functional values of nature. It is based on the optimism of the technocrats –which can be traced back to the era of Enlightenment, as is shown in the following sections. Furthermore, it is based on the view that technological developments will resolve environmental problems. The steward of nature can be viewed as the traditional Christian steward, who manages nature on behalf of somebody else (i.e. God). Anthropocentrism may be replaced by theocratism, in which nature protection becomes part of celebrating God’s creation. In the non-religious interpretation of stewardship, future generations are often referred to as the reference group to which humans have an obligation to protect. The partnership image is the first ecocentric vision. Not only instrumental, but also intrinsic values are attached to nature. Humans are seen as part of nature, and humans cooperate with nature to fulfill the needs of both. In the fourth and final image of relationship (man as participant in nature), the relationship between humans and nature becomes more intimate. This view is characterized by a feeling of emotional belongingness to nature. The spiritual values of nature are also important elements. While in the partner view, nature is conceptualized as the otherness one is *with*, in the participation view nature is the otherness one is *in* (De Groot, 1992).

In her PhD thesis, van den Born investigated whether these images of relationship can also be recognized among Dutch lay people (Van den Born, 2007). The results of this study are not very conclusive, as the hypothesized distinction between images of relationship was only partly confirmed in factor analyses. Therefore, one of the main conclusions was that “respondents, rather than choosing an image of relationship as a whole, strongly endorse certain elements out of the various images of relationship” (ibid., p. 154).

### ***Reflection***

The approaches that focus on images and visions of nature acknowledge the existence of interpersonal differences between individual people. As such, they are a valuable addition to the focus on consensus in landscape preference studies. Furthermore, especially the visions of nature approach may contribute to the refinement of environmental values beyond the ecocentric–anthropocentric dimension. The extended conceptualization of images of nature as also including normative aspects, also incorporates a more comprehensive and interdependent view on the human–nature relationship.

However, the conceptualization of the concept of images of nature is still somewhat unclear. Some authors conceptualize it as a unidimensional construct, related to the criteria people use to define nature, while others use broader conceptualizations, including also normative notions of nature management.

Furthermore, whether philosophical visions of nature (including the images of relationship) can be translated into lay people's conceptions is also under debate. As experts' and lay people's preferences for and conceptualizations of nature have been shown to differ significantly, it can be questioned whether visions of nature that are based on theories or on philosophy can be expected to agree with lay people's visions. Finally, the methodological individualism is, again, a limitation of both approaches.

## **2.3 Historical views on nature**

### **2.3.1 The historical origin of present-day views**

Environmental psychology and environmental sociology have put much focus on individualistic, and predominantly static, conceptualizations of the human–nature relationship. In these approaches, the temporal and contextual nature of this relationship is usually not taken into account. However, historical studies have clearly shown that images of nature have changed through time and across cultures (Schama, 1995; Schouten, 2005). Based on the analyses of such cultural artefacts as paintings and literature, historical studies have described the historical developments in how societies look upon the human–nature relationship. These studies show how conceptualizations of nature, the meanings attached to nature, the emotions evoked by nature, and the preference for specific types of nature in a given historical time period are “a creation of the society within which they have developed.” The dynamics of these views are related to broader cultural, demographic, technical, or political changes (Bunce, 1994). At the same time, the historical and cultural dynamics are combined with certain continuities. Specific themes that are dominant in a certain time period, fade away in the subsequent period, and then suddenly return decades or centuries later.

In this section, I present an overview of the most important views on nature that can be witnessed in Western societies. Focusing on the last two centuries, I show that, on a very general level, the influence of views on nature that came to the fore at the end of the 18<sup>th</sup> century can still be witnessed in present-day views.

### **2.3.2 Three dominant views on nature**

The historical account of Western views on nature shows that on a general, cultural level, at least three different views on nature can be recognized in Western cultures: the functional view, the Arcadian view, and the wilderness view.

### ***Functional nature***

Until the Enlightenment, nature was Western society usually conceptualized as part of a divine hierarchy: Everything in nature had its divine place, and nature was a carefully designed divine construct. By discovering nature, we could identify our true relationship with God. This teleological world-view had been dominant in Christianity until the emergence of the Enlightenment, and is still influential in many other, non-Western societies. There are many accounts of the intimate relationship between humans and nature in native cultures (see for an overview e.g. Schouten, 2005).

This teleological world-view gradually became replaced by a mechanistic world-view. Nature and God became separated and God's place was no longer within nature but above it (Macnaghten, 1991). The natural sciences gradually detached themselves from the teleological world-view and started to develop a mechanistic world-view in which natural forces could be scientifically discovered and described. As a result, the scientific emphasis changed to the discovery of natural laws in nature. Nature was disenchanting. Humans became more detached from nature and started to look upon it as a complex system of forces that can be revealed only through scientific investigation. Understanding nature was beyond the scope of ordinary citizens; further insights into the mechanics of nature could be discovered only with the help of scientific instruments. This rationalization of nature has resulted in "system nature": nature that has become part of a scientific system, detached from the lifeworlds of ordinary people (Van Koppen, 2002).

The development from a divine nature into system nature is related to the development of a functional view on nature. Worshiping nature and stewardship of nature to honor God was no longer obvious for everybody. Consequently, utilitarian values of nature became more important, related to a functional view on nature. Nature is seen as a resource for economic development through, for example, agriculture or mining. In its most extreme form, nature and natural landscapes are nothing more than stockpiles of raw material to be transformed in order to meet the wants and needs of humans (Bell et al., 2001). However, this functional view usually comes in a more enlightened form, namely as a view that proclaims the need to balance nature and human needs. In this view, the conservation of nature can still be valued, albeit for different reasons than in the Arcadian or the wilderness view on nature. One such reason may be related to the need to protect the resource function of nature for both present and future generations. The protection of nature is not superior to the human use of nature, and a balance between human needs (including economic needs) and environmental needs is sought (Van Amstel et al., 1988). The focus is not on, for example, the protection of rare and endangered species or of biodiversity, but on cultural landscapes and culture-following species, like meadow birds (Filius et al., 2000). Although humans and human culture are seen as more important than nature, and the protection of nature is seen as subordinate to human

needs, the importance of nature conservation can thus be experienced and substantiated also from a functional view on nature.

### *Arcadian nature*

Ever since the ancient Greeks, cultural and political elites have depicted nature as Arcadia (Schouten, 2005). Urban Greek citizens started to dwell on their longing for the simplicity and quietness of rural life, where moral standards were supposed to be much higher than in urban culture. Rural life was seen as more natural than urban life, and rural nature was associated with aesthetic and recreational pleasure, with clean streams and the simple life of peasants. This Arcadian view on nature is strongly based on the idealization of nature and rural life, emphasizing man's harmony with nature (Worster, 1985). Furthermore, nature is described in a tone of delight and admiration (Bunce, 1994).

This Arcadian view on nature can be recognized in different time periods throughout history. For our understanding of present-day views on nature, the re-emergence of Arcadian views during Romanticism (roughly between 1790 and 1850) is most important. The era of the Enlightenment resulted not only in a strong (and scientifically and economically very successful) emphasis on nature as a resource, but also in overcrowded and polluted cities (Van Koppen, 2002). As a result, Romanticism called into question many philosophical, ethical, and aesthetic views that had been dominant in the Enlightenment era. This criticism particularly focused on the utilitarian, mechanistic, and rather detached view on nature. Because of this unease about the results of the Enlightenment, Romantic writers and painters expressed a longing for sensibility, spontaneity, and originality. They called for the re-enchantment of nature (Honour, 1979). The typical Romantic was sensitive, insisted on the uniqueness of the individual, and preferred color to form and the exotic to the familiar (Lothian, 1999).

According to van Koppen (2002), the Arcadian view on nature incorporates several specific elements. First of all, it puts a particular focus on the expressive dimension of nature, on experiencing the beauty of nature, and on the emotions evoked by nature. These emotions can also be witnessed in the rise of the anthropomorphism in how people looked at animals, resulting in an increase in sympathy for animals (Jacobs, 2009). This was often related to the reverence for life, a reverence that was sometimes religiously based. Furthermore, the Arcadian view attributes normative value to nature. It highlights the intrinsic value of nature, that is, the importance of nature protection for nature's sake.<sup>1</sup> This normative value of nature is closely related to the Arcadian conceptualization of nature as fragile. Human

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<sup>1</sup> This attribution of normative values of nature is one of the most important contributions of Romanticism to modern views on nature (Honour, 1979).

influence is seen as threatening the quality and sustainability of nature. Combined with the normative values, this belief in the fragility of nature often results in emphasizing the need for the conservation of nature. Finally, Arcadian nature is modeled upon specific stereotypes of nature, such as the picturesque and Romantic landscapes. As such, it is based on nature as an icon. This iconization of Arcadian nature is strongly influenced by landscape painters (Bunce, 1994), in modern times supplemented by the influence of pictures in mass media and advertisements (Cosgrove, 2008).

At first sight, Arcadian views on nature may seem contradictory to modern culture. However, they are the two sides of the same coin: Arcadian nature is complementary to human culture. Only when one is no longer dependent on nature, can one start to appreciate it (Lemaire, 1996). Consequently, the development of the Arcadian view is directly related to the rapidly increasing control over nature resulting from the scientific successes of the Enlightenment.

In his seminal work *Landscape and History*, Schama (1995) states that there have always been two interpretations of Arcadia: the appreciation of the rural idyll, focusing on the charming and peaceful life, and the admiration for untamed wilderness. In the Greek meanings, Arcadia explicitly stands for man's harmony with nature. The beautiful landscapes described by Greek and Roman poets were usually man-made and cultivated: Beauty was found in the fertile valleys, not in wastelands. Therefore, in line with Keulartz and colleagues (2000), I limit the definition of Arcadian nature to the above-described pastoral depiction of nature as the "peaceful rural landscape."<sup>1</sup>

### ***Wilderness nature***

Romanticism had a profound influence on the re-emergence of the Arcadian view on nature, and probably had an even more profound influence on the rise of the preference for a more primitive kind of nature: nature as wilderness. As with the rural idyll, a mystification of wilderness can be found in the arts throughout history (Schouten, 2005). However, until Romanticism this wilderness was usually depicted as a frightful place. With some notable exceptions, wilderness was often used as a negative reference to stand in contrast with the good of man and God. And when wilderness was allowed in, it was either a controlled kind of wilderness or functioned as a contrast to the serenity of the Arcadian landscape or garden (Schouten, 2005). Only in a hidden corner or right at the back of a park could one sometimes visit

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<sup>1</sup> The terms Romantic, Arcadian, and Wilderness views on nature are used in different definitions throughout the literature (Schama, 1995; Keulartz, 2000; Van Koppen, 2002; Schouten, 2005). Following Keulartz et al. (2000, 2004), I will distinguish in this thesis between the Arcadian and the wilderness images as two different elaborations of the Romantic view on nature (see also Honour, 1979). The Arcadian image relates to the pastoral (rural, peaceful, and harmonious) landscapes, while the wilderness image relates to the wild and untamed landscapes. These two images are complemented by a third image, the functional image (see below).

uncontrolled versions of nature, which consist of wild and unpredictable nature. Furthermore, “part of that journey [to wilderness areas] was the comforting idea that the route could immediately be reversed,” back to pastoral Arcadia (Schama, 1995, p. 567).

This negative view on wilderness changed substantially at the end of the 17<sup>th</sup> century. Based on Romantic skepticism about the cultural and scientific achievements of the Enlightenment, a longing for the “true” and the “natural” emerged, especially focusing on the experienced need to re-establish the spiritual and emotional bond with nature. This resulted in a search for truthfulness in wilderness. Consequently, while the longing for Arcadian nature can be seen as a reaction to the dirtiness of the city or the harshness of social relations in modern societies, the search for wilderness can be described as a reaction to the rationality of modern culture and the civilization of people’s effects and the repression of one’s desires.

In the wilderness view on nature, the focus on finding the sublime in nature, related to such emotions as astonishment, fear, roughness, and obscurity: “*The passion caused by the great and sublime in nature . . . is astonishment; and astonishment is that state of the soul, in which all its motions are suspended, with some degree of horror. In this case the mind is so entirely filled with its object, that it cannot entertain any other.*” (Burke, 1998/1757, p. 27). Literature and the visual arts started to search for this greatness of nature, and the awe-inspiring aspects of wilderness nature – as embodied in, for example, mountains, jungles, deserts, and volcanoes – were extensively portrayed and described (Schama, 1995). It is exactly through these intense emotions that one forgets all other thoughts and thus can come into contact with the most primal emotions. This is clearly illustrated in one of the most famous examples of early wilderness gardening: the *sacro bosco* (sacred forest) in Bomarzo, a forest filled with demons. The inscription above the mouth of one of the biggest demons is typical of the wilderness on which this forest was based: Dante’s famous line above the entrance to Hell (“Abandon all hope, you who enter here”) has been rephrased as a description of the basic wilderness experience: “Abandon all *thought*, you who enter here” (Schama, 1995).

The wilderness view on nature emerged in both Europe and the United States in the 18<sup>th</sup> and 19<sup>th</sup> centuries, and has been vital in the United States ever since (Nash, 1973): It has been institutionalized in the establishment of many national parks and culminated in the Wilderness Act of 1964, which officially designated wilderness areas (such areas now cover 429,000 km<sup>2</sup> of land in the United States) (Scott, 2004). In Europe, however, wilderness nature lost its attraction at the end of the 19<sup>th</sup> century. The Arcadian view and the related rural idyll became dominant once more, both in nature conservation and in nature appreciation. In the Netherlands, it was not until the 1980s that there was a return, albeit a swift and influential one, of the wilderness ideal (Van der Windt, 1995).

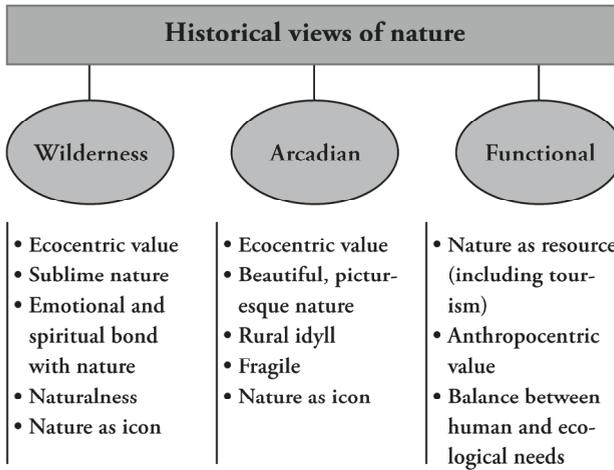


Figure 2.4: Historical views on nature

**Historical and present-day views on nature**

The description of the different views on nature in different time periods has more than just a socio-historical value. The influence of these different historical views is still noticeable, and many of their elements have trickled down into contemporary Western conceptualizations of nature (Bunce, 1994).

views on nature have had a strong influence, both directly and through their impact on nature conservation practices, on how people in Western cultures look upon nature. Nevertheless, it has to be remembered that the Romantic movement of the 19<sup>th</sup> century was very much an elite movement and the influence of Romanticism was mainly expressed by poets and painters. Consequently, the Arcadian and the wilderness view were mainly related to the upper class (Voorsluis, 2002). Only in the 20<sup>th</sup> century, these views were gradually dispersed through all groups in Western societies. The arts as a way of diffusing Romantic views on nature were gradually replaced by new forms of communication, especially related to the rise of the mass media. Especially television has widened the distribution of these views to all segments of society (Cosgrove, 2008). For example, several Dutch non-governmental nature agencies nowadays use very picturesque photographs and documentaries to propagate the importance and success of their conservation efforts. Even with changes modes of communication, the content of these views has remained rather constant and Romantic pictorial images of natural landscapes still play an important role in shaping Western views on nature.

The influence of Arcadian and wilderness views from the Romantic era can also be recognized in contemporary nature conservation practices in the Netherlands (Van Koppen, 2002). For example, the scenic and aesthetic values of nature are very

important criteria for the ecological valuation and protection of nature. The same holds for the normative values of nature and its focus on protecting remarkable and appealing species. As such, nature conservation strategies are to a large extent based on, and have been shifting between, the Arcadian and the wilderness view on nature as developed during the Romantic era (Van Koppen, 2002).

### ***Reflection***

The historical approach to landscape perceptions is a useful addition to and reflection on the focus on consensus in environmental psychology. It illustrates the historical rootedness of present-day views on nature as well as the diversity and historical dynamics of these views. It also shows both continuity and change in social views on nature throughout history. This combination of historical continuity and change demonstrates the need to integrate social dynamics and cultural variations in our study of people's perceptions of nature and the natural landscape.

Although historical views on nature have influenced contemporary views on nature, the approach in itself is not well applicable to understand present-day perceptions of landscapes. It also falls short as an analytic tool to understand possible conflicts in nature conservation between citizens and experts or between different groups of citizens: Because these historical accounts are to a large extent based on analysis of the elite views and the materialization of these views in cultural artefacts, the views of the general public have received less attention, and although the approach does describe the differences and dynamics of views on nature, it does not describe mechanisms through which cultural changes in views on nature may come about and change in modern societies.

### **2.3.3 Policy concepts of nature**

To investigate the different conceptualizations of the human–nature relationship in Dutch policy, Keulartz, van der Windt and Swart (2000) developed a theoretical and empirical grounding of the different political views on nature, which they call the “concept of nature.” In line with historical analyses, they distinguish between three different concepts of nature: wilderness nature, Arcadian nature, and functional nature. A very interesting innovation in their approach is the distinction they make between the cognitive, normative, and expressive dimension of concepts of nature: How nature is cognitively (scientifically) represented, ethically judged, and aesthetically experienced. The cognitive dimension relates to the definition of what constitutes nature, which entities belong to nature, and the relationships between these entities. The normative dimension relates to how we judge nature, which values we attach to nature, and which moral status we assign to plants, animals, and ecosystems. The

expressive dimension is related to how people experience nature: What do they find beautiful, what compels their admiration, and what inspires them?

Concepts of nature integrate these three dimensions into one comprehensive way of conceptualizing nature. This integration is based on the interrelatedness (or “transversality”) of these dimensions, as stated by Welsch (1996). Based on this transversality of the cognitive, normative, and expressive elements of the human–nature relationship, Keulartz and colleagues (2004) concluded that these dimensions are not randomly combined. Instead, only a limited number of the possible combinations of values and beliefs appear to be used in Dutch nature policy, and these combinations are interpreted as the dominant concepts of nature held by Dutch ecological experts<sup>1</sup> (Figure 2.5). These concepts are seen as implicit views on nature that are used in policy making to value different types of nature.

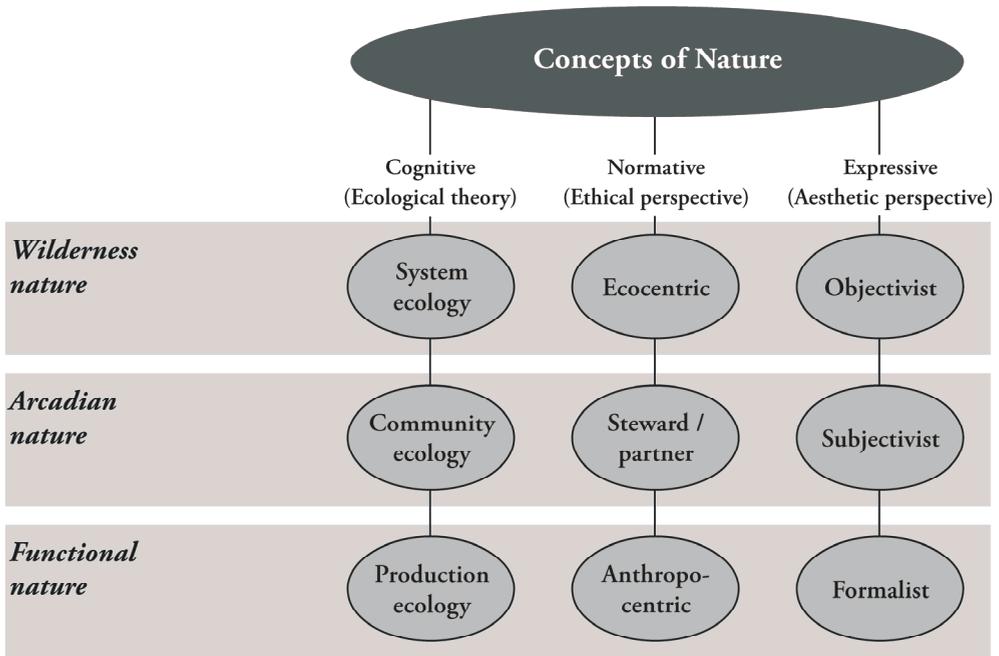


Figure 2.5: Typology of concepts of nature

The concept of wilderness nature has been dominant in Dutch ecological policy ever since the 1980s (Keulartz et al., 2000). Based on influences of postmodernism – as well as on Habermas’s (1982) theory on communicative action and Beck’s (1992) call

<sup>1</sup> This distinction between the cognitive, normative, and expressive field of reasoning or experiencing is very often used throughout philosophical history, and can be traced back to the Platonic distinction between logos, ethos, and pathos. For example in landscape research, Jacobs (2002) distinguished between comparable dimensions (the true, the just, and the truthful landscape).

for reflexive modernity – Keulartz and colleagues use these concepts of nature to criticize this limited focus on only one concept of nature in recent Dutch policies. According to these authors, the diversity of concepts should be recognized and all concepts should be treated as equivalent. They question the dominance of specific ecological theories (most notably, systems ecology) in Dutch nature policy and the subsequent dismissal of non-ecological values: What does and what does not count as nature, as well as how nature should be managed, cannot be based on any ecological or philosophical truth, but needs to be subjected to democratic discussions (Gremmen & Keulartz, 1996; Van Koppen, 2002; Keulartz et al., 2004). Who is to determine that cultural landscapes are not worth protecting and can be transformed into “new nature”? And what arguments do people and organizations use to substantiate their view on nature conservation and to defend their management strategies?

### ***Reflection***

The “concepts of nature” as developed by Keulartz and colleagues offer an interesting approach to understand the human–nature relationship. This especially holds for the comprehensive nature of the approach, which consists of three related dimensions. The suggestion of the interrelatedness (transversality) of cognitions and values has been partly validated in empirical studies on mental models of nature (Bang et al. 2007). This more comprehensive approach to views on nature offers an alternative to the somewhat unidimensional approach in environmental psychology. It is thus in line with Daugstad’s call to consider not only environmental values when trying to understand opposition to nature conservation, but also questions like *which* nature should be protected and *why* it should be protected.

A clear limitation of this approach for the current thesis is its focus on policy practices. Concepts of nature have thus far been used only in the analysis of nature conservation policies and the ecological valuation of nature. Whether these concepts also hold for the general public is not yet clear. Prior research suggests that lay people’s views on nature may differ significantly from those of experts (e.g. Harrison et al., 1998). Furthermore, the cognitive and normative dimensions of visions of nature are well conceptualized. Although they have not yet been used to understand lay people’s views on nature, they can probably be to the study of lay people’s views on nature. However, the third dimension (the expressive dimension, which is based on formal aesthetic theories) is much less convincingly conceptualized. First of all, there is little evidence that the expressive dimension of nature is directly linked to cognitive and normative aspects. Furthermore, the authors conceptualize this dimension as a distinction between three different theoretical aesthetic perspectives, namely the objectivist, the subjectivist, and the formalist. Doubts can be cast whether these aesthetic distinctions are indeed made in ecology and nature policy (see also Van Koppen, 2002 on the aesthetic basis of nature conservation). More importantly for the

present thesis, such a distinction will certainly not hold for lay people. As described above, empirical studies have clearly shown that experts' assessment of the expressive dimensions of landscapes (e.g. beauty) fall short in understanding lay people's experiences and preferences (Daniel, 2001). Therefore, although "concepts of nature" are an interesting way of looking at the social appreciation of nature, they are insufficiently applicable to lay people's views on nature.

## **2.4 The social construction of nature**

### **2.4.1 The discursive use of nature**

Historical accounts have described both the cultural heterogeneity and the historical dynamics in conceptualizations of nature. This acknowledgement of cultural, historical, and interpersonal diversification of images of nature is also one of the key assets of the social constructivist approach discussed in this section. Since the 1990s, sociology<sup>1</sup> has put much emphasis on the social construction of the meanings of nature and has empirically investigated this construction (Greider & Garkovich, 1994; Harrison & Burgess, 1994; Eder, 1996; Macnaghten & Urry, 1998).

This approach is epistemologically quite opposite to environmental psychology. Starting from epistemological realism, environmental psychology focuses on the individual (cognitive and affective) appraisal of nature and on the values people attach to nature. Social constructivist approaches, however, focus much more on the social processes that are related to the construction of meaning in specific social practices. Images, attitudes, or preferences are conceptualized as meanings that are actively constructed in discursive actions between different actors. As such, this approach focuses not on the physical environment, but on the social environment in which meanings are constructed.

The consequences of this approach for psychological inquiry are documented by Potter and Wheterell (1987). While traditional psychology conceptualizes values, beliefs, and attitudes as reflections of underlying processes that precede and inform behavior, the constructivist view on human behavior conceptualizes the expression of values, beliefs, and attitudes as accounting for one's behavior: They do not precede, but are the result of people's behavior. Moreover, individuals do not develop meanings or preferences as a reaction to the physical environment: Meanings are actively constructed in discursive actions between different actors in the social environment. People's engagement with and responses to nature are embedded in daily life and are directly related to the identity of social groups (Greider & Garkovich,

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<sup>1</sup> And related disciplines, liked anthropology and political sciences.

1994). This is probably best illustrated by the often quoted phrase of Macnaghten and Urry (1998, p. 95) namely that “there is no single ‘nature’, only natures. And these natures are not inherent in the physical world but discursively constructed through economic, political and cultural processes.”

Most of the studies in this tradition focus on political processes in the professional arena (including farmers’; Morris, 2003) or on the social construction of nature in mass media (Burgess, 1990). For example, in one of the seminal studies, Harrison and colleagues describe how farmers construct themselves as active rather than passive stewards of nature, and how these farmers use this view to discursively argue against the dominant hands-off strategies of nature management agencies (Harrison et al., 1998).

Regarding lay people, it is especially the social construction of naturalness and wilderness that has been studied. Hull and colleagues (2001) investigated how references to health, naturalness, authenticity, and wildness are used by local residents as rhetorical arguments to promote certain values and views on natural forest management. While outsiders usually referred to dehumanized forms of naturalness, residents often referred to what the researchers call “cultured naturalness.” Cultured naturalness is a naturalness in which the history of their local community can still be recognized, and relates to local identity and the need to balance the practices of local community with the need to actively manage the natural forest. References to cultured naturalness are used to argue against potential forest management actions that are based on the ideal of a dehumanized, wild nature.

Also Macnaghten (1991) concluded that such concepts as wilderness, naturalness, and balance are strong discursive tools to underpin certain views on nature management. In a case study on the discursive use of the term “nature” in a public inquiry into a contested landfill project in the UK, Macnaghten showed how different concepts of nature were discursively used to argue for or against the project. For example, in the “nature as wilderness” discourse, arguments about the naturalness of the current landscape were used to plea against human interference in the area (e.g. the landfill). In the discourse of “nature as (passive or active) visual harmony,” the discourse revolves around whether the visual harmony of a particular site would be impaired by the project and whether the landfill could be designed to fit into the present landscape.

### **2.4.2 The framing of environmental conflicts**

A second example of a constructivist theory used to understand how people act in relation to the natural environment can be found in theories about framing.

Framing theory has been applied to wide range of issues.<sup>1</sup> The theory focuses on understanding the production and negotiation of socio-political issues, and the discursive framing of such issues in social processes (Gamson, 1992).

Schön and Rein (1994) invite us to consider a frame as a story that stakeholders tell about the conflict. Each frame tells a different story and constructs a different view on an issue. These stories determine what is at stake, what are regarded as facts, and which arguments, events, and experiences are relevant for understanding the issue. A frame can be defined as “a central organizing idea for making sense of relevant events and suggesting what is at issue” (Gamson, 1992). The process of framing can then be defined as the discursive process in which actors try to influence the interpretation of an issue by assigning specific meanings to that issue. It is a deliberate and social process in which different actors compete for control over the dominant frame (Eder, 1996). Much framing research has focused on how such social conflicts are framed by national news media (Gamson & Modigliani, 1989; Nelson et al., 1997; Scheufele, 1999; D'Angelo, 2002). However, news media are not the only actors to engage in the framing of social issues. Especially in relation to environmental disputes, also local processes of framing need to be taken into account. In environmental conflicts, local stakeholders may use different frames to understand the issue, and every actor will try to influence the frames of other stakeholders by emphasizing specific topics related to the issue and ignoring other topics.

Lewicki and Gray (2003) show that in social conflicts over land use and human resource management, framing plays an important role in how an environmental conflict evolves. They also describe ways in which frames may influence these conflicts. First, frames define issues: They identify problems and attribute certain characteristics to these problems. Second, frames shape action through the articulation of possible solutions. Even if stakeholders agree on their diagnoses of the problem, their preferred solutions to the problem may differ. Third, frames are used to mobilize others. They not only create a common definition of the problem as well as common solutions, but also mobilize actors to get involved in efforts to solve a certain problem.

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<sup>1</sup> Examples include social movement theory (Snow, Rochford Jr., Worden, & Benford, 1986; d'Anjou & Van Male, 1998; Benford & Snow, 2000), political theory (Gamson, 1992; Schön & Rein, 1994; Nelson, 2004), and theories on public opinion and mass media (Gamson & Modigliani, 1989; Nelson, Oxley, & Clawson, 1997; Scheufele, 1999; McBeth & Shanahan, 2004). Framing theory has recently been successfully used to understand disputes in natural resource management between professionals, lay people, and farmers (Drake & Donohue, 2003; Elliot, Gray, & Lewicki, 2003; Gray, 2004) and other environmental issues (Eder, 1996; Krogman, 1996; Gray, Peterson, Putnam, & Bryan, 2003; Lewicki & Gray, 2003; Zavestoski, Agnello, Mignano, & Darroch, 2004; Soini & Aakkula, 2007).

### 2.4.3 Enhancing support

The process of framing is all about actors' efforts to enhance the acceptance of their frames of the issue. The success of such efforts depends on the content of a frame and the contexts in which actors propagate their frames (Figure 2.6).

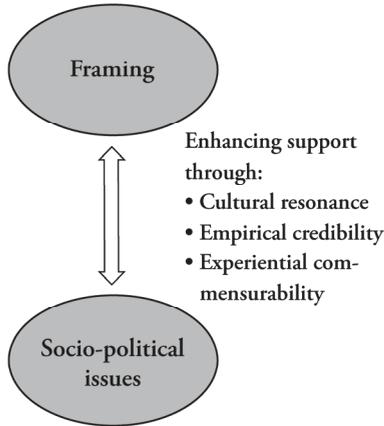


Figure 2.6: The framing of environmental issues

In framing research, many features are described that strengthen or weaken the support for specific frames. Social movement research focusing on the proliferation of contested frames has shown that the cultural resonance of any given frame is an important determinant of the success of that frame<sup>1</sup> (Gamson & Modigliani, 1989; Eder, 1996; Benford & Snow, 2000). Cultural resonance exists when the content of a certain frame is congruent to specific items within a specific culture or subculture. For a frame to be accepted by a substantial number of people, it must “resonate” with important cultural elements of that culture. Cultural resonance “increases the appeal of a frame by making it appear natural and familiar” (Gamson, 1992, p. 135).

Another feature that may strengthen support for a frame is the empirical credibility of that frame. This empirical credibility relates to the fit between the content of a frame and the empirical events in the world of the actors. Do actors know of empirical events that support or counteract specific elements of a frame? Because empirical credibility depends on individual experiences in people’s personal and professional life, the views on the empirical credibility of a frame may differ substantively between different actors.

While empirical credibility relates to a frame’s trustworthiness, experiential commensurability relates to its salience. Experiential commensurability is the extent to

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<sup>1</sup> While Gamson & Modigliani (1989) call this cultural resonance, Benford and Snow (2000) call a similar concept narrative fidelity.

which claims made within a frame are related to, recognizable in, and relevant for the everyday lives of actors. Abstract claims within a given frame may be difficult for actors to link to their personal lives, and such claims may thus fail to convince them that the frame is relevant to understand phenomena in their everyday life. This is especially true for differences between experts and non-experts: While experts may base their frames on theoretical notions or technical facts, non-experts focus particularly on experiences from their personal lifeworlds (e.g. Harrison et al., 1998). The use of technical models within an expert frame is an example of a frame that lacks experiential commensurability among non-professionals. The credibility of frames related to, for example, river management that focus on the risk of an area flooding may be limited if the framing merely refers to the outcome of a technical model, while residents have never experienced any such danger in their daily lives. Scientific concepts such as biodiversity may also fall short on experiential commensurability, as most people do not notice the decline or rise of endangered species.

### ***Reflection***

Studies based on the social construction of meaning have been successful in highlighting the diversity of meanings of nature, as well as the processes through which different stakeholders construct meanings in socio-political issues and the power relationships that are involved in constructing and circulating these meanings. They have also described quite convincingly how in political debates specific discourses about nature and landscape have gained dominance and are thus able to frame specific political issues in a favorable way.<sup>1</sup> Finally, the focus on qualitative methods is a welcome extension of the predominantly quantitative approaches in environmental psychology. Unfortunately, this is merely a replacement, not an addition, as in social constructivist approaches a combination of quantitative and qualitative approaches is also very uncommon.

These approaches focus on the social processes involved in meaning construction. Consequently, the individual appreciation and experience of nature receive less attention.<sup>2</sup> Discursive approaches tend to ignore the functions of individual cognition; instead, they focus on the discursive use of values and beliefs. The expression of values, beliefs, and attitudes is conceptualized as accounting for one's behavior and as the result of people's behavior rather than as influencing their behavior. Consequently,

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<sup>1</sup> For example, Frouws has described three dominant discourses about rurality in the 1990s: the agriruralist, the utilitarian, and the hedonist discourse.

<sup>2</sup> One of the few studies that related the discursive use of nature-related arguments with actual landscape preferences concluded that no difference in landscape preferences could be demonstrated between people who refer to two different and competing discourses. People who refer to nature as a productive domain of farmers turned out to have similar landscape preferences as people who refer to the passive use and consumption of nature (Macnaghten, 1991).

these approaches tend to downplay the intentionality of individual actors. As this thesis also focuses on understanding individual meanings, preferences, and intentions related to nature conservation practices, the social constructivist approach is not fully equipped to accomplish this aim.

An additional limitation is related to the relevance of “physical” nature for understanding the construction of the meanings of nature. Many constructivists state that because we can only experience nature through our own senses, the meanings we attach to nature are always subjective (and socially elaborated) version of nature. The relevance of this physical nature is denied, and the focus is limited to the social processes in which meanings of nature are constructed. Therefore, while in my view environmental psychology overestimates the purely mental explanations of people’s values and preferences, social constructivist approaches tend to overestimate the social processes related to the human–nature relationship.<sup>1</sup>

## 2.5 Conclusions

I have described how research on the human–nature relationship has been conducted from a wide variety of traditions. To give an overview of all theories, concepts, empirical investigations, and philosophical elaborations in this field of study would have doubled the size of this thesis. Furthermore, had I attempted to give such an overview, this thesis would not have been published on time. However, because many elements of these investigations are related to the topic of this thesis and may contribute to my theoretical and empirical quest, I have presented a brief overview of and reflection on some important themes in the field, limiting myself to the approaches that inspired the conceptual framework developed in the following chapter.

Environmental psychology and parts of environmental sociology have focused on the level of the individual actor. How can individual landscape preferences be explained, which values and beliefs can be distinguished among actors, and how do these individual traits influence human conduct? While focusing on the individual level, most studies and theories do not incorporate the social dynamics of the meanings attached to nature. These studies have illuminated interesting aspects of the human–nature relationship, such as the relationship between human evolution and the perception of nature, the different values related to pro-environmental behavior, or the different understandings of the concept of nature. However, in my opinion the static view on the human–nature relationship is an important limitation of these

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<sup>1</sup> See also (Carolan, 2005; Evanoff, 2005) for an extensive discussion on these topics.

approaches. Furthermore, most approaches tend to focus on separated concepts (e.g. values or beliefs) without paying much attention to their interrelatedness.

I have also reflected on the historical studies that investigated how the human–nature relationship has been defined culturally throughout history. These studies focused especially on the general level of entire cultures and societies, and show how cultural dynamics are combined with certain continuities throughout time. Although these accounts are very illuminating and the influence of these historical views on the human–nature relationship is still recognizable today, these studies cannot be more than an informative backdrop for the objective of this thesis.

While historical accounts focus on structural tendencies and assume a *longue durée* in the development of the different meanings of nature, and environmental psychology focuses at the actor level, constructivist studies from sociology and anthropology focus on situated meanings, negotiated in time–space specific practices. Both discourse analysis and framing theories assume a social constructivist view on the relationship between humans and nature, in which meanings of nature are discursively constructed. In this approach, individual values and beliefs do not precede attitudes or behavior; instead, values and beliefs are conceptualized as specific accounts used to defend and substantiate specific views. As such, individual cognitions are not taken into account in these approaches and the intentionality of individual actors is sometimes neglected.

### ***Criteria for the development of the conceptual framework***

Based on the descriptions of and reflections on these approaches, I can now outline the criteria to which the conceptual framework of this thesis needs to answer. As the research questions formulated in Chapter 1 relate to both the individual and the social level, the conceptual framework needs to incorporate both individual cognitions and the social processes that influence these cognitions. As such, it needs to answer the call from Bourassa to extend the evolutionary and individual focus in environmental psychology with a more cultural focus, as this will allow for the incorporation of cultural and historical developments in how mankind relates to his natural environment and intercultural differences that may exist. The framework needs to take into account how social processes influence individual cognitions about nature and nature conservation, and how these processes are related to differences between groups of people. It also needs to acknowledge how specific local practices influence people’s conceptualizations of nature and people’s reactions to nature conservation practices. Consequently, the conceptual framework needs to move beyond the evolutionary based focus on communalities in landscape preferences and be well equipped to contribute to the understanding of differences in views between people – differences between experts and lay people, between residents, farmers, birders, and between many other social groups. At the same time it should not lose sight of more

general meanings of nature that circulate in society and are influenced by cultural developments that go significantly beyond specific practices of nature management or nature recreation.

Moreover, the framework should in my view also acknowledge the interrelatedness or transversality of the different aspects of the human–nature relationship. While historical and social constructivist approaches acknowledge this interrelatedness, most psychological approaches tend to focus on individual concepts, like values, beliefs, or preferences. The concept of images of nature (and related concepts, such as visions of nature and concepts of nature) may be a promising starting point for such a comprehensive view. However, the social processes through which these images or visions are developed or transformed have received little attention and the theoretical foundation needs to be strengthened.

Finally, related to methodological questions, in my view the framework needs to acknowledge the merits of both qualitative and quantitative research. Although the methodological individualism of environmental psychology can be criticized, its rigorous quantitative research methods have resulted in some well-established concepts and research methods that should not be too easily dismissed. I believe that a pragmatic combination of qualitative research (when needed) and quantitative research (when possible) has additional value over a one-sided focus on either one of them.

In the following chapter, I develop the conceptual framework of this thesis in order to respond to the challenges posed in this chapter.

# **3** **Social representations of nature**

**The outline of this chapter have been published in:**

Buijs, A. E. (2008). Immigrants between two cultures: the use of social representations theory to understand cultural dynamics in images of nature. *Landscape, Leisure and Tourism*. H. De Haan and R. Van der Duim. Wageningen, Eburon: 43-62.

## **3 Social representations of nature**

### **3.1 Introduction**

I have now formulated the criteria for the conceptual framework that guides this research. The most challenging of these criteria is the need to embed individual cognitions about nature, landscape, and the environment in the social processes through which these cognitions are developed, contested, circulated, and put to use. Second, the framework should be suited to investigate how these cognitions are related and whether they can be considered comprehensive views. Third, the approach needs to accommodate the existence of differences in views between people and between social groups. Finally, as argued in Chapter 2, the approach needs to be grounded in real-life practices that are related to nature policy and management.

To develop this framework, I introduce the concept of social representations of nature, and suggest using this concept to understand how social groups and individuals understand their natural environment and act upon it. The theory of social representations combines elements from mainstream psychology and from social constructivism. It for example combines the concepts of value and beliefs from psychology with the focus on communication and discourse from social constructivism. Based on social representation theory I suggest that social representations of nature are not restricted to the individual realm of cognitions (as in environmental psychology) or to the social realm of discourse (as in many social constructivist accounts), but are developed in the encounters between individuals, the social group to which they belong, and the natural environments they encounter.

In section 3.2, I describe social representations theory in more detail and translate the theory to the field of the human–nature relationship. Section 3.3 concerns the importance of studying social representations of nature in concrete social practices that are related to nature management and nature experience. Based on this argument, section 3.4 details how social representations are a resource for framing and experiencing nature. Section 3.5 presents the methodologies used in this thesis. In the final section, I draw theoretical conclusions about social representations of nature, and use these conclusions to reformulate the preliminary research questions presented in Chapter 1.

## 3.2 Social representations theory

### 3.2.1 Social cognitions

Many traditions in social psychology focus on how individuals develop representations of the outside world (Carlston & Smith, 1996; Taylor, Peplau, & Sears, 2006). These traditions focus on the individual level and conceptualize our representations of the outside world as mental representations. Cognitive processes of perception, attribution, and categorization mediate individual experiences and contribute to the development of mental representations (Carlston & Smith, 1996). Chapter 2 provided several examples of these approaches.

This focus on the individual level is often a theoretical and methodological choice. Most social psychologists acknowledge the influence of social processes, but treat them as external variables and place them outside the scope of their studies (Taylor, Peplau, & Sears, 2006). Social representations theory, however, explicitly incorporates these social processes into its theory and replaces the concept of mental representations with the concept of social representations. As such, it not only acknowledges but also explicitly investigates the socio-historical processes through which our representations of the natural environment are developed. The rapid rise of Romantic representations of nature at the end of the 18<sup>th</sup> century is a clear example of the importance of such socio-historical processes through which representations of nature are developed. Poems and paintings spread throughout Europe a new way of looking at nature. The social realm remained influential in the development of lay people's social representations of nature in the 20<sup>th</sup> century, through, for example, emerging practices of nature recreation and media representations as on Discovery Channel (Van Koppen, 2002).

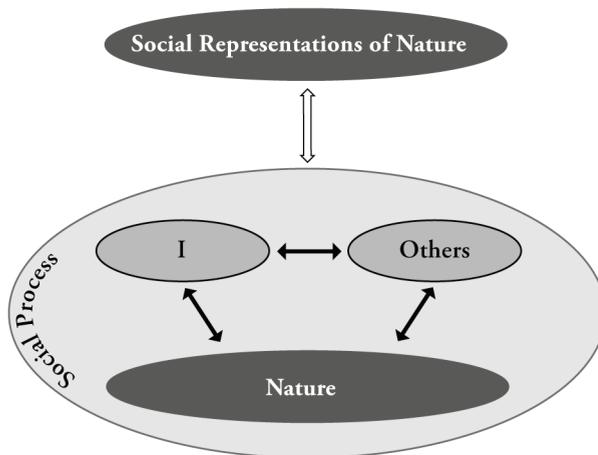
Social representations theory has often been called a social psychology of knowledge. The focus is on how social groups develop common-sense knowledge (or “practical knowledge” or “folk knowledge”) as a joint effort. How do people understand the social and material world around them, and what meanings do they attach to that world? The world is discussed and defined on the level of interpersonal communication. Such knowledge is then seen as consensual knowledge, which is why Moscovici (1961/1976) introduced the term “social cognitions.”<sup>1</sup>

The theory of social representations is positioned between methodological individualism and social constructivism. Its focus on the sociogenesis of cognitions –

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<sup>1</sup> The term social cognitions should not be confused with theories on social cognition in cognitive psychology. In cognitive psychology, social cognition relates to individual cognitions about people and other social phenomena (e.g. Frith, 2008).

that is, the social processes through which meanings<sup>1</sup> are developed – distinguishes it from most psychological theories, while its acknowledgement of the importance of mental processes and the incorporation of socially developed views into individual minds distinguishes it from most social constructivist theories. They are not developed individually, in our personal encounters with nature and through a process of perception and interpretation. Social representations are produced primarily by communication with other people and through such institutions as the media, nature protection organizations, and leisure practices. They facilitate communication between people by presenting a more or less commonly shared set of representations. Wagner and colleagues (1999, p. 96) therefore define social representations as “the collective elaboration of an object by the community for the purpose of behaving and communicating.” Figure 3.1 illustrates this social context in which social representations of nature are developed.



*Figure 3.1: Representation of nature as social representation: The development of social representations of nature as the result of the interaction between an individual (“I”), the social group to which he or she belongs (“Others”), and the physical environment (“Nature”) (adjusted from Moscovici, 1984, p. 9)*

<sup>1</sup> It is important to acknowledge that when I speak of meaning, I refer to a wide variety of attributes a group or a person may attach to the object. As such, I use the term “meaning” in a broader sense than how it is conceptualized in constructivist theories, in which “meaning” is defined as something that is produced in a context-specific social practice. I describe the relationship between social representations and social constructivism in more detail later in this thesis.

### 3.2.2 A web of interrelated symbolic meanings.

The concept of social representations draws attention not only to the sociogenesis of representations of nature, but also to the symbolic character of these representations. Our understanding of the natural environment is not just a matter of automated perception of this world: Understanding is an activity in which meanings are actively attributed to the outside world (Hall, 1997). Social representations of nature are examples of such meanings. To be more concrete, social representations of nature are the meanings we attribute to the *object* “nature.”<sup>1</sup> As such, social representations of nature should not be conceived as merely “reflecting” the outside world, or as being “imprinted” in the minds of individuals as a result of evolutionary adaptation.

People’s understanding of their natural environment is deeply influenced by the concepts they have learned to attach to it. People talk and read about nature, about enjoying nature in recreational practices, or about the management of nature in conservation practices, and this imbues “nature” with all kinds of symbolic meanings (Jacobs, 2006); for instance, “nature is beautiful,” “nature is important to protect,” or “nature is a self-sustaining system that humans should leave untouched.” Although this assumption may have been rather new when the theory was developed in the early 1960s (Moscovici, 1961/1976), it is very much in line with most present-day social science paradigms. The conclusion that our reactions to the outside world are based on the symbolic understanding of that world, has found widespread acceptance especially since the publication of *The Social Construction of Reality* (Berger & Luckmann, 1967). However, what distinguishes social representations theory from most other theories is its psychological basis, which provides the theory with some useful tools to unravel some processes through which common-sense knowledge is developed. Examples of such processes are those of anchoring and objectification, through which new and strange phenomena are made familiar. Social representations theory also describes different modes of dissemination of social representations, such as diffusion, propagation, and propaganda.

Social representations of nature are comprehensive and holistic concepts. They can be conceived as a web of interrelated meanings that a specific social group attributes to nature. Unfortunately, social representations theory has not developed a clear inventory of the types of meanings that may be incorporated into a comprehensive social representation. Studies usually refer in a very general sense to “ideas and concepts.” However, some authors distinguish on a more abstract level between dimensions that may constitute a social representation. For example, Moliner (1996) distinguished between a descriptive and an evaluative pole: The former comprises

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<sup>1</sup> As described in Chapter 1, the use of the term “nature” should be interpreted in the broadest possible sense.

definitions and descriptions, the latter, norms and expectations. This distinction between descriptive and normative dimensions fits very well with several research traditions in the study of the human–nature relationship described in Chapter 2. Several studies suggest that the values of nature (Buijs, 2000; Keulartz, Swart, & Van der Windt, 2000; Van den Born, 2007), value orientations (Fulton, Manfredo, & Lipscomb, 1996), beliefs about the characteristics of nature (Kempton, Boster, & Hartley, 1995; Dunlap, Van Liere, Mertig, & Jones, 2000; Keulartz, Swart, & Van der Windt, 2000), and the definitions or demarcation of nature (Buijs, 2000; Van den Berg, De Vries, & Vlek, 2006) are important meanings that people attach to nature (see fig. 3.2 for an overview).

	Normative		Cognitive	
	Values	Value orientations	Definition of nature	Beliefs
Definition	Guiding principles of what is moral, desirable, or just <sup>1</sup>	An expression of basic values that are revealed through the pattern and direction of basic beliefs held by an individual <sup>2</sup>	What are the boundaries <sup>3</sup> of the concept ‘nature’ <sup>4</sup> ?	Associations people establish between the object to which it refers and the attributes they ascribe to that object <sup>5</sup>
Examples	Ecocentrism, the importance of protecting endangered species	Mutualism towards animals and wildlife <sup>6</sup>	‘Nature comprises only autonomous environments’ ‘Nature comprises all living beings’	‘Nature as fragile’ ‘Ecology can never fully understand nature’

Figure 3.2: The normative and cognitive dimensions of social representations of nature.

<sup>1</sup> (Kempton, Boster, & Hartley, 1995, p. 12)

<sup>2</sup> (Manfredo, Teel, & Bright, 2003, p. 289)

<sup>3</sup> Of course, much more could be said about the importance of discussions on the boundaries of nature from e.g. the field of “boundary work” (e.g. Gieryn, 1983)

<sup>4</sup> (Buijs, 2000)

<sup>5</sup> (Eagly & Chaiken, 1998)

<sup>6</sup> (Fulton, Manfredo, & Lipscomb, 1996)

As representations are also used to communicate, social representations theory suggests that a representation often becomes represented and summarized through the use of metaphors<sup>1</sup> and icons<sup>2</sup> (they are "objectified": Moscovici, 1984). Such icons and metaphors may come to stand for a representation and can be used as a short cut in communication about the object (e.g. "nature" ;Wagner et al., 1999). As social representations of nature relate to a very "visible" type of object, it can be expected that especially icons will be part of a representation of nature. For example, nature conservation agencies use charismatic species as icons in their communication on the importance of nature conservation or the gravity of global warming: Greenpeace uses the polar bear as an icon of nature threatened by global warming, while the WWF uses the panda as a global icon of species that is under threat. In the Netherlands, the small-scale landscape of 1850 has become an important icon for nature conservation practices. Because metaphors and icons are influential means of persuasion (Ang, 2006), they could be considered the discursive dimension of social representations of nature. However, as this thesis does not explicitly investigate such metaphors and icons, they are not included in the overview given in figure 3.2.

### 3.2.3 Different groups, different representations

From a theoretical point of view, one can speak of social representations at different social levels. First, one can speak of social representations on the national or cultural level. However, one can also differentiate between different social groups: Every "natural" social group may have developed its own social representations of an object. Scholars who focus on the national or cultural level tend to concentrate on the commonalities of social representations and, for example, to investigate the historical development or the relationship with scientific knowledge, while scholars who focus on the group or subcultural level tend to concentrate on the differences between the social representations held by different groups, and on the disputes and conflicts that may arise from such differences (see also Gervais, 1997). Moscovici describes social representations as competing representations. In his study of social representations of psychotherapy, he distinguished between three different representations of psychotherapy that are related to different social groups in French society (Catholics and Socialists) (Moscovici, 1961/1976).

In Chapter 2 I have suggested that most representations of nature found in Western cultures are influenced by the Romantic representation of nature. However,

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<sup>1</sup> A metaphor can be defined as "the transfer of concepts from one semantic domain to another" (Lakoff & Johnson, 1980).

<sup>2</sup> An icon can be defined as "an encapsulated myth (often visualized), relating to simple stories with compelling characters and resonant plots" (Holt, 2003).

different social groups may have developed different interpretations and elaborations of this general Romantic representation as a result of their specific social and material environment. Therefore, although social representations of nature may differ between different social groups, one cannot speak of a “right” or a “wrong” representation of nature. For example, farmers differ significantly in their views on nature as compared to, for example, tourists or birdwatchers (Aarts, 1998; Filius, Buijs, & Goossen, 2000). In my view, the analytical strength of the concept of social representations lies in differentiating between the social representations of nature held by specific social groups because it allows one to understand the struggles between these groups. If one wants to understand social conflicts that are related to different social representations of nature, it is much more valuable to consider them as competing concepts that differ between different social groups, than as a general consensual environment in which these discussions take place. Several empirical examples exist of the strength of social representations theory in understanding differences between social groups (see for example Jodelet, 1991; Gervais, 1997; Castro & Lima, 2001; Beck, Matschinger, & Angermeyer, 2003; Castro & Gomes, 2005).

### **3.2.4 Processes of representation: anchoring and objectifying**

Social representations theory also investigates the processes in which representations are developed. Two of the most important processes are anchoring and objectifying. Social representations are developed and adjusted primarily when new material or social circumstances emerge or new, possibly threatening information about an object becomes available (Wagner, 1998). In the field of environmental sciences, the political emergence *biodiversity* as a new scientific and political concept is an example of such a situation. The concept of biodiversity influence policy goals in nature conservation that were threatening to, for instance, farmers. As no specific terms or categories are available to understand a new phenomenon, social groups need to develop a new social representation to master the phenomenon and to symbolically cope with the consequences the phenomenon may have.

According to Moscovici (2000), symbolically coping with a new phenomenon is usually a two-step process. In the first step, the group tries to incorporate the new phenomenon into its already existing system of representations; Moscovici (1984) calls this process “anchoring.” Because no suitable representation is yet available for a new phenomenon, the group links it to existing social representations of related, already familiarized objects. In this process, elements from representations of adjacent objects or situations come to the fore and are used to conventionalize the new object or situation. People start to understand new ideas in terms of more familiar

representations. This process of anchoring is the prime process through which the unfamiliar becomes familiarized (Moscovici, 1984).

This process can also be witnessed with the public understanding of scientific concepts, where the results of scientific knowledge are also anchored in already existing social representations. Scientific knowledge is reinterpreted into collective beliefs, but this reinterpretation is severely influenced by the already existing beliefs, values or metaphors. As such, scientific information is adjusted to the lifeworld of the general public (Moscovici, 1961/1976). For example, Castro and Gomes (2005) showed how the concept of genetically modified organisms (GMO) becomes anchored in well-known dichotomies like nature–culture, natural–unnatural, and risk–safety. Using such well-known dichotomies helps social groups to cope with the introduction of genetically modified organisms symbolically, and suggests way to master and develop attitudes toward GMO’s.

The second step in the production of a social representation is the objectification of the newly formed social representation. A social representation attains its specific form through objectification. The full scope of a representation is reflected in a limited number of summarizing metaphors, icons, or catch phrases (Wagner et al., 1999), which come to stand for the new phenomenon for which a social representation has been produced (Moscovici, 1984). They are very helpful in communicating efficiently on the phenomenon, because they summarize some of the most important elements of the full representation. The icon of “Frankenstein food” is an example of how critical groups summarized their representation of genetically modified organisms (Castro & Gomes, 2005). Of course, neither anchoring nor objectifying is a “neutral” process. They are dependent on the context and lifeworld in which a representation is developed. Furthermore, the process of the reinterpretation of scientific “fact” into popular beliefs also depends on the support of powerful actors who wish to promote specific representations (Lorenzet & Neresini, 2005).

Based on the description of social representation in this section, and inspired by the range of definitions that circulate in the scholarly community (e.g. Moscovici, 1984; Halfacree, 1993; Bauer & Gaskell, 1999; Wagner et al., 1999), I define social representations of nature in this thesis as *group-specific views on nature that are developed through communication and consist of interrelated definitions, beliefs, values, and value orientations.*

### 3.3 Social representations and social practices

#### 3.3.1 A “weak” constructivist interpretation

I have thus far presented the theory of social representations as a coherent and unambiguous social psychological theory. However, as with many social science

theories, there are several debates on the exact status and interpretation of the theory. The subjects of these debates include the epistemological and ontological status of social representations (Halfacree, 1993; Jovchelovitch, 1996; Wagner, 1996, , 1998; Wagner et al., 1999; Markova, 2000). Since the introduction of social representations theory in the 1960s, the dominant interpretation of the theory has evolved from a positivist or post-positivist interpretation into a more constructivist one. In the latter interpretation, the focus is on the social construction of social representations (Potter & Edwards, 1999; Voelklein & Howarth, 2005). However, the exact relation between social representations and discourse is still under debate (Wagner, 1998). The most important differences are related to what Wagner (1998) calls a “strong” and a “weak” constructivist interpretation of social representations theory.<sup>1</sup>

The strong and the weak interpretation of social representations differ especially on the ontological claims of the theory. The strong interpretation is based on relativist ontology: It assumes that “objective reality” may be out there, but that it is something we will never be able to know directly. We only know the natural world through our own senses, lenses and minds, using the symbols we attach to the natural world. As an objective outside world is not accessible to human knowing, social science should focus on the only “reality” we can observe, which is the reality of the social and how people constitute reality through interpersonal interactions (Guba, 1994). The focus is then on the interaction between social actors and not on the physical aspects of nature. The consequence of this strong view on social representations is that these representations are fully intertwined with discourses, and thus the two cannot be distinguished from each other: “To represent is, in a very real sense, *to transform social knowledge into reality* ... as representations become objectified, they acquire a concrete existence and construct ever-new material systems, or natures” (italics in original) (Gervais, 1997, pp. 267-268). In this strong interpretation of social representations, a social representation is more or less comparable to a discourse (see also figure 3.4). It can be questioned whether the theory of social representations in this interpretation has much additional value to discourse theories.

I believe that the strength of social representations theory lies in the two-faced character of social representations: They are social cognitions that are socially defined but individually internalized. The “weak” constructivist interpretation of the theory fully acknowledges this complex character of social representations, and I use it in this thesis in order to preserve the added value of social representations theory as a theory between methodological individualism and social constructivism.

The weak interpretation considers both discursive and non-discursive phenomena to be constitutive of social representations. The non-discursive dimension comes in at

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<sup>1</sup> This discussion is closely related to the discussion in discourse theory, in which also strong and weak constructivist interpretations of discourses are distinguished (Van den Brink & Metzger, 2006).

least two flavors. First, “physical” nature acts as a setting in which discourses are developed. Especially scholars from critical realism have investigated this relationship between discursive and non-discursive<sup>1</sup> practices. They argue that there is a material dimension to people’s lives that is partially non-discursive. Although physical reality is *interpreted* in discursive practices, the material dimension of nature can have direct impact on people (Bhaskar, 2002, p. 91). It produces a setting in which certain interpretations of reality are more easily developed than other interpretations (Sims-Schouten et al., 2007). For example, natural disasters can have direct material impact on people, sometimes even resulting in casualties. This impact is material, and not yet discursive. As a second step, this material phenomenon becomes interpreted and influences the meanings attached to, for example, safety from natural disasters or about nature in general. The material effects of such a disaster then function as a context in which social representations of nature may be changed as a result of these effects. Of course, this change is a fully social process based on symbolic interpretation and influenced by power relations. Altogether, even if most of our understanding of the physical world is based on symbolic interpretation, the direct, unmediated impact of physical phenomenon (the “brute facts”: Wagner, 1998) also needs to be taken into account in order to understand social representations of nature.

Second, the non-discursive context of the human–nature relationship relates to the *embodiment* of experiences (e.g. Macnaghten, 2003). Several studies have shown how nature experience is also an embodied experience. For example, the sensorial perception of the material environment is partly a direct, unconscious, and thus non-discursive, experience that influences the interpreted, discursive experiences. Examples of such bodily experiences are the pleasant feeling of the sun on one’s skin, and the automatic, non-conscious rise in adrenalin levels when a dangerous animal is perceived. These non-discursive experiences are also investigated in other fields. In neuropsychology and the philosophy of mind, a distinction is made between sensation and perception. Sensation is then the (unconscious and non-discursive) sensory input through our senses to our minds, and perception is the (partly conscious but fully discursive) interpretation of this input into meaningful understandings (Jacobs, 2006). In environmental psychology, this discussion relates to that on the relation between the cognitive and affective evaluation of natural landscapes. Several studies have demonstrated that this evaluation is at least partly based on (unconscious) affective processes that emanate from evolutionary hard-wiring (Ulrich, 1983; see also Ch. 2).

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<sup>1</sup> This non-discursive reality is also sometimes referred to as the “extra-discursive” reality, and this approach to constructivism is sometimes called “grounded constructivism” (Sims-Schouten et al., 2007).

The relationship between the weak and the strong constructivist interpretation of social representations theory and the different status of physical nature is illustrated in figure 3.4.

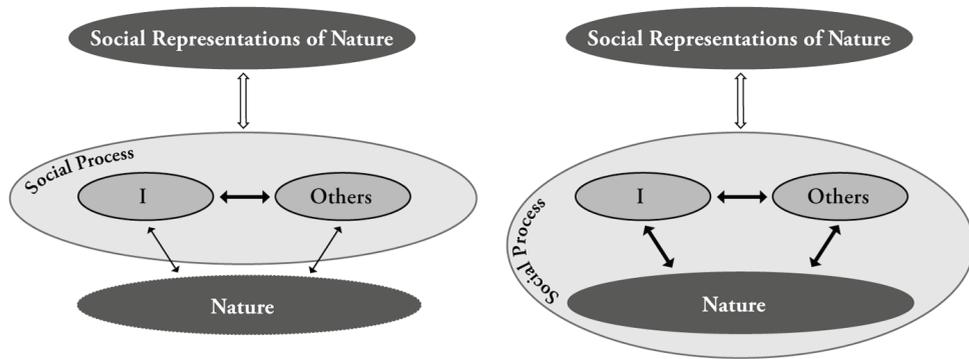


Figure 3.4: Strong (left side) and weak (right side) constructivist interpretation of social representations theory compared on the relevance of physical nature

### 3.3.2 Social practices

The complex relationship between the physical world and the discursive world, and between the social realm and the individual mind, is also discussed in theories on social practices. In recent decades, many social science theories have focused on the level of social practices. For example, Reckwitz (2002) developed a general theory of social practices. In this thesis, I use his interpretation of practice theory to place social representations of nature in the social context of nature-related practices.

In Reckwitz' interpretation of practice theory, behavior is conceptualized as social behavior. However, the social is not built solely on distributed cognitions, nor on discourse or interaction; instead, it is constituted in social practices. Reckwitz (ibid., p. 250) defines a social practice as a routinized “type of behaving and understanding that appears at different locales and at different points of time and is carried out by different [individuals].” According to Reckwitz, a practice consists of several interconnected elements: a system of knowledge and understanding; mental activities; bodily activities; physical objects and their use; and discourses and structures.

As may have become clear, this quest for the in-between betwixt the individual, the social, and the material is very comparable to the weak interpretation of social representations theory. Reckwitz' interpretation of practice theory focuses both on the social level of “systems of knowledge” and on the individual level of mental activities, as does social representations theory. This commonality is also found in the

acknowledgement of the material world's influence on and relevance to how social practices and social representations evolve. Like social representations theory, practice theory sees knowledge as a specific way of "understanding the world," including the understanding of physical objects like nature. Both theories also converge on understanding practical knowledge as shared knowledge, which often acquires a certain stability through the continuous reproduction of this knowledge through communicative (discursive) processes. Finally, both theories discuss the importance of structure and the relationship between structure and agency. In practice theory, these structures are routinized actions that manifest and reproduce themselves in social practices. The weak constructivist interpretation of social representations theory considers social representations as structures that provide a shared set of meanings to understand a phenomenon. Although this interpretation of structure is much more limited than the structures in practice theory, both theories converge on the temporality of structures and the possibility that structures change if circumstances change.

Based on these similarities, I suggest investigating social representations in social practices. Social representations can then be interpreted as systems of knowledge and understanding, developed and mobilized in social practices. Studying the human–nature relationship at the level of social practices avoids the pitfalls of methodological individualism that treats perceptions of nature and social representations of nature as purely individual representations of the outside world that are based on personal experiences or evolutionary adaptation. Furthermore, it also avoids the pitfalls of structural determinism, in which the agency of actors tends to be underestimated. It allows the incorporation of both the intentionality of individual actors and the communicative practices in which social representations are developed and mobilized (see figure 3.5).

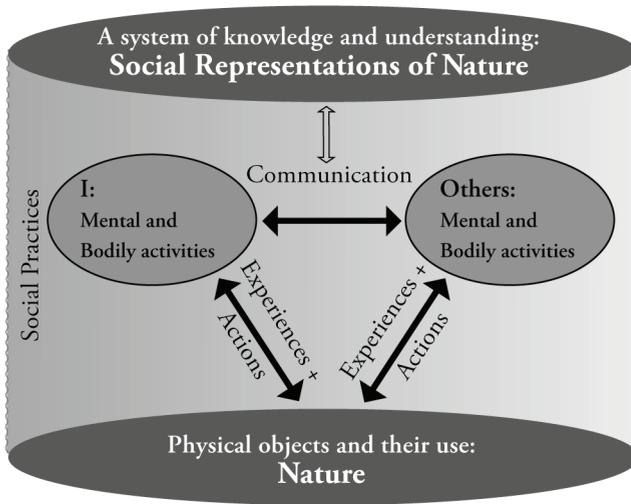


Figure 3.5: Social representations of nature in social practices

Social representations of nature are related to many different social practices. They relate to media practices, in which nature and landscape are represented in a very picturesque way; to very bodily practices of nature recreation and leisure; and to concrete nature conservation practices, for example, in the institutionalized practices of volunteers who, in an organized form, contribute physically to the maintenance of the landscape (e.g. Lawrence, 2006).

It is important to realize that social practices are intertwined. First, they relate at the individual level. Individuals usually engage in different nature-related practices at different moments: They watch nature documentaries on TV, go on holiday to Costa Rica, and walk in the woods on Sunday afternoons. A special feature of nature-related social practices is that the practices meet not only in individual people, but also in physical space. In a specific natural area different practices can be distinguished, such as nature management practices, mountainbike-practices and hiking practices. It is exactly because different practices meet in physical space that conflicts between practices may develop in for example a National Park. Such conflicts not only relate to different recreational practices (e.g. walking vs mountain biking), but may also emerge when nature management practices conflict with the recreational practices of tourists or residents. Tension between practices may result in a new kind of practice, namely that of a socio-political conflict over nature management between different stakeholders.

### 3.3.3 Stability and change

Social representations of nature thus extend beyond any single practice. Being linked to different social practices contributes to the stability of a social representation (cf. De Rosa, 2006). Although social representations change over time, they also tend to show “remarkable stability” (Moscovici, 2000). Significant change usually occurs only when new phenomena are introduced or when disputes with other groups arise (Moscovici, 1984). Because of this relative stability, a social representation need not be negotiated in every social practice: When all members of a social group or culture share the same representation, it becomes a form of consensual knowledge that is taken for granted (*ibid.*). In such a situation, social representations may even become “fossilized” (Moscovici, 2000; Voelklein & Howarth, 2005). They have then become an uncontested (and often un-reflexive) element of a specific culture. When fossilized, social representations become part of the social stock of a group’s or a society’s knowledge (cf. Schutz, 1962).<sup>1</sup> Applied to the human–nature relationship, this also holds for several elements of social representations of nature. For example, the notions that one can enjoy nature, that nature is beautiful, and that nature is healthy are elements of the dominant social representations of nature that are recognized by most social groups in Dutch society. In their daily conversations, people use elements of the representations to position themselves in relation to nature, without needing to justify these representations.

This relative stability of social representations of nature can be illustrated by the persistence of the Romantic representation of nature that has been dominant in Western representations of nature since the 18<sup>th</sup> century. Although the details of this Romantic representation of nature have changed from time to time (e.g. between a wilderness and an Arcadian interpretation), in a very general sense it has shown the “remarkable stability” referred to by Moscovici.

Despite this relative stability, it is important to acknowledge that social representations of nature are also dynamic: They may change when a new and unknown situation occurs. This new situation can be related to the emergence of new events that raise serious questions about the appropriateness of the existing representation of nature, or to the emergence of socio-political disputes and conflicts. The establishment of a national park, the implementation of new management practices, and a proposed change in land use are examples of such new situations in the field of nature management that may lead to changing social representations of nature. Such practices are the site where different social groups with different views and interests meet. It is where they express their ideas about the management of an

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<sup>1</sup> However, social representations should not be conceived as a general stock of knowledge, as meant by Schutz. Instead, social representations are group dependent.

area and engage in negotiations over concrete management practices. Such a situation of social conflict stimulates groups to reflect more critically on the representation of nature they have developed. As a result, social representations of nature that have become stabilized will become questioned anew. Therefore, socio-political issues that are related to nature policy and nature management are interesting settings to investigate the relative stability and dynamics of social representations.

### **3.4 A cultural resource for framing and experiencing**

What are the functions of social representations of nature in the various social practices described above? In my view, they can be considered a cultural resource that is used by individuals and social groups to understand phenomena and act upon them in social practices. The term *cultural resource* was coined by Ann Swidler (1986). She defines culture as a tool kit packed with all kinds of skills, habits, values, myths, and metaphors that are used as a resource for people to construct strategies of action. Consequently, the essence of culture lies in providing a cultural repertoire that may be used as a pool of culturally defined elements that people may draw from to make a point in a discussion. According to Swidler, in settled practices, people's conduct is routinized behavior, and dominant cultural values and beliefs may be drawn upon in a non-reflexive way. However, when these routines are broken, social practices (and social representations) become less settled and the dynamic aspects of culture come to the fore. Culture is then sometimes more used as an ideology to which actors refer to in order to justify their attitudes or actions. This concept of cultural repertoire provides us with a very useful way of looking at how social representations of nature are used as a resource in social practices.

To further clarify the functions of social representations of nature, it is helpful to return to the discussion on discursive and non-discursive reality in relation to social representations of nature. The position taken in this thesis – a position that is based on the weak-constructivist interpretation of social representations – acknowledges not only the relevance of the material world as a context on which social representations are built, but also the relevance of the internalization of these representations into individual minds. For example, in his renowned studies of rurality, Halfacree (1992, 1993) distinguished between discursive functions of social representations used in the social realm as discursive argument, and non-discursive functions related to the mental aspects of social representations. Consequently, we can theorize that also social

representations of nature function as a resource for discursive *and* non-discursive practices.<sup>1</sup>

As a resource for our individual understanding of nature, social representations of nature help us to understand the world around us and, related to this understanding, may inform our actions. Social representations of nature then provide a symbolic shorthand for the interpretation of our sensory inputs (Halfacree, 1993). Such symbolic shorthands are often considered to be the cognitive layer through which we filter our perception of the natural environment (Wohlwill, 1983).

Second, social representations of nature also serve as a cultural resource for discursive actions. Especially in practices where the natural environment has become the issue of socio-political conflicts, the discursive functions of social representations of nature may be more important than their non-discursive functions. When engaged in such practices, people strategically select specific elements from a representation of nature to discursively pursue valued ends (cf. DiMaggio, 1997). Macnaghten (1991) demonstrated that in political issues, different meanings of nature are used discursively to promote certain attitudes. Using discourse analyses, he described how local citizens argued against a landfill process using different kinds of, and sometimes contradictory, meanings of nature: They sometimes referred to the naturalness of the current landscape, while at other times they used arguments related to the visual harmony of the surrounding cultural landscape to substantiate their rejection of the project (Macnaghten, 1991).

In this thesis, I focus on both discursive and non-discursive practices; that is, on the discursive practice of the framing of socio-political issues regarding nature conservation and management (section 3.4.1; see also section 2.4.2), and the non-discursive, experiential practice of nature- and landscape perception (section 3.4.2; see also section 2.2.2).

### 3.4.1 A resource in framing processes

As described in Chapter 2, the process of framing is about actors' efforts to broaden the acceptance of their story about a socio-political issue. This can also be the case when nature management practices become contested. Actors then start to engage in framing processes in order to promote their interpretation of the issue and suggest actions that need to be taken. The failure or success of framing strategies is closely related to the cultural resonance of a frame. To mobilize support for a frame, the frame has to "resonate" with important cultural elements of that culture. Actors try to

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<sup>1</sup> Also the approach to social practices described in section 3.4 distinguishes between discursive and non-discursive actions (Schatzki, 2002. In: Gadinger, 2007).

increase the support for the frame they are propagating by linking it with values or beliefs that are culturally accepted as important or true. Cultural resonance “increases the appeal of a frame by making it appear natural and familiar” (Gamson, 1992, p. 135).

In my view, the concept of social representations of nature can be of help in improving the understanding of the cultural resonance of the framing of environmental conflicts. In framing an issue, actors draw upon culturally accepted social representations of nature to advocate specific frames. By referring to generally accepted social representations of nature, the cultural resonance of a specific frame is enhanced. Social representations of nature are thus used as a resource in framing processes.

An example from nature management agencies in the United States may illustrate this process. The protection of wilderness areas is usually framed by US nature conservation agencies as safeguarding biodiversity and the possibility to experience solitude. Wilderness proponents in Alabama also used to employ such arguments to frame the importance of protecting wilderness. However, in the conservative culture of this state, such framing of wilderness protection proved not very successful: The importance of solitude and biodiversity did not resonate very well with local views on nature (I interpret such views as social representations of nature), which focused much more on traditional ways of utilizing the land for farming and hunting. To bring their arguments more in line with local representations of nature, wilderness proponents in Alabama decided to frame the importance of wilderness conservation differently, namely as the need to protect a “traditional practice” and to foster the cultural connection to the land. Embedding the framing efforts in such local representations of nature proved much more successful than framing it as the importance of solitude experiences (Walton & Bailey, 2005).

Studying social representations in framing processes enables one to study the dynamics and stability of social representations. Contested nature management practices are an important example of a social practice in which actors engage in the production and adaptation of social representations of nature. In same process of using a social representation in the framing process of nature management, this representation is reproduced. As a result of the relatively explicit and reflexive use of social representations of nature in disputes over nature management, these representations may be slightly adjusted to the changing circumstances of the social groups that endorse this representation. Their representation of nature may thus be confirmed or it may be altered to a greater or less extent during the framing process.

Considering social representations of nature as a dynamic cultural resource for the framing of an issue contributes not only to social representations theory but also to framing theory. In much framing research, the culture with which the frame should resonate is considered a stable background variable (Gamson, 1988, p. 227).

Furthermore, in studies on political communication and in social movement research, cultural resonance is often described as a one-way process: The focus is on the influence that dominant cultural meanings in a given society has on the success of framing efforts, not on the influence of the framing process on cultural meanings. However, as Kubal (1998) pointed out, the cultural environment in which frames are developed may be dynamic and constantly changing. Considering social representations as one of the cultural resources in framing processes allows for a more dynamic view on the relationship between framing and cultural resonance.

Relating social representations theory with framing theory thus contributes to the fine-tuning of both theories. Framing theory may contribute to social representations theory, as it describes one of the processes through which social representations may get discursively changed. At the same time, social representations theory may contribute to framing theory, as it helps to understand the influence of cultural resonance on framing processes.

Frames incorporate different aspects that may be relevant to this specific conflict. Social representations of nature are just one of such aspects. For example, a typical issue frame on nature restoration on a flood plain may incorporate economic aspects (e.g. what is the economic rationale behind the issue?), safety aspects (do people feel that the project will enhance their safety against flooding?), and nature-related aspects (e.g. what kind of nature do we want in this area?). Only this last-mentioned topic is directly related to social representations of nature.

Thus, social representations are used in framing processes. But what exactly is the difference between the two concepts? First, frames and representations differ in the phenomena to which they refer. Social representations are the socially developed interpretations of a specific object, in our case nature. It is through our social representations of nature that we understand and make sense of “nature.” Frames, on the other hand, are related to a specific socio-political issue, for example, the implementation of nature restoration plans. It is through the framing of such an issue that we take a stance with respect to the issue, define what is at stake, and select which topics should be taken into account.

Second, frames and social representations of nature differ in their context dependency and time scale. Frames are developed in and confined to discourses between different groups that are engaged in a specific social practice that is related to a concrete socio-political issue (e.g. limiting the access of motorized vehicles to a national park). When a conflict emerges, actors start to discursively frame the issue, thus developing one or more frames. After a while, when the conflict has been resolved, the frame fades away. They are thus highly volatile in nature and may change considerably during a framing process (Kaufman & Smith, 1999). Contrary to frames and framing, social representations of nature transcend specific practices. They are developed in many different social practices that are related to many different issues

and contexts. Social conflicts on nature management are just one example. The same representations are used and further developed in totally different practices, such as recreational practices, nature documentaries, *and* conflicts on nature management practices. Furthermore, they are often used un-reflexively in routinized practices. As a result, they are usually much more institutionalized, and thus much more stable, than the highly volatile frames. Although the concepts are not comparable, this difference between social representations and frames is somewhat comparable to that between values and attitudes: While attitudes are related to very concrete situations or conflicts and disappear when the conflict is over, values are much more general. They transcend specific situations and are relatively stable over time.

### 3.4.2 Social representations and individual images of nature

Social representations theory conceptualizes cognitions about nature as social cognitions. Cognitions are not treated as individual elaborations of the world, but as mental reflections of socially constructed representations. Social representations thus not only reside in communication between people “across the minds of members of a social group”, but are also “represented within individual minds” (Jovchelovitch, 1996, p. 125). Social representations theory thus replaces the dualism of individual cognitions and social discourse with the duality of social cognitions.<sup>1</sup> When focusing on how representations are exchanged in social processes, one can speak of *social* representations. When focusing on how these social representations are reflected in individual minds, one can speak of *mental* representations. However, although these concepts can be distinguished analytically, one needs to remember they can not be distinguished conceptually. Mental representations are the individual manifestation of social representations and as such are inextricable elements of a social representation.

An import reason to distinguish the mental images from the social images is related to the fact that not all elements of a social representation need be adopted by an individual (Voelklein & Howarth, 2005). Depending on personal circumstances, including one’s experiences with nature, some elements may be more relevant than others. Elements of minor importance may even be unknown to an individual. The way social representations are shared by individuals can therefore be described by Harré’s definition of a “collective plurality,” whereby all members of a group have

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<sup>1</sup> Of course, the term duality is inspired and related to the duality of structure as introduced by Giddens. Although I do not develop this line any further, social representations can be conceived as structures that are drawn upon by knowledgeable agents while at the same time being reproduced. In this process, structures can be transformed, thus allowing for the agency of individual actors (see Halfacree, 1991 for a more elaborated comparison between the duality of structure and social representations theory).

overlapping parts of the whole, but the whole is comprehended only by reference to the collective (Bauer & Gaskell, 1999).

Because individual representations cannot be equated with social representations, for analytical reasons I differentiate in this thesis between social representations of nature and the mental reflection of these representations of nature. Referring to already existing literature on individual images of nature (e.g. Buijs, 2000; Krömker, 2004; Rink, Wächter, & Potthast, 2004; Stamou & Paraskevopoulos, 2004; Rink, 2005; Buijs, Pedroli, & Luginbühl, 2006; Van den Berg, De Vries, & Vlek, 2006), I choose to call the mental reflections of these representations individual *images of nature* (see figure 3.6). The methodological consequences of this analytical duality will be discussed in section 3.5, focusing on the distinction between analyzing the expression of social representations in interactions and communication and analyzing images through individual interviews or questionnaires.

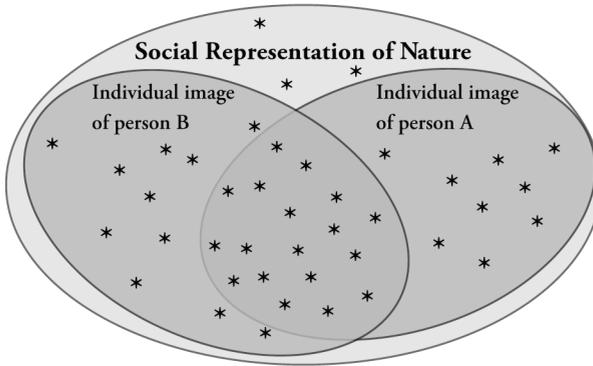


Figure 3.6: *Social representations and individual images of nature*

Social representations can be found in the dynamical interaction in communication between actors. Individual people internalize elements of the social representation of the group to which they belong<sup>1</sup>. Images of nature are then the appropriation of a social representation of nature into individual minds. People store these elements in their individual minds, which then become part of the cognitive system of each individual. Such internalized social representations can be retrieved at any time when people encounter the related object, or when they are about to communicate about it. As such, they function as a resource for how individuals understand and experience nature. By providing a socially elaborated set of relevant values, beliefs, and so forth,

<sup>1</sup> Of course, in late modern society people usually belong to more than one social group. Consequently, people may draw from more than one social representation. See also (Castro & Lima, 2001).

they enable people to make sense of the natural world and to develop certain attitudes toward and experiences of that world. For example, individual images may inform people's experiences of a landscape and consequently their liking or disliking of it (Ch. 2). Therefore, research question four will hypothesize that individual images of nature inform landscape preferences.

Through engaging in interaction and communication, individuals may also contribute to the change of a social representation of nature. Through expressing elements from their individual images they once incorporated from that representation, they reinforce the representation. Furthermore, individual experiences and especially expressing these experiences in communication, may also contribute to the change of a representation. For example, holiday trips to exotic places like the Himalayas or the Amazon may change people's individual images. They may start to recognize the qualities of the highly managed and well-groomed cultural landscape. Or the opposite effect may occur, and their desire for wild and untouched natural areas increases, a desire that they also want to satisfy in the Netherlands. Expressing these experiences in communication with other people may influence to a greater or lesser extent the social representation of the whole group.

### **3.5 A diversity of methods**

The relationship between social representations of nature and individual images of nature has also methodological consequences. Individual images are mental constructs, and thus need to be measured using methods designed to capture such constructs. Questionnaires and individual interviews are examples of such methods.

Social representations are social or relational constructs. Therefore, they need to be measured on the social level. A broad range of methods is available to study them, ranging from quantitative content-analyses to focus groups or participant observations (Wagner et al., 1999). The choice of the appropriate methodology is especially influenced by the difference between studies that focus on the content of social representations of nature, versus studies that focus on the process of the production of representations or on the use of representations as resources.

Studies that focus on the process of the development or use of social representations of nature preferably relate to specific social practices where such representations are developed and used. Two methods are dominant in this field: content analyses and focus-group research (sometimes in combination with observational techniques). Several studies have used content analysis of mass media to describe how certain social representations are produced and have evolved over time. For example, Castro and Gomes (2005) analyzed 239 articles in the Portuguese press

to investigate social representations of biotechnology. Other studies used focus groups to study representations of biotechnology; for example, Pivetti (2007) organized focus groups with animal welfare activists in order to capture the social representations of this group. Using focus groups and document analysis, chapter six and seven of this thesis especially focus on such processes.

Studies that focus on the content of social representations may also use the above described techniques. Through studying the social representations exchanged in communication, one can study the content of these representations. However, one of the main challenges of studying this content is finding all the elements that constitute a representation. After all, in specific forms of communication in specific social practices, not all elements need to be used by the participants or need to be written down in the relevant documents. Consequently, efforts to describe the whole range of elements that constitute a representation would benefit from the use of multiple methods as well as the investigation of a wide range of social practices. Combining the results from different methods and different practices improves the chances that a description of a social representation is exhaustive and that all the important elements are included. In Chapter 6, I use focus groups to study the content of social representations of biodiversity and nature.

Although social representations of nature manifest themselves at the social level, investigating individual images of nature can also contribute to list possible elements of a representation. After all, individual images are based on the internalization of social representations. Therefore, many elements of a representation can be recognized in individual images, and investigating the range of images in a given group or culture is a useful method to list all possible elements that are present in the overarching representation (Bourassa, 1990). This may especially be true with the use of open or semi-structured interviews, as the respondents then have the freedom to freely express their views on the phenomenon. Consequently, although the measurement of individual images of nature does not suffice to investigate social representations of nature, it can contribute to understanding the possible elements of such a representation. For example, Halfacree (1995) used individual interviews and questionnaires to capture the local social representations of rurality in small English villages. Chapters 4 and 5 focus on this individual level. Using interviews and questionnaires, a first inventory is made of images of nature and the elements that are internalized from different social representations of nature.

### 3.6 Conclusions and rephrased research questions

Based on a critical reflection on the dominant approaches in people–environment studies, I have introduced social representations theory as a novel approach to study the human dimensions of nature and nature management. By redefining individual cognitions as social cognitions, social representations theory combines the focus on individual cognition from environmental psychology with the focus on social processes in more social constructivist traditions. I defined social representations of nature as the “group-specific views on nature that are developed through communication and consist of interrelated definitions, beliefs, values, and value orientations.”

This definition and the theoretical elaboration of the concept fulfill the criteria formulated at the beginning of this chapter. First, social representations of nature are conceptualized as social cognitions that are developed and shared in the relationship between individuals, the social group to which they belong, and their natural environment. The different elements of social representations of nature are inspired by environmental psychology. However, these definitions, beliefs, values and value orientation need to be interpreted as socially defined elements. Second, social representations of nature are comprehensive concepts, consisting of interrelated definitions, beliefs, values, and value orientations. The existence of different and sometimes conflicting social representations of nature is also explicitly acknowledged. As such, the concept of social representations is a useful addition to the individualistic focus of environmental psychology, and can be helpful in answering Bourassa’s (1990) call to incorporate cultural influences in the study of landscape perceptions. It is also a helpful approach in describing the historical differences and continuities in views on nature that have been shown to exist in Western societies and cultures. Finally, social representations of nature are developed and used in different social practices related to our natural environment. Because they are reproduced in such a complex mix of social practices, the lifespan of a representation usually extends beyond that of any single practice. Social representations of nature are a form of consensual knowledge that is taken for granted by most people. But whenever a new and unknown situation occurs, social groups may transform and adjust their representation to fit the new physical and social context.

This thesis focuses on two social practices in which social representations of nature are developed and used, namely nature management practices and experiential practices related to, for example, nature recreation. In reference to the first practice, my aim is to understand how social representations of nature are used in the framing of socio-political issues on the management of natural areas. Social representations function as a cultural resource to enhance the support for the framing of the issue.

Actors try to enhance the support for a specific frame by referring to widely adopted representations of nature. Relating social representations theory with framing theory may contribute to the development of both social representations theory and framing theory.

In more experiential practices, social representations of nature provide people with a cultural repertoire of definitions, beliefs, values, and value orientations. These elements can become part of the cognitive system of an individual and help to understand the world around him. It is hypothesized that through the reflection of social representations into individual images, social representations of nature inform individual experiences, perceptions of, and preferences for the natural environment.<sup>1</sup>

The conceptual model of this thesis is presented in figure 3.7.

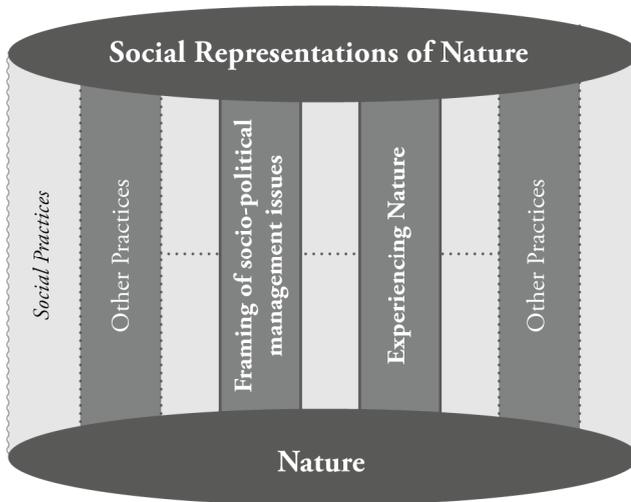


Figure 3.7: The conceptual model of the thesis

<sup>1</sup> Of course, social representations of nature are just one of the possible factors that may influence recreational practices and landscape preferences. For example, personal experiences and motivations are examples of other relevant inputs in recreational practices (Van den Berg, 1999).

Based on the theoretical elaborations in this chapter and the conceptual model outlined above, the research questions of this thesis can be rephrased as:

1. Which social representations of nature can be distinguished among the general public?
2. Through which processes are social representations of nature developed and adjusted?
3. To what extent do actors use social representations of nature in the framing of nature related socio-political issues?
4. To what extent do individual images of nature inform landscape preferences?



# Individual 4 images of nature

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## 4 Individual images of nature

### Abstract

Research on attitudes of the general public towards nature conservation often focuses on values, beliefs or value orientations as separate cognitions. This paper argues for a more holistic approach that integrates various attitudinal components into comprehensive frameworks or “images of nature”. Based on qualitative studies in The Netherlands, five ideal types of images of nature were derived: the wilderness image, the autonomy image, the inclusive image, the aesthetic image and the functional image, all with different implications for natural resource management. Some images focus on either individualistic or holistic interpretations of the intrinsic value of nature, while others focus more on beautiful landscapes or utilitarian functions. Integrating the pluralism of cognitions into images of nature may help managers to understand conflicts based on diverging opinions on local nature conservation practices. In participation processes images of nature may function as sensitizing concepts to facilitate discussions between experts and the general public.

### 4.1 Introduction

The protection of nature and biodiversity has become an important issue in public opinion. Many European and North American citizens see nature conservation as both a moral obligation as well as a prerequisite for “the good life”. Nevertheless, professionals in the field have experienced fierce local resistance to their efforts to implement specific conservation policies. To clarify this difference between support on a national level and lack of support on a local level, social scientists have put forward a broad array of explanations, using many different theoretical concepts. For example, research on the values of nature has used the ecocentric-anthropocentric dimension as an explanatory variable (e.g. Stern & Dietz, 1994). Research on nature-related knowledge has focused on popular beliefs about the fragility of nature (e.g. Thompson et al., 1990), and research on value orientations has focused on specific domains of nature conservation, like wildlife conservation (e.g. Fulton et al., 1996). These studies have been helpful to understand the variations in attitudes towards nature conservation. However, most of these studies focus only on one element of people’s understanding and valuation of nature. They ignore the holistic character of people’s cognitions about nature and possible links between e.g. values and beliefs. Integrating the pluralism of cognitions into comprehensive images of nature may help

managers to understand conflicts with the general public based on diverging views on nature and nature conservation.

Environmental philosophy and history may contribute to integrate the different values and beliefs into a more integral approach (e.g. Worster, 1985; Schama, 1995). Donald Worster, for example, argues that contemporary relationships between humans and nature are strongly based on an Arcadian image of nature (Worster, 1985). This Arcadian image incorporates several beliefs and values. It puts a particular focus on a combination of experiencing the beauty of nature, emphasizing the emotions evoked by nature and ascribing intrinsic values to nature. In addition, nature is seen as fragile. Human influence may upset the natural balance and impair the quality of nature. Finally, the Arcadian tradition is based on sympathy for animals and a sometimes religiously based reverence for life (Van Koppen, 2000). Historical development is described as development from anthropocentric or utilitarian images of nature to the more ecocentric Arcadian image of nature.

Unfortunately, the Arcadian image is often described as a monolithic and unambiguous image that can be used to differentiate between Arcadian and utilitarian ways of looking at nature, without the need to differentiate within image. However, several studies into Dutch nature policy have shown the need to differentiate not only between the utilitarian and Arcadian images, but also to differentiate between different views *within* the Arcadian image (Swart et al., 2001; Turnhout, 2004). These studies describe the different views on nature conservation that exist within the Arcadian image, focusing on e.g. wilderness or the “rural idyll”. Also recent studies on lay people’s views and attitudes have suggested that values and beliefs about nature conservation may be more complex than the frequently used one-dimensional distinction between ecocentric and anthropocentric values (e.g. De Groot & Van den Born, 2003; Buijs et al., 2006; Daugstad et al., 2006).

The aim of this paper is to explore the variety of images of nature existing with the general public. The next section describes the concept of images of nature as frameworks that consist of values, beliefs and value orientations. The results section describes two qualitative empirical studies that explored lay people's values, beliefs and value orientations. Based on the outcomes of these studies, a typology of lay people's images of nature is presented. After discussing the empirical findings, the paper ends with an outlook on the use of images of nature in natural resource management.

## 4.2 Values, beliefs and value orientations

Research into images of nature is becoming a research “tradition” in The Netherlands (Buijs, 2000; Van den Born et al., 2001; Keulartz et al., 2004; Van den Berg et al.,

2006). Nevertheless, different authors use slightly different definitions of the concept<sup>1</sup>. Van den Born et al. (2001) have used the term ‘visions of nature’ to study lay people’s philosophical images of human-nature relationships. Visions of nature are conceptualized at a very general level, without specifying their possible influence on actual attitudes on nature management. Van den Berg et al. (2006) uses a more limited conceptualization, focusing exclusively on people’s definitions of nature.

The most comprehensive conceptualization of images of nature have been put forward by Keulartz, Van der Windt and Swart (2004). They define images of nature as a three dimensional concept consisting of (1) cognitive *beliefs* of what nature is and how natural processes function, (2) normative *values* about how nature is judged and (3) expressive *aesthetic experiences* about the beauty of nature. The cognitive and normative dimensions are well conceptualized in their study and are also used in related work on e.g. mental models of nature (Bang et al., 2007). However, the expressive dimension is much less convincingly conceptualized, focusing on formal aesthetic theories. The authors conceptualize this dimension as a distinction between three different theoretical aesthetic perspectives, the objectivist, the subjectivist and the formalist. As research into landscape preferences has convincingly shown, such an expert-based distinction is not able to grasp lay people’s preferences (Daniel, 2001). As this expressive dimension is also closely related to more affective responses, excluding this expressive dimension may strengthen the consistency of the concept of images of nature. This would also distinguish the concept more clearly from more affective based concepts like landscape perceptions.

Based on the principle of the interrelatedness (or “transversality” (Welsch, 1996)) of these normative, cognitive and expressive dimensions, Keulartz et al. (2004) conclude that these dimensions are not randomly combined. Instead, only a limited number out of all possible combinations of values and beliefs appear to be used in Dutch nature policy. This limited number of combinations is interpreted as the dominant *image of nature* of Dutch ecological experts. Prior research suggests that lay people’s cognitions may differ significantly from expert cognitions about nature (Harrison et al., 1998). Therefore, although the concept of images of nature seems very promising as a tool to integrate lay people’s cognitions about nature, additional research is needed to identify the dominant images held by lay people.

From a psychological point of view, the cognitive dimension of images of nature can be described as nature-related beliefs, while the normative dimension can be described as nature-related values. The usefulness of both concepts has been extensively proven in empirical research (Bell, 2001). Values can be defined as

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<sup>1</sup> The Dutch term “natuurbeelden” has been translated differently into English: “images of nature” (Buijs 2000 and Van den Berg et al. 2006), “visions of nature” (Van den Born et al. 2001) and “concepts of nature” (Keulartz et al. 2004).

“guiding principles of what is moral, desirable or just” (Kempton et al., 1995, p. 12). They are supposed to be rather stable and transcend specific objects and situations. Since the 1970’s, much research has focused on people’s environmental values in order to understand conflicts over natural resources or individual behavior concerning nature and the environment (e.g. Stern & Dietz, 1994). Research has consistently shown important cultural and personal differences that can be interpreted in terms of a dimension ranging from ecocentric to anthropocentric values. Ecocentric values acknowledge the intrinsic value of nonhumans, independent of human interests. Typically, ecocentric values are associated with urban and highly educated people (Bell, 2001), with people holding post-materialist values (Manfredo et al., 2003) and with members of conservation organizations (Thompson & Barton, 1994).

Beliefs can be defined as “associations people establish between the object it refers to and attributes they ascribe to that object” (Eagly & Chaiken, 1998). One such attribute is the assumed relationship between nature and culture. Are nature and culture seen as opposites, or is nature closely related to and inseparable from culture? Several studies have shown that beliefs about the nature-culture dichotomy may differ within the general public and between the expert and the public (Buijs et al., 2006). Other relevant attributes are the assumed fragility of nature and the need for balance in nature (e.g. Fischer & Van der Wal, 2007).

Both values and beliefs are of a rather general nature. In the North American research tradition, the concept of value orientations is proposed to understand people’s more concrete views on nature conservation or wildlife management<sup>1</sup>. Value orientations are “an expression of basic values and are revealed through the pattern and direction of basic beliefs held by an individual” (Manfredo et al., 2003, p. 289). People who share the same general values, may still develop different value orientations towards nature management because of different beliefs about nature and natural processes (Manfredo et al., 1999). Although in the ‘cognitive hierarchy’, value orientations are closely linked to attitudes, they are not the same as attitudes. Where value orientations are general views on management of nature (e.g. hands-off management), attitudes are predispositions towards a concrete object or situation (e.g. opposing the cutting of the invasive species of wild cherry (*Prunus serotina*) in certain areas).

Figure 4.1 provides a graphical illustration of the concept of image of nature. Images of nature are defined as mental frameworks of values, beliefs and value orientations that direct and structure the understanding and perception of nature.

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<sup>1</sup> Sometimes also more general values, like “anthropocentric values” are called value orientations (e.g. Kaltenborn & Bjerke, 2002). Following the North American research tradition (e.g. Fulton et al., 1996), I choose to limit the concept of value orientations to cognitions explicitly directed at views on nature conservation.

Although images of nature are mental and thus individual concepts, culture and subculture may have a strong impact on individual images, through for example, the representations of nature in the media (Buijs et al., 2006). An important aspect of the concept of images of nature is that it acknowledges the cultural and interpersonal *pluralism* of values, beliefs and value orientations characteristic for modern societies. Moreover, it also acknowledges the transversality of these cognitions, thus condensing the broad array of individual values, beliefs and value orientations into a more limited set of comprehensive frameworks. In the next sections, the findings of two empirical studies are presented that used the concept of images of nature as cognitive frames to gain more insight into the heterogeneity of lay people's values, beliefs and value orientations.

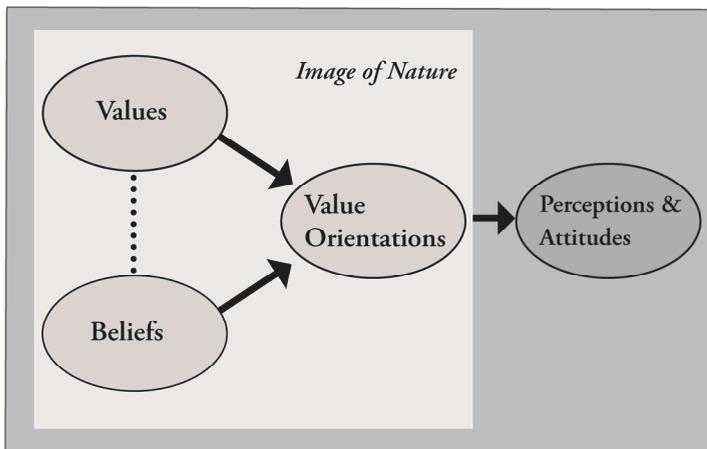


Figure 4.1. Conceptual structure of images of nature

### 4.3 Methods

Data for this study are drawn from two qualitative studies about people's views on nature. Semi-structured interviews that varied in length between 40 and 110 minutes were conducted with 59 individuals. All interviews were recorded on tape and transcribed verbatim. Respondents were chosen randomly from a commercial dataset of all addresses in two cities and two villages across The Netherlands (study 1) and in two villages bordering floodplains of the Rhine River (study 2). See Table 4.1 for an overview of the respondents.

Table 4.1: Respondents

	Categories	Respondents		
		Study 1	Study 2	Total
Age	18-35	12	4	16
	36-50	12	11	23
	51-85	6	14	20
Education	Lower	11	11	22
	Middle	6	10	16
	Higher	13	8	21
Total		30	29	59
Response rate		38%	33%	36%

The first study consisted of 30 interviews with the general public in The Netherlands. The interview guide consisted of several general questions about people's definitions and appreciation of nature, their nature related behavior and their views on nature management (e.g. "how do you think nature-areas should be managed"). To stimulate people to consider different kinds of nature in their considerations, 25 color pictures of nature and natural processes were shown during the interview. These pictures consisted of representations of a broad array of landscapes (agricultural fields, forests, and national parks), animals and humans. Based on the results of this first study, the interview guide was adjusted slightly.

Using this adjusted guide, the second study broadened the general focus of the interviews with topics related to nature restoration in floodplains near people's living environments. These concrete practices have been chosen because nature restoration in floodplains is one of the most important, but also lively debated examples of nature conservation in The Netherlands (Van der Molen & Buijse, 2005). This study was conducted near two floodplains along the Rhine River: the *Rosandepolder* (204 ha.) and the *Gamerensche waard* (128 ha.). Twenty-nine residents living in two villages near these floodplains were interviewed. In the *Gamerensche waard*, natural habitats such as shallow, flowing biotopes and macrophyte marshes have been restored, replacing former agricultural meadows in the floodplain. In the *Rosandepolder*, similar river-restoration measures are currently in the planning phase.

The analyses of the data was done in three steps, including substantive and theoretical coding (Strauss & Corbin, 1990) and the construction of "ideal types" of images of nature. The transcripts of the first study were coded substantively (only based on the data in the transcripts), after which the codes were translated into more theoretical codes by linking the substantive codes with theoretical concepts, such as

values, beliefs and value orientations. These theoretical codes were then also used to analyze the transcripts of the second study.

In the third step of the analyses the sociological concept of “ideal types” (Weber, 1904/1973) was used to describe the dominant images of nature, based on the coded transcripts of both studies. Ideal types are theoretical constructs based on empirical observations about the dominant characteristics of social phenomena. Ideal types try to grasp the “essence” of a social phenomenon. They are constructed through the synthesis of a great many diffuse characteristics, accentuating a limited number of these characteristics and ignoring less important characteristics. Using an overview of cognitions from all respondents, the method of pattern matching (Yin, 2003) was used to construct five ideal types of images of nature based on the most commonly found combinations of cognitions.

## 4.4 Results

The results section starts with a description of the different cognitions expressed in the interviews. As many of these cognitions are already described in earlier research, (see above) the first part of the results section will be relatively condensed and without references to specific quotes. Based on these cognitions, five ideal types of lay people’s images of nature are described in the second part of the results section. To illustrate the nuances of these images, descriptions are enriched with quotes from the interviews.

### *Values*

In the interview transcripts, the well known distinction between anthropocentric and non-anthropocentric values (Thompson & Barton, 1994) can be clearly recognized. Anthropocentric values concentrated not only on the economical functions of the area, but also on the aesthetic functions of beautiful natural landscapes (sometimes called weak-anthropocentric values (Stenmark, 2002)).

More interestingly, respondents referred to two different interpretations of non-anthropocentric values: individualistic interpretations focusing on individual animals or plants and holistic interpretations focusing on ecological wholes, such as ecosystems and species. References to the holistic non-anthropocentric values especially focused on the importance of the quality and integrity of the ecosystem. These people considered the lives of individual animals and plants subordinate to the value of natural processes and the protection of biodiversity. Other respondents expressed more individualistic interpretations of the non-anthropocentric values. These interpretations focused on the well being of individual animals and plants

instead of the integrity of an abstract system. These respondents found it hard to accept that for the improvement of ecosystems, individual trees are cut or living conditions for animals are threatened. An important issue for these people was the removal of invasive species, like the American prune. They strongly objected to the clearing of individual plants, just because they may harm the existing ecosystem. From environmental philosophy, Stenmark (2002) has described these different interpretations as biocentric (individual) and ecocentric (holistic) values.

### ***Beliefs***

Based on the interviews, three important dimensions of beliefs about nature could be discerned: nature and culture as related or opposites, fragility versus resilience of nature and balance versus change of nature.

First, people used different criteria to define nature. Some respondents defined nature as opposite of culture and stress the importance of the autonomy of nature. But other respondents reject such a strong nature-culture divide. They take a more interactional perspective on the relationship between nature and culture and humans are seen as part of nature.

Secondly, many respondents stressed the fragility of nature and made references to the negative influence of human impacts on nature quality. According to these people, this fragility of nature calls for careful handling of nature. But other respondents expressed their trust in nature's resilience. Nature is not seen as fragile, but as resilient and robust. For these people, the protection of nature is also important, but they believed nature can adapt to changing circumstances.

Thirdly, respondents differed in their beliefs about change and stability in nature. Many believed natural processes are directed at reaching a specific equilibrium. The quality and health of nature areas can then be determined by the stability of populations in an area. But all did not share this view. Some believed that nature is always changing and evolving. For them, there is no natural state or balanced state of nature, only change and evolution. The emergence of plants and species in unexpected places was sometimes used as an illustration of these processes.

### ***Value orientations***

The value orientations of the respondents differed both on the appropriate level of management (hands-off or hands-on), as well as on the specific goals of such management (nature, landscape, agriculture).

Some people favored a hands-off policy in nature management. For them, humans should not interfere with natural processes, and nature should be allowed to take its own course. The aim of nature management should not be to maximize biodiversity, but to maximize the autarky of nature.

Many respondents argued for limited management of nature. Nature conservation should not be directed at allowing natural processes to develop, but at reaching certain goals. Many thought that management of natural areas should focus mainly on nature-related goals, like enhancing biodiversity or protecting endangered species. They argued that continued nature management may enhance the ecological quality of nature. Others focused more on human related goals, like aesthetic quality. In particular, the protection of landscape diversity was often expressed as an important goal of nature management. They thought that if man doesn't intervene, nature will become very monotonous and dull. Although the autonomy of nature was still valued, they argued that nature and culture should be balanced and historical and cultural form of landscape use should be protected.

Finally, a group of respondents supported a strong hands-on view of management to counter the autonomous development of nature. Nature needs to be managed according to human needs, like agriculture or tourism interests.

#### **4.5 Ideal types of images of nature**

Thus far, this section has described individual values, beliefs and value orientations. The remainder of this paragraph will focus on how these cognitions are combined into five ideal types of images of nature. These images of nature include:

1. Wilderness image
2. Autonomy image
3. Inclusive image
4. Aesthetic image
5. Functional image.

Table 4.2 presents a summary of the five images of nature on basis of the relevant beliefs, values and value orientations.

Table 4.2: Ideal types of images of nature<sup>1</sup>

Ideal types of images of nature	Normative			Cognitive		
	Values	Value orientations		Boundaries	Beliefs	
		Level of management	Goal of management	Nature-Culture divide?	Fragile-Resilient	Balance-Change
Wilderness	Eco-centric	Hands off	-	N ↔ C	Fragile	Balance
Autonomy	Biocentric	Hands off	-	N ↔ C	Resilient	Change
Inclusive	Biocentric	Limited management	Nature	N + C	Fragile	Change
Aesthetic	Weak anthropocentric	Limited management	Landscape	N + C	Fragile	Balance
Functional	Anthropocentric	Hands on	Agriculture / forestry	N + C	Resilient	Change

### *The wilderness image*

The wilderness image is based on a strict nature-culture divide. Nature is defined as “not-culture” and only pristine nature is defined as real nature. Naturalness as the absence of human influence is considered an important attribute of nature.

*Nature is everything on earth, if you remove all things humans have done or built [NL-Ra]<sup>2</sup>*

The wilderness image is a rather symbolic image. For example, visibility of human artifacts is considered to diminish the quality of nature, even if such artifacts do not influence the ecological quality of the area.

*The sea, to me that is real nature. You don't see any buildings there at all. If I walk somewhere and I can't recognize human presence, then it is nature to me. [NL-Ro]*

<sup>1</sup> The lay out of this table has been slightly altered in order to make it comparable to similar tables in other chapters.

<sup>2</sup> NL-Ra refers to respondent Ra from the first study conducted across The Netherlands (=NL). FP-We refers to respondent We from the floodplains study (=FP)

A second important feature of the wilderness image is the focus on holistic, ecocentric values, like the protection of species and ecosystems. Respondents expressing this image considered the lives of individual animals and plants as being subordinate to the value of natural processes and the protection of biodiversity.

*If cutting some trees is needed to protect that system [with rare species], that is perfectly fine with me. We have millions of those trees. So we can afford to lose some of them for the sake of that specific system with such plants or animals. That is of greater value because it is so rare. [NL-Ro]*

This holistic interpretation of the intrinsic value of nature is related to beliefs about nature being in balance. Respondents often used the concept of ecosystems to illustrate this belief: healthy nature is characterized by stable ecosystems, and every animal and plant has a specific role in maintaining that balance. If an ecosystem is out of balance, nuisance species may dominate or species typical for that ecosystem may disappear. This belief in a nature looking for balance is also related to the belief that nature is fragile. External influences may have severe consequences for the quality of nature areas, including the protection of biodiversity.

### ***The autonomy image***

The autonomy image is also based on the contrast between nature and culture. The wilderness and autonomy of nature is important, but this autonomy is not determined by the visibility of humans or human artifacts (as in the wilderness image), but by the factual autonomy of the *natural processes*. Real nature is seen as self-organizing, self-sufficient and should be kept free of any human interference. Because the autonomy of nature is not determined by the visibility of human artifacts, nature is not restricted to large nature reserves. Nature can be experienced everywhere, in the city, in one's garden, or even in road verges.

*I consider a starling as real nature, because the influence of mankind is absent. Cows in a meadow are less nature than such a starling. Because a farmer takes care of the cows and milks them. [NL-St]*

The autonomy image incorporates individualistic, biocentric values. Contrary to the wilderness image, intrinsic value is not attributed to species or ecosystems but to every individual living being. Humans should not intervene in the lives of individual plants and animals, especially not to protect or restore some "abstract" ecosystem. These biocentric values are sometimes explicitly confronted with current restoration practices or the logging of trees for ecosystem management.

*I don't think humans should fell trees, just because they say it will improve other species. That tree is alive, just like us. Who are we to decide whether it is useful or not? I would probably protest if they start cutting the trees here in the forests. I even cannot bring myself to fell the tree in our garden. [FP-We]*

The focus on the autonomy of natural processes is related to a belief in an ever changing and developing nature. Natural processes are not directed at maintaining some kind of balance, but nature is seen as being in a state of flux. This belief is related to doubts on the possibilities for humans to fully understand and “guide” nature into specific directions. Guidance of nature to maintain a specific equilibrium is both not wanted (because of the importance of naturalness of nature), nor practicable (because of the unpredictability of natural developments). This sometimes caused respondents to express distrust in ecologists’ efforts to manage nature for e.g. biodiversity protection.

### ***The inclusive image***

As the name already implies, the inclusive image is firmly based in inclusive notions of nature and culture. Nature and culture are interrelated and mutually dependent and all living beings, including humans, are defined as nature.

*All living beings belong to nature. People too. Everything alive is nature. [NL-Ve]*

These inclusive notions about nature put much less emphasis on the autonomy of nature, which distinguishes this image from the autonomy image.

Contrary to the wilderness and autonomy image, value orientations within the inclusive image focus on limited management of nature, especially for nature related goals. Managers must sometimes intervene to improve living conditions of species and specific forms of management to improve the well being of plants or animals are supported.

*I think nature will benefit from it, if you sometimes remove dead wood, or some trees standing too close to each other. Otherwise trees and plants may suffocate. [E-Wa]*

An important feature of the inclusive image is its focus on biocentric values. The intrinsic value of nature is interpreted in an individualistic manner, directed at individual living beings. It is not about the autonomy of nature, but about admiration for the life force of nature. Reverence for life is often expressed as basic value and the right of humans to freely decide about the killing of animals or trees is contested.

### ***The aesthetic image***

The aesthetic image focuses on more hedonistic recreational or aesthetic values of nature. Nature management should focus on enhancing the possibilities for the

recreational use of nature areas and enhance both visual as well as non-visual qualities (e.g. experiences of silence or belonging). Although this image is not related to any *specific* aesthetic preferences, the beauty of landscapes is important and landscape diversity is often used as a criterion to judge the quality of natural environments. Contrary to the previous images, the protection of nature areas should be based on (weak) anthropocentric values: nature protection is important because people can use these areas for nature recreation practices. Therefore, all nature should be accessible for recreational use.

*What kind of nature do you have, if you cannot visit it? Nature for me is a nature area, and not an area closed for everybody. What use does it have, if you can't do anything with it and nobody can see it? What do you have to protect then? [NL-Vi]*

Preserving the balance between nature and culture is important in this image. That is why limited forms of management are supported: nature needs management to safeguard the aesthetic quality of nature, as well as the recreational accessibility.

*Leaving nature to develop freely, I don't think that is possible. Because then it is out of control. Only trees will grow and landscape diversity will be lost. Some form of steering would therefore be advisable, especially from a recreational point of view. [FP-Sa]*

Farmers are seen as co-producers of cultural landscapes and because the visibility of cultural and historical processes in the landscape improves aesthetic experiences, conservation of cultural heritage is strongly supported.

### ***The functional image***

The functional image is the only image with a strong hands-on value orientation. Nature should be managed intensively. Management is not only needed to improve utilitarian values; well-managed areas are also seen as aesthetically more attractive. Wild nature is often depicted as messy and wild plants are referred to as weeds.

*You shouldn't leave nature all to itself. You only get weeds and wilderness. That is worth nothing at all. You need to maintain it. Remove dead wood, sometimes prune a bit. Otherwise it only turns into a useless mess. [FP-Bo]*

While “production field” is in most other images of nature used as a contemptuous synonym for agricultural land, the functional image values nature primarily for its productive capacity. It is therefore the only clear anthropocentric image. Nature is believed to be resilient and changes in nature are part of natural developments.

*Nature may be fragile, but I think in the end it can restore itself. [...]. I think if given a change, nature is very tough and very powerful. [NL-St]*

## 4.6 Discussion

Values, beliefs and value orientations are at the core of psychological research into nature conservation and management. But instead of looking at each of these cognitions separately, this study focused on the relationship between these cognitions. In line with notions about the interrelatedness of values and beliefs (Welsch, 1996), results suggest that images of nature can be described as mental frameworks that combine different beliefs, values and value orientations.

This paper empirically describes for the first time lay people's images of nature, thus expanding the scope of more expert-based studies (Swart et al., 2001; Keulartz et al., 2004). Interviews with the general public in The Netherlands have revealed five different images of nature: the wilderness image with its symbolic focus on the absence of humans and human artifacts; the autonomy image with its focus on the autonomy of natural processes; the inclusive images with its broad definition of nature and rejecting the nature-culture divide; the aesthetic image with its focus on hedonistic and aesthetic values and the functional image with its focus on utilitarian values. The first four images are to a greater or lesser extent related to the Arcadian image of nature, dominant in modern Western culture (Worster, 1985). Only the functional image of nature explicitly challenges the Arcadian values and beliefs.

This study demonstrates the need to deepen our understanding of lay people's interpretation of the intrinsic value of nature. Within the wilderness image, the intrinsic value of nature is interpreted in a holistic manner and directed at species and ecosystems ("ecocentrism"). But within the autonomy and inclusive image this intrinsic value is interpreted in a more individualistic manner, in which intrinsic value is only assigned to individual living beings. According to such "biocentric" values, nature management should be evaluated on how it affects every individual living being instead of how it affects species or ecosystems. This distinction between holistic and individualistic interpretations of the intrinsic value of nature reflects long standing debates from environmental ethics (Leopold, 1949; Taylor, 1986; Callicott, 1989). The findings of the present study suggest that this refinement of the ecocentric-anthropocentric dimension is also important to understand lay people's values and attitudes. Social conflicts on for example the care of wild animals are probably related to such different interpretations of the intrinsic value of nature (Klaver et al., 2002).

From a methodological point of view, the qualitative methodology implies some limitations of this study. First of all, this study is focused on the Dutch context. The images of nature described in this paper cannot simply be applied to other countries and cultures. Different physical as well as cultural contexts may lead to different sets of images. For example, social representations of concepts like "wilderness" differ significantly between e.g. The Netherlands, the U.K. and the U.S. (e.g. Nash, 1973).

Although the content of the different images of nature may differ between cultures, the concept itself may be applicable in all cultures.

Secondly, the focus of this research has been on in-depth understanding of the content of lay people's images of nature. The qualitative nature of the study prevents any attempts to correlate the images of nature to specific attitudes. Our interviews suggest such relationships and extensive literature exists on the relationship between attitudes and the individual elements of images of nature (values, beliefs and value orientations) (Stern & Dietz, 1994; Fulton et al., 1996; Dunlap et al., 2000). Nevertheless, quantitative research is needed to substantiate the explanatory power of images of nature. A Dutch study on differences in images of nature between immigrants and native people revealed significant differences between both groups (Buijs et al. 2009). While native Dutch in majority endorsed the wilderness images, immigrants preferred the functional image. Furthermore, this study showed a significant relationship between images of nature and landscape preferences. People endorsing the wilderness image expressed a strong preference for unmanaged landscapes (like dunes or marshes) while people endorsing the functional image expressed a relative preference for managed and agricultural landscapes.

What is the value of the concept of images of nature for managers? As images of nature are based on people's values, beliefs and value orientations, they can be useful to understand and maybe prevent conflicts on local nature resource management. Studies have shown that lay people's negative attitudes towards specific management techniques are related to images of nature that differ from the images of local resource managers (Buijs, 2009b). But images of nature may not only differ between advocates and opponents. Even *within* the group of opponents itself, more variation in the origin of such negative attitudes may exist than often is recognized. A recent study on attitudes on biodiversity management showed two different sources for local protests against nature restoration practices. From the perspective of the inclusive image, the restoration of a drift sand area in a forest was contested because such measures focus on ecosystems instead of on individual animals, trees or plants. From the perspective of the aesthetic image, these restoration practices were contested because they threaten landscape diversity (Buijs et al. 2008). Managers need to acknowledge these different sources of opposition in relation to different images of nature. Different causes call for different solutions. For example, negative attitudes based on a fear of diminishing landscape diversity may be overcome by preserving small patches of trees within the restored drift sand. However, such mitigating measures will do no good if negative attitudes towards the "unnecessary" logging of healthy trees are based on the biocentric rejection from the autonomy or the inclusive image (Buijs et al., 2008).

In participatory processes, the concept of images of nature can be used to understand the heterogeneity of values, beliefs and value orientations. Moreover, images of nature integrate this heterogeneity into a limited number of comprehensive

frameworks related to resource management. This integration may aid planners, managers and policy makers in understanding the diversity of lay people's opinions, without getting lost in the seemingly endless diversity of values, beliefs and value orientations. In taking stakeholder participation seriously, such an understanding is needed to identify appropriate goals, as well as appropriate means for nature management.

The integration of nature-related values, beliefs and value orientations into comprehensive images of nature can also be helpful to structure discussions in participatory processes (Keulartz et al., 2004). The five images of nature described in this paper then function as sensitizing concepts to stimulate stakeholders to acknowledge the different values and beliefs lay people may adhere to. Although used only on a very preliminary basis, images of nature have been successfully used in recent workshops aimed at sensitizing regional policymakers on different values and types of knowledge of farmers and citizen groups.

Finally, images of nature may provide a common *vocabulary* to discuss differences in beliefs, values and value orientations between stakeholders. Mutual understanding in participatory processes with different groups, with different backgrounds and knowledge, is only possible when a common vocabulary is established. Therefore, such participation processes call for a common language. Establishing a common language is anything but straight forward, as experts and non-experts often differ substantially in the concepts and knowledge they refer to (Hull et al., 2001). However, without such a framework for discussions, participatory processes run the risk of getting stuck in a mere exchange of interests, instead of an exchange of values (Keulartz et al., 2004). It would be a lost opportunity to find creative solutions for competing interests, since an exchange of values may lead to more innovative solutions to conflicts in natural resource management.

# **Cultural differences and the relationship with landscape preferences**

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## 5 Cultural differences and the relationship with landscape preferences

### Abstract

Despite the growing cultural diversity in many European countries, nature recreation is still a very “white” activity. Immigrants hardly ever visit non-urban green areas. Prior research has suggested that different perceptions of nature and landscape may be related to this limited use. Based on 618 questionnaires, this article investigates to what extent immigrants from Islamic countries and the native Dutch have different images of nature and landscape preferences. Using the concept of images of nature, cultural differences in meanings attached to nature are explored. Three images of nature are described: the wilderness image, the functional image, and the inclusive image. The wilderness image focuses on ecocentric values and the independence of nature; the functional image focuses on anthropocentric values and intensive management and the inclusive image focuses on ecocentric values and an intimate relationship between humans and nature. Native Dutch people are strong supporters of the wilderness image, while immigrants generally support the functional image. In addition, landscape preferences differ significantly between immigrants and native Dutch people. In general, immigrants show lower preferences for non-urban landscapes. Immigrants show especially low preferences for wild and unmanaged landscapes, like marshes and dunes. Multivariate analyses of variance showed that images of nature and immigrant-status are the most powerful predictors of differences in landscape preferences. Age, gender and education have only a small additional predictive power. The practical and theoretical consequences of these findings are discussed.

### 5.1 Introduction

Visitors to European rural areas or National Parks will not encounter many immigrants. Clearly, the profile of those participating in outdoor recreation does not reflect the growing number of immigrants from non-western countries (Jókövi, 2001). Many European countries have experienced significant immigration in recent years. At the present time, 13% of the German population, 10% of the French and Dutch population and 8% of the UK population consist of immigrants (Dumont & Lemâitre, 2005). The majority of non-Western immigrants in the Netherlands originate from two Islamic countries on the Mediterranean, Turkey and Morocco (CBS, 2007).

Nature conservation organizations have also recognized a lack of immigrants in their memberships. They acknowledge the need to understand the demographic and cultural factors that influence landscape preferences in order to attract minority groups to their protected areas in the future (Natuurmonumenten, 2007). In this context, the Dutch Ministry of Agriculture, Nature and Food Quality has expressed concern about the limited support that the expanding immigrant community shows for protecting natural landscapes. They wish to gain deeper insight into the type of Dutch landscapes that immigrants prefer.

From research conducted in the United States, which focused on racial and ethnic differences in landscape perception and outdoor recreation, we know that immigrants and African Americans are less likely than U.S.-born whites to visit nature reserves (Johnson et al., 2004) and that such differences may be related to different landscape preferences and different meanings attached to nature (Johnson et al., 1997). Research also shows that Anglo-Americans generally favor a more natural and less managed environment, whereas groups such as Afro-Americans and Latin-Americans favor a more developed and managed environment (Zube & Pitt, 1981; Kaplan & Talbot, 1988; Virden & Walker, 1999). Stodolska and Livengood (2006) showed that the leisure behavior of Muslim immigrants in the U.S. manifests itself through strong family ties and social bonding. They suggested that a well-managed environment fits these leisure purposes better than a wilderness environment.

In a European context, the number of studies into ethnic variations in environmental preferences and behavior is rather limited. Rishbeth has studied the design of urban green spaces to accommodate diverging demands from immigrant groups (Rishbeth, 2001). Jókövi (2001) has demonstrated a very low participation of immigrants in nature-related activities in the Netherlands. However, with respect to immigrants in general and specifically immigrants from Islamic cultures, to the best of our knowledge no quantitative studies have thus far focused on cultural differences in the meanings of nature or on differences in landscape preferences. The central aim of this research is therefore to gain insight into the variation of meanings of nature in relation to landscape preferences between native Dutch people and immigrants from Turkey and Morocco.

## 5.2 Images of nature

To understand cross-cultural variation in landscape preferences we need to understand the different constructions of nature people use to give meaning to nature (Rishbeth, 2001). In this paper, we will use the concept of images of nature to understand these different constructions of nature. Research into images of nature is

an emerging line of studies in Dutch and German research into comprehensive sets of meanings related to nature and landscape (Van den Berg, 1999; Buijs, 2000; Van den Born et al., 2001; De Groot & Van den Born, 2003; Keulartz et al., 2004; Krömker, 2004; Rink, 2005; Buijs, 2009a). Images of nature can be defined as “enclosing frameworks that direct and structure the perception and appreciation of nature” (Keulartz et al., 2004). Images of nature are the cognitive reflections of prior experiences with and discourses about nature. Previous studies have conceptualized images of nature as consisting of two dimensions: people’s beliefs regarding nature and their normative views about the relationship between humans and nature (Buijs, 2009a).

Beliefs can be defined as “associations people establish between the object it refers to and attributes they ascribe to that object” (Eagly & Chaiken, 1998). An important attribute is the assumed relationship between nature and culture. Are nature and culture seen as opposites, or is nature closely related to and inseparable from culture? Several studies have shown that beliefs about the nature-culture dichotomy may differ within the general public and between experts and the public (Buijs et al., 2006).

The normative elements of images of nature relate to “ethical-normative cognitions concerning the relationship between humans and nature” (Van den Berg, 1999). They include not only general values of nature, but also the manifestation of such values in more specific value orientations. Values can be defined as “guiding principles of what is moral, desirable or just” (Kempston et al., 1995, p. 12). Value orientations are clusters of interrelated values and basic beliefs, related to concrete management practices (Bengston et al., 2004, p. 377). Examples of the normative elements of images of nature are anthropocentric and ecocentric views on the relationship between human and nature (Dunlap et al., 2000) and visions on human interventions in nature versus the autonomy of nature (Van den Berg, 1999). Beliefs as well as values and value orientations are supposed to be rather stable and transcend specific objects and situations. As such, images of nature are also conceptualized as being relatively stable and transcending specific situations.

Empirical studies of the images held by individuals have revealed five different images of nature which are related to different values and beliefs: the wilderness image, the autonomy image, the inclusive image, the aesthetic image and the functional image, all with different implications for natural resource management (Buijs, 2009a). For example, the wilderness-image is based on ecocentric values of nature and a very narrow definition of the concept of nature, related to the autonomous development of nature. The functional image, on the other hand, focuses on anthropocentric values in which nature should be intensively managed, for aesthetic as well as utilitarian purposes. Within this image, nature and culture are not seen as opposites; humans are supposed to master nature.

Studies have shown that individual differences in images of nature are related to the cultural and social positions of individuals in certain groups. Images of nature have been found to relate to cultural background (Bang et al., 2007), agricultural background and other functional ties to nature (Van den Berg, 1999), education (Buijs, 2000; Van den Born et al., 2001) and religion (Schouten, 2005).

### 5.3 Landscape preferences

Between different cultural groups, not only the more general images of nature can differ, but also the concrete preferences for non-urban landscapes (e.g. Kaplan & Talbot, 1988). An important difference between images of nature and landscape preferences is that images of nature are cognitions about nature (e.g. general values and beliefs). Landscape preferences are usually conceived of as predominantly based on precognitive, affective responses to the physical environment, related to feelings of liking or disliking (Korpela et al., 2002). They are often defined as the aesthetic or evaluative response elicited by visual encounters with real or simulated natural settings (Van den Berg, 1999). Therefore, as Van den Berg concluded, (1999, p. 6), “Cognitive and affective responses to landscapes should be studied in their own right, and more insight is needed into possible relationships between these two kinds of responses.”

Landscape preferences have been extensively studied in the past. Based on evolutionary theories, many studies have focused on interpersonal agreement on landscape preferences (like preferences for trees and water) (Ulrich, 1983). However, other studies have shown that preferences for wild or more managed landscapes may differ significantly between social groups (Kaplan & Kaplan, 1989). Most researchers have explained these preferences in socio-economic terms, showing for example that preferences for managed landscapes are positively correlated with age and negatively correlated with education (Ulrich, 1983; Tyrväinen et al., 2003).

In line with the suggestion by Van den Berg (1999) that images of nature and landscape preferences should be conceptually distinguished, several studies have focused on the influence of specific images of nature on landscape preferences (Van den Berg, 1999; Buijs, 2000; Kaltenborn & Bjerke, 2002; Ribe, 2002; De Groot & Van den Born, 2003). The results of these studies are somewhat inconclusive. While Van den Berg et al. (Van den Berg, 1999) have found only weak relations between images of nature and landscape preferences, other studies suggest that preferences for managed landscapes are related to aspects such as functional images of nature (Buijs, 2000; De Groot & Van den Born, 2003). Moreover, managed landscapes are more often preferred by people with anthropocentric values, whereas people with a more

ecocentric value show a preference for wild landscapes (Dearden, 1984; Kaltenborn & Bjerke, 2002).

## 5.4 Cultural differences in images of nature

In this article we focus on two major population groups within the Netherlands: recent immigrants from Turkey and Morocco and native Dutch people. Native Dutch people are of European origin, officially defined as people who themselves as well as both their parents were born in the Netherlands (Phalet & Haker, 2004). In this paper, we distinguish between first- and second-generation immigrants. First-generation immigrants were born in Turkey or Morocco, while second-generation immigrants were born in the Netherlands, but have parents who were born in Turkey or Morocco. The Turkish and Moroccan immigrant-groups have both preserved many elements of their culture of origin. Although the children of first-generation immigrants were born in the Netherlands, this second generation was typically raised in rather traditional Turkish or Moroccan culture, sharing historical memories, a common culture and a strong link with their homeland (Phalet & Haker, 2004).

Differences in images of nature and landscape preferences could be related to cultural differences between both groups. One such cultural difference could involve religious background (e.g. Schultz et al., 2000; Schouten, 2005). For almost all Turkish and Moroccan immigrants in the Netherlands, Islam is an essential part of their identity. For first-generation immigrants, Islam symbolizes their primary ethnic bonds with the country of origin, while for the second generation Islam is an important factor to distinguish themselves from native Dutch culture (Phalet and Haker, 2004).

Images of nature in Arab cultures are based strongly on the Koran (Makhzoumi, 2002). As the Koran and the Bible have common roots, Islamic images of nature share certain characteristics with Christian images in western countries. Both share a monotheistic worldview. Although God's influence is visible in nature, nature itself is not divine and animals or trees are not to be worshipped. In addition, the concept of stewardship is important in both cultures. Both Islamic and Christian stewardship focus on man's responsibility to respect and protect nature (Ammar, 1995). A functional view on nature has been dominant in both cultures, focusing on the use of nature to answer human needs within the boundaries of a general attitude of responsibility and respect for nature.

Since the Renaissance, and especially since the rise of Romanticism, images of nature in Christian cultures have shifted from this functional image of nature towards what has been called an Arcadian image of nature. The Arcadian image puts a particular focus on a combination of experiencing the beauty of natural landscapes,

the moral obligations to protect nature and the importance of emotions evoked by nature. At the same time, nature became represented as fragile, and human influence was seen as a threat to the “balance of nature” (Van Koppen, 2000). Furthermore, also influenced by European landscape paintings, landscape as *scenery* and the symbolic meanings and emotions evoked by such scenery became an important aspect of the dominant image of nature in West European culture (Andrews, 1999).

Such a change towards Arcadian images of nature and a focus on scenic landscapes has not occurred in Islamic cultures (Schouten, 2005). Other differences in modern images of nature between Islamic cultures and most Christian Western cultures also exist. For example, in Islamic cultures, nature is seen as the manifestation of almighty God (Allah). Through nature, mankind can learn the word of God and can discern God’s truth, beauty and compassion (Makhzoumi, 2002). Because nature is a reflection of God’s word, nature is represented as well organized and well managed, without disorder or discord (Maasen, 2004). Consequently, humans are supposed to respect nature and take good care of it. To bring wild lands into culture is seen as celebrating God’s work (Makhzoumi, 2002). Furthermore, the modern Western focus on scenic landscapes is not very dominant in Islamic cultures. Landscape paintings are not very popular in Islamic cultures, and Arab languages do not even have a word for the concept of *landscape* (Makhzoumi, 2002).

Not only religious differences, but also the rural background of immigrants may influence images of nature (Van den Berg, 1999). The vast majority of immigrants from Turkey and Morocco originate from small villages in agricultural and highly remote areas. The differences in nature practices between the remote and rural places of origin and highly urbanized Dutch society could hardly be bigger. Prior research has shown important differences in values associated with nature between people from rural or urban backgrounds (Manfredo et al., 2003). In agrarian-based cultures, nature meanings are based on the direct material interaction with the natural environment. In urbanized cultures, the symbolic meanings of nature have become more important. These symbolic meanings are often based on idealized images of nature related to hedonistic values and the construction of nature as the antithesis of human culture (Van Koppen, 2000). As a result, nature is often associated with autonomy, spontaneity and naturalness (Ulrich, 1983). This stands in sharp contrast with the view in many rural cultures that nature is something that needs to be controlled and is sometimes even regarded as threatening (O’Rourke, 2000).

The present research focuses on understanding differences in images of nature between native Dutch people and immigrants from Islamic countries and understanding some of the possible consequences of such different meanings. Our empirical research question is therefore twofold: *i) what are the similarities and differences in landscape preferences between immigrants and native Dutch people, and (ii) to what extent can these preferences be explained by different images of nature?*

## 5.5 Methods

### *Data collection and respondents*

This article presents data from a quantitative survey comparing native Dutch people with immigrants from Turkey and Morocco. Because the vast majority of Turkish and Moroccan immigrants live in the large and intermediate-sized cities in the Netherlands (CBS, 2007), the study was conducted in 2006 in three such cities: Arnhem, Haarlem and Utrecht. These cities cover the full spectrum of Dutch cities and were selected because of the diversity of nearby natural landscapes as well sufficient numbers of inhabitants originating from Turkey and Morocco. As such, the data in this paper can be considered as representative for these two groups.

To enhance the comparability of immigrants and the native Dutch in terms of socio-economic background as well as living environment, we focused on one district in each city. The immigrant residents were interviewed by employees of a market research consultancy specializing in immigrants. If necessary, respondents were allowed to answer the questions in their native languages. We choose to sample native Dutch in the same districts as the immigrants, in order to improve comparability between both groups. As a result, the native Dutch sample is not representative of the full native Dutch population. Native Dutch respondents were also approached at their home addresses by hired interviewers and asked to fill in a questionnaire. In total, 300 immigrants and 318 native Dutch people were interviewed, with a minimum of 100 from each group in each town. The overall response rate was 47%. The response rate of the immigrants was rather high; 72% of the Turkish and Moroccan people who were approached agreed to cooperate with the research. The fact that they could answer the questions in their mother tongue and communicate with interviewers who were familiar with their culture definitely contributed to the high response rate. In contrast, the response of the native Dutch people was 22%. Such response rates are not uncommon in the Netherlands and in this study were primarily related to a high degree of absence and high proportion of people living in apartment buildings.

Table 5.1 shows several basic characteristics of the research population. For example, 63% of the interviewed immigrants originated from Turkey, and 37% from Morocco. These relative numbers are comparable to the size of these subpopulations in Dutch society older than 18 years of age (CBS, 2007). Despite our efforts to minimize differences between both samples, several socio-demographic characteristics differed. For example, the average age and gender differed significantly between the two groups, and the native Dutch reported a higher level of education than the immigrants. However, since the native Dutch are generally better educated than immigrants anyway, this difference merely reflects general socio-demographic differences between the two groups. To account for these socio-demographic

differences between both samples, we will analyze the socio-demographic influences on images of nature and landscape preferences and will include socio-demographic variables in all our multivariate analyses.

*Table 5.1. Socio-demographic characteristics of the research population.*

		<b>Immigrants</b>	<b>Native Dutch</b>	<b>Total</b>
Total		300	318	618
Age (mean)		37.5	50.8	44.2
Gender	Male	53%	39%	46%
	Female	47%	61%	54%
Education	No/Very low	37%	10%	23%
	Low	26%	32%	28%
	Medium	26%	36%	32%
	High	11%	23%	17%

### ***Main concepts in the questionnaire***

The questionnaire focused especially on the images of nature and on landscape preferences. As stated in the introduction, images of nature have been defined as consisting both of beliefs and of values and value orientations. Beliefs about nature mainly concern people's conceptualizations and definitions of nature. This was studied using prototypicality ratings of various nature-related aspects (e.g. floodings, old farms and domestic animals), a method which was used in previous research (e.g. Van den Berg, 1999). We used a 5-point scale rating from "no nature at all" to "real nature". Values and value orientations were studied using statements on the human-nature relationship and on the appropriate type of management of nature (Buijs, 2000; Dunlap et al., 2000). We used a five-point Likert scale from "totally disagree" to "totally agree". Preferences for Dutch landscapes were measured with the use of full-color pictures (18 x 6 cm) of ten typical, non-urban Dutch landscape types. The selection of these landscapes was based on expert-judgment (4 experts). The landscapes varied from *dunes* and *mixed forest* to present-day agricultural landscapes, such as *peat pasture*, and *small-scale bocage* (Figure 5.1). Respondents were asked to assess each picture on a 10-point scale, ranging from 1 (not attractive at all) to 10 (extremely attractive).



*Figure 5.1. Pictures used to represent Dutch landscapes. From left to right and top to bottom: riverine landscape (after ecological restoration), heath land, polder, dunes, small-scale bocage, waste peat pasture (after ecological restoration), mixed forest, large scale agriculture, shallow marsh, peat pasture. (originals in color)*

### **Data analysis**

We used both descriptive and multivariate analysis techniques. As a first step, factor analysis (varimax rotation) was applied to determine the underlying dimensions of images of nature (eigenvalue > 1). In a second step, these factors were used in a stepwise cluster analysis, consisting of a hierarchical cluster analysis and a k-means cluster analysis (Ward's method). Cluster analysis groups respondents who are relatively comparable on the selected variables into two or more clusters. In our case, the factors resulting from the factor analysis were entered into the cluster analysis,

resulting in groups of individuals who expressed relatively comparable scores on these factors. These clusters then constituted the images of nature of these groups. The cluster centers of the three cluster solution varied significantly for each factor. We should point out that the values of cluster centers are relative due to the fact that each factor value is relative. In cases where most people strongly disagreed with the items of a particular factor, a positive cluster centre does not mean that people belonging to this cluster strongly agreed on the items of the factor.

To analyze differences between groups, we used Chi-squared, Eta<sup>2</sup> and Cramer's V. Eta<sup>2</sup> and Cramer's V are measures of association that not only test for significant differences, but also indicate the proportion of total variability explained by the independent variable (Hair et al., 1998). Eta<sup>2</sup>= .01 is considered a small effect size, Eta<sup>2</sup> = .06 a medium effect size, and Eta<sup>2</sup>= .14 is considered a large effect size (Stevens, 1999).

Regression analysis was conducted to analyze the relationship between landscape preferences and images of nature and socio-demographic variables. Because images of nature is a nominal variable, we constructed dummy variables. Education was recoded as high or low education.

## 5.6 Results

### 5.6.1 Images of nature

Images of nature were analyzed in two steps. As a first step, factor analyses was conducted on the items that measure images of nature. This factor analyses was conducted separately for the two dimensions constituting images of nature: values (including value orientations) and beliefs. Subsequently, the factors behind both dimensions were entered in a cluster analysis to construct images of nature.

#### ***Beliefs and values***

Factor analyses of the beliefs about nature, which focused on the assumed prototypicality of nature-related instances, revealed three factors (Table 5.2). The first factor, consisting of old farms, a farmer on his tractor and urban parks, can be described as the useful or productive aspects of nature. The second factor, consisting of floodings, marshes and weeds between the pavements, can be described as independent nature. The third factor, consisting of humans and domestic animals, can be described as domesticated nature. Similar factors have been found in other research (Van den Berg, 1999; Van den Born et al., 2001). Two items ("big cornfields" and "houseplants") were removed from the analysis because of ambiguous factor loadings. On average, independent nature was considered the most prototypical for nature,

whereas the reverse was true for domesticated nature. For example, marshes (independent nature) were seen as typical for nature by 82% of the respondents, while 27% considered domestic animals as typical nature. Although the latter percentage might be considered low, one in four native Dutch people still valued domesticated nature.

Table 5.2. Factor analyses of prototypicality ratings: means (standard deviations in parentheses) and factor loadings (> 0.4).

	Mean score (1=no nature at all, 5=typical nature)	Productive nature	Independent nature	Domesticated nature
Old farms	3.2 (1.17)	.851		
Farmer on tractor	2.8 (1.26)	.821		
Urban parks	3.3 (0.99)	.694		
Floodings	3.6 (1.31)		.833	
Marshes	4.0 (1.17)		.822	
Weeds between paving stones	2.7 (1.30)		.552	
Humans	3.1 (1.35)			.842
Domestic animals	2.7 (1.27)			.838
<i>Explained variance (total 67.1%)</i>		<i>31.7%</i>	<i>21.1%</i>	<i>14.3%</i>
<i>KMO measure of sampling adequacy = .640; Bartlett's Test of Sphericity chi square = 1081.2***</i>				

\*\*\* p < .001

Factor analyses on the items belonging to values also revealed three factorial dimensions (Table 5.3). The first dimension, labeled “the perceived need for autonomy of nature” is related to the view of many respondents that nature should develop as independently of humans as possible. For example, the statement “the longer a natural area is left untouched, the greater its value” was supported by 63% of the respondents. This finding is in line with national nature policy that propagates an autonomous development of nature and is supported by most native Dutch citizens (Elands & Koppen, 2007). The second factor was related to anthropocentric values. Support for the items related to this factor was much lower. Only 11% agreed with the statement that “humans may use nature as they see fit” and 26% agreed that “not every single plant needs to be protected”. This implies that nature deserves respect from human beings. Consequently, anthropocentric values should not determine the state of nature. The third factor refers to the appropriate intensity of management of nature areas (“management intensity”). The items constituting this factor showed the

highest variation. While 38% felt that “dead trees in the forests need to be cleared away”, another 25% disagreed with this policy.

*Table 5.3. Factor analyses of values and value orientations: means (standard deviations in parentheses) and factor loadings.*

	Mean score (1=disagree, 5=agree)	Perceived need for autonomy of nature	Anthropo- centric values	Management intensity
To protect nature, some areas need to be closed to visitors	3.7 (1.04)	.736		
The longer a natural area is left untouched, the greater its value	3.8 (0.98)	.656		
Wind turbines and electricity pylons make nature less valuable	3.6 (1.11)	.625		
Nature is less fragile than some people think	3.0 (1.05)		.826	
Not every single rare plant needs to be protected	2.8 (1.12)		.630	
Humans may use nature as they see fit	2.0 (1.07)		.495	
Road verges need to be decently mowed	3.6 (1.15)			.802
Dead trees in the forests need to be cleared away	3.1 (1.26)			.711
<i>Explained variance (total 54.7%)</i>		<i>23.9%</i>	<i>18.2%</i>	<i>12.6%</i>
<i>KMO measure of sampling adequacy = .642; Bartlett's Test of Sphericity chi square = 379.3***</i>				

Only factor loading > 0.4 are displayed

\*\*\*  $p < .001$

### ***Images of nature***

As a second step, we conducted a cluster analyses on the six factors described above. Based on the outcomes of hierarchical cluster analyses, we chose a three-cluster solution. Final cluster centers on each factor are shown in Table 5.4. These cluster centers represent the mean on the six factors of all respondents grouped in each cluster.

Based on the literature on images of nature (Keulartz et al., 2004; Buijs, 2009a), the first cluster can be described as a *wilderness* image of nature: respondents adhering to

the wilderness image predominantly rejected anthropocentric values and supported more ecocentric values of nature. They wanted to minimize the intensity of management of nature. Supporters of the wilderness image generally saw independent nature as the most prototypical types of nature, while productive and domesticated nature were seen as less typical than average. Unexpectedly, their score on the “perceived need for autonomy of nature” was slightly negative. To understand this result, it should be understood that this value is a relative value with respect to the factor mean. Looking at the absolute values, the vast majority still favored the autonomy of nature. For example, only 14% disagreed with the statement that “The longer a natural area is left untouched, the greater its value.” Only people adhering to the inclusive image of nature found the autonomy of nature more important.

The second cluster can be described as a *functional* image of nature. Anthropocentric values were strongly supported and instead of the autonomous development of nature, intensive management of nature in order to maintain was supported. Contrary to the wilderness image, independent nature was not seen as typical of nature at all.

The third cluster can be described as an *inclusive* image of nature. The most striking feature of the third cluster is its broad definition of nature. Productive nature, domesticated nature and independent nature are seen as “true” nature. Anthropocentric values were rejected in favour of more ecocentric values and the need for autonomy of nature was strongly supported.

### ***Differences in images of nature***

Immigrants and native Dutch differed significantly in their adherence to the three images of nature (Table 5.5). The majority of the native Dutch supported the wilderness images (51%), while only 25% of the immigrants supported this image. The opposite is true with respect to the functional image: 44% of the immigrants had the highest affinity with the functional image, compared to only 16% of the native Dutch. We can give meaning to these percentages by analyzing the differences of the underlying dimensions of images of nature. Immigrants generally expressed a more anthropocentric view on the human-nature relationship ( $\text{Eta}^2=.101^{***}$ ), they preferred a high level of management of nature ( $\text{Eta}^2=.063^{***}$ ) and they gave less value to the need for the autonomy of nature ( $\text{Eta}^2=.031^{***}$ ).

Table 5.4. Description of images of nature, based on cluster analyses, displaying the final cluster center of the hierarchical cluster analyses.

	Images of nature		
	Wilderness image (N=207)	Functional image (N=170)	Inclusive image (N=180)
<i>Prototypicality</i>			
Factor 1: Productive nature	-0.491	-0.238	0.826
Factor 2: Independent nature	0.539	-1.019	0.362
Factor 3: Domesticated nature	-0.473	0.318	0.264
<i>Values and value orientations</i>			
Factor 1: Perceived need for autonomy	-0.233	-0.399	0.611
Factor 2: Anthropocentric values	-0.225	0.464	-0.218
Factor 3: Management intensity	-0.671	0.414	0.299
<i>Total group</i>	37%	30%	32%

A comparison between first-generation and second-generation immigrants shows interesting differences between the groups. Second-generation immigrants seem to take a middle position between first-generation immigrants and native Dutch in their support for the various images of nature. They showed more support for the wilderness image than first-generation immigrants, but less than the native Dutch. This “second-generation effect” is also true for the functional image, but then in the opposite direction. These results could be a first sign of acculturation of second-generation immigrants, where they begin incorporating values from native Dutch culture into their own culture.

The images of nature were also related to other socio-demographic characteristics. The majority of the highly educated people supported the wilderness image. There was no clear relationship between age and the preferred image of nature. Because education and immigration-status were strongly related, we also conducted separate analyses of the relationship between images of nature and immigration status for both people with a high and low level of. Again, and consistently with the analysis of the full sample, in both education groups the native Dutch more often supported the wilderness image, while immigrants more often supported the functional image (low education: Cramer’s  $V=0.29^{***}$ ; high education: Cramer’s  $V=0.33^{***}$ ).

Table 5.5. Socio-demographic characteristics and images of nature.

	Images of nature		
	Wilderness image (N=207)	Functional image (N=170)	Inclusive image (N=180)
<i>Origin</i> (Cramer's V=0.33 <sup>***</sup> )			
Native Dutch people	51%	15%	34%
Immigrants	25%	44%	31%
<i>Within immigrants</i> (Cramer's V=0.23 <sup>***</sup> )			
First-generation immigrant	18%	47%	35%
Second-generation immigrant	40%	38%	22%
<i>Education</i> (Cramer's V=0.27 <sup>***</sup> )			
No/very low	13%	37%	50%
Low	27%	33%	40%
Medium	49%	27%	24%
High	63%	24%	13%
<i>Age</i> (Cramer's V=0.13 <sup>**</sup> )			
18-39	41%	35%	24%
40-64	32%	29%	39%
65-99	39%	19%	42%
<i>Gender</i> (Cramer's V=0.22 <sup>***</sup> )			
Male	37%	40%	23%
Female	38%	22%	40%

\*\* p < .01

\*\*\* p < .001

## 5.6.2 Landscape preferences

Extensive differences exist between immigrants and native Dutch people in the appreciation of different landscape types (Figure 5.2). In all cases, except in the case of the very open polder landscape, immigrants appreciated the Dutch landscapes less than native Dutch people did. Differences were up to 1.8 points on the 10-point scale, which are rather exceptional inter-group differences with this kind of research (Van den Berg, 1999). Typical Dutch landscapes, such as shallow marshes, heath land and dunes were much more appreciated by native Dutch people than by immigrants. Immigrants showed a relative preference for forests and for landscapes in which the agricultural interaction between humans and nature is more visible, such as small-scale

bocage landscapes, large-scale agricultural landscapes, and peat pasture landscapes. In contrast, native Dutch people showed rather low preferences on average for most man-made landscapes.

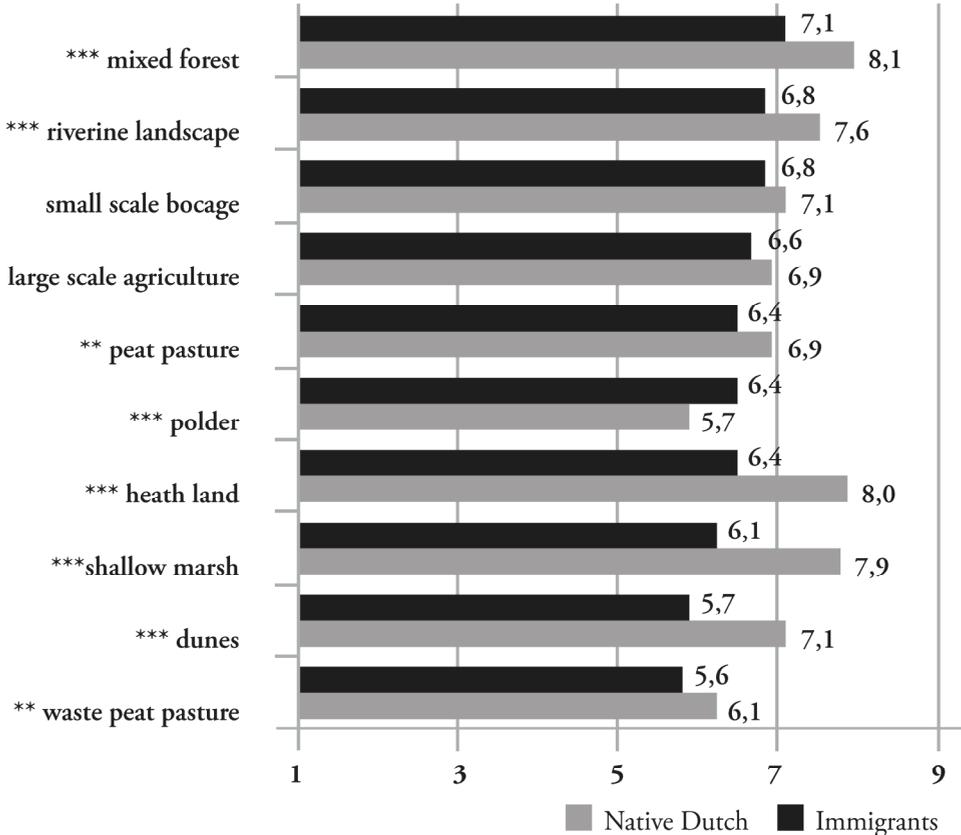


Figure 5.2. Preference for Dutch landscapes by native and ethnic groups (scale 1-10), presented in order of preference by the ethnic minority group (Anova; \*\*  $p < .01$ ; \*\*\*  $p < .001$ )

To aid further analyses of these differences and to aid the analyses of the relationship between landscape preferences and images of nature in the next paragraph, we conducted a factor analysis. This revealed two factors related to the naturalness of the landscapes: a factor consisting of natural landscape types (e.g. shallow marsh and waste peat pasture) and a factor consisting of managed landscape types (e.g. polders and agricultural landscapes; see Table 5.6). The more natural landscape types are landscapes with a relatively low degree of human influence. The result of this factor analysis closely resembles the distinction between wild and managed landscapes that is often found (e.g. Van den Berg & Koole, 2006).

Table 5.6. Factor loadings of landscape preferences.

	Natural landscape types	Managed landscape types
Shallow marsh	.877	
Dunes	.739	
Mixed forest	.680	
Heath land	.665	
Riverine	.628	
Waste peat pasture	.602	.469
Polder		.881
Peat pasture		.748
Large scale bocage landscape		.720
Small-scale agriculture	.421	.626
Explained variance (total 62.1%)	48.8%	13.3%
<i>KMO measure of sampling adequacy = .847; Bartlett's Test of Sphericity chi square = 2771.7***</i>		

Only factor loading > 0.4 are displayed

\*\*\*  $p < .001$

Native Dutch people clearly showed a preference for natural landscapes, leading to a 0.9 lower average for managed landscapes on the 10-point scale (Table 5.7). This contrasted with the immigrants, who showed a slight, although not significant, preference for managed landscapes. Differences between immigrants and native Dutch people become especially apparent with respect to natural landscape types: the native Dutch had a much higher appreciation for natural landscapes than immigrants. Both groups did not differ significantly in their preferences for managed landscapes. Because much prior research on differences in landscape perceptions has focused on the preferences between managed versus wild or natural landscapes, we also looked at the differences in preferences between natural landscapes and managed landscapes. For this additional analysis, we computed individual difference scores between preference for natural landscapes and preferences for managed landscapes (cf. Van den Berg & Koole, 2006). In agreement with most of the literature on this topic (Purcell & Lamb, 1998), native Dutch people rated natural landscapes significantly higher than managed landscapes. Most immigrants, however, rated managed landscapes higher than natural landscapes (column four in Table 5.7).

Table 5.7. Landscape preferences of native Dutch and immigrants.

	Natural landscapes (A)	Managed landscapes (B)	Relative preference for natural landscapes compared to managed landscapes (A-B)
<i>Origin</i>			
Native Dutch people	7.5	6.6	.86
Immigrants	6.3	6.5	-.27
<i>Eta</i> <sup>2</sup>	.191***	n.s.	.211***
<i>Within immigrants</i>			
First-generation immigrant	6.3	6.7	-.41
Second-generation immigrant	6.1	6.1	-.07
<i>Eta</i> <sup>2</sup>	n.s.	.050***	.033**

\*\* p &lt; .01

\*\*\* p &lt; .001

Within the immigrant group, we also found differences: first-generation immigrants appreciated managed landscapes much more than second-generation immigrants. We would expect the second-generation immigrants to prefer natural landscapes more than the first-generation immigrants, but this is not the case. Whereas the differences in images of nature support our ideas about acculturation of second-generation immigrants, the differences in landscape preferences do not support this supposition. A possible explanation of this difference is that immigrants may not perceive natural Dutch landscapes as being very natural compared to the natural landscapes in their ancestral countries. Furthermore, familiarity with Dutch landscapes may influence the landscape preferences of all immigrant groups, while their images of nature are more general constructs and thus are not influenced by familiarity with the landscapes.

Landscape preferences are thusly related to immigration status and other socio-demographic variables. In the next section, we will try to answer the second research question: are landscape preferences related to people's images of nature?

### 5.6.3 Relationship between images of nature and landscape preferences

#### *Images of nature and landscape preferences*

Table 5.8 shows the relationship between people's landscape preferences and their images of nature. People with a wilderness image clearly showed higher preference for

natural landscapes than for the managed landscapes (7.11 compared to 6.40). People supporting the functional or inclusive image did not show significant preference for natural or managed landscapes.

Table 5.8. Images of nature related to preferences for both natural landscapes (A) and managed landscapes (B) and relative preference for natural landscapes compared to managed landscapes (A-B).

Image of nature	Natural landscapes (A)	Managed landscapes (B)	Relative preference for natural landscapes compared to managed landscapes (A-B)
Wilderness image	7.11 <sup>a</sup>	6.40 <sup>a</sup>	0.72 <sup>a</sup>
Functional image	6.30 <sup>b</sup>	6.28 <sup>a</sup>	0.03 <sup>b</sup>
Inclusive image	7.19 <sup>a</sup>	7.16 <sup>b</sup>	0.02 <sup>b</sup>
TOTAL	6.89	6.60	0.29
<i>Eta</i> <sup>2</sup>	0.074 <sup>***</sup>	0.083 <sup>***</sup>	0.080 <sup>***</sup>

\*\*\*  $p < .001$ . Means with unequal letters differ per column at  $p < .01$ .

### ***The influence of socio-demographic factors***

To understand the relative importance of images of nature as predictive variable compared to socio-demographic variables, we conducted three regression analyses with different dependent variables: preference for natural landscapes, preference for managed landscape and the difference in preference between natural and managed landscapes. As independent variables we used images of nature, immigrant-status, age, education and gender. Images of nature were measured at a nominal level. Therefore, two dummy variables were constructed: “functional image” and “inclusive image”. Creating dummy variables always requires that one level of the original variable is dropped. Because the wilderness-image adherents were the largest group, we choose to drop this value (cf. Hair et al., 1998). As a result, the scores on the two dummy variables are relative scores *compared to the wilderness image*.

Table 5.9 shows first of all that the regression model for natural landscape preferences is the most powerful. This indicates that our input variables strongly explain the variation within natural landscape preferences. Origin is the strongest predictor of preferences for natural landscapes ( $\beta = -.53$ ). Additionally, functional images of nature have additional significant predictive power. People with a functional image as well as women and lower educated people showed lower preferences for natural landscapes. Age was not significant.

Table 5.9. Results from regression analyses ( $\beta$ ) using images of nature and socio-demographic background variables to predict preferences for natural landscapes, managed landscapes and computed difference scores of natural landscapes compared to managed landscapes (relative preference).

Predictor	Natural landscapes (A)	Managed landscapes (B)	Relative preference for natural landscapes compared to managed landscapes (A-B)
Origin (0= native Dutch, 1=immigrants)	<b>-.53***</b>	<b>.22***</b>	<b>-.54***</b>
Images of nature			
Functional image	<b>-.11**</b>	.04	<b>-.11**</b>
Inclusive image (dummies, 0=wilderness image)	.04	<b>.28***</b>	<b>-.17***</b>
Education	<b>.08*</b>	.03	.04
Age	.05	<b>.16***</b>	-.08
Gender (1= male)	<b>-.13***</b>	.06	<b>-.14***</b>
<i>Adj. R</i> <sup>2</sup>	.36	.12	.33

Bold values are significant.

\*  $p < .05$

\*\*  $p < .01$

\*\*\*  $p < .001$

Images of nature were the strongest predictor of preferences for managed landscapes. People adhering to the inclusive image (compared to wilderness image) showed higher preferences for managed landscapes. Immigrants preferred managed landscapes more than native Dutch people, as did older people. These results are partly in line with previous studies. For example, Van den Berg (2006) also found a positive relationship between image of nature and preference for natural landscapes. However, some results are more difficult to interpret. For example, the positive relationship between the inclusive image and the managed landscapes has not been found in previous studies. This may be due to people adhering to an inclusive image having a higher preference for all landscapes (see Table 5.8). This result may be explained by a closer examination of the relative preference for natural landscapes compared to managed landscapes. Here, we see that images of nature and, especially, origin have the highest explanatory power (Table 5.9). Immigrants showed a clear relative preference for managed landscapes. People with a functional or an inclusive image of nature showed lower relative preferences for natural landscapes and consequently (as a result of using dummy variables), people with a wilderness image showed higher relative preferences for natural landscapes. Gender was the only significant socio-demographic variable.

## 5.7 Discussion

The results of our study into differences between immigrants and native Dutch people calls into question the often-assumed general preference for natural landscapes compared to managed landscapes (Purcell & Lamb, 1998; Gobster et al., 2007). Although such a preference for naturalness may hold for urban, highly educated, native groups, the results of this study show that immigrants may hold different preferences. Their preference for agricultural, managed landscapes was even slightly higher than for natural or wilderness landscapes.

The presumed general preference for naturalness has been the starting point of recent discussions on 'ecological aesthetics' of natural landscapes, suggesting that ecological quality and perceived aesthetic beauty are strongly correlated (Gobster et al., 2007). The results of the current study suggest that this relationship may be group-dependent, as the immigrant-group in our study did not share the view that naturalness equates with beauty.

This study used the concept of images of nature to try to understand differences in landscape preferences. The concept of images of nature has been used before in qualitative as well as quantitative research. The present study, however, is the first that explicitly builds on the results of qualitative research and tries to statistically underpin the different images of nature found in qualitative research. Statistical analyses generated three distinct images of nature also found in qualitative studies: the wilderness image, the functional image and the inclusive image (Keulartz et al., 2004; Buijs, 2009a). The wilderness image focuses on ecocentric values and the independence of nature; the functional image focuses on anthropocentric values and intensive management of nature; and the inclusive image focuses on ecocentric values and a broad definition of nature.

Immigrants and native Dutch people differed significantly in their images of nature. While the majority of native Dutch people endorsed the wilderness image, only 25% of the immigrants endorsed this image. Additionally, only 15% of the native Dutch endorsed the functional image, compared to 44% of the immigrants. In particular, immigrants expressed a more anthropocentric view of the human-nature relationship. Furthermore, they preferred a high level of management of nature, and the autonomy of nature was less important for them. Finally, they used a broader definition of nature and conceptualized nature and culture less often as oppositional concepts. In line with earlier research (Van den Berg, 1999; De Groot & Van den Born, 2003) socio-demographic variables such as age, gender and education also proved to be related to images of nature.

Our study shows that images of nature are related to landscape preferences. Images of nature have significant power to predict preferences for non-urban

landscapes. People with a functional or an inclusive image of nature showed lower relative preferences for natural landscapes, while people with a wilderness image showed a higher relative preference for natural landscapes. As immigrant status did have additional power to explain differences in landscape preferences, other factors may also be related to preferences, like familiarity or recreational needs and motives. Socio-demographic characteristics had only limited additional power to explain landscape preferences. Although prior studies often focused on age, education and gender as explanations of different landscape perceptions (e.g. Tyrväinen et al., 2003), the results of our study suggest that images of nature may provide a stronger and more substantially meaningful predictor of landscape preferences.

This study measured images of nature at the individual level. However, as described in the introduction, individual images of nature are related to broader aspects of culture (see also Nash, 1973; Schouten, 2005; Bang et al., 2007). One way of acknowledging these cultural aspects of images of nature is to consider them as “social representations” (Moscovici, 1961/1976). Social representations are socially elaborated systems of values, ideas and practices that define an object for a social group. They are used by individuals to understand and communicate about the environment. The concept of social representations was introduced in the spatial sciences by Halfacree (1993) and has been widely used in spatial studies, especially in relation to rurality. Recently, Castro (2006) has suggested using social representation theory in psychological research to understand diverging values related to nature and the environment in order to move research beyond explanations based solely on socio-demographic variables. Yet, to date, only a few authors have used social representations theory to describe the relationship between culturally defined conceptualizations and individual meanings of nature (e.g. Van Koppen, 1997; Buijs et al., 2008a). The concept of social representations may be useful in further studies relating culture and religion to images of nature and landscape preferences.

The differences in images of nature between immigrants and the native Dutch that were found in this study are largely consistent with more general cultural differences in the images of nature in Islamic and Christian cultures. For example, many immigrants supported the functional image of nature, with its focus on utilitarian values and intensive management. This may be related to the divine task in Islam for humans to manage nature and to bring wild areas into culture. In addition, lower overall preferences for most landscapes amongst immigrants may be related to the lack of a tradition within Islamic cultures of viewing landscapes as scenery.

From a cross-cultural point of view, the differences in images of nature between first and second-generation immigrants are also very interesting. Second-generation immigrants, born in the Netherlands but raised in an immigrant culture by parents originating from Turkey or Morocco, seem to be in a phase of acculturation. Their adherence to different images of nature seems to be a combination of the functional

images that dominate among first-generation immigrants and the wilderness images of many native Dutch. These results suggest that the acculturation of the second-generation immigrants to the dominant Dutch culture includes a change in their images of nature.

One possible limitation of the present research is its Dutch context. However, many of the results we found are consistent with US-based studies. Since many European countries are undergoing the same processes of globalization and immigration, it is expected that the main conclusions will also be relevant for other European countries. The response rate of the native Dutch group may be a more important limitation. Although the sampling strategy focused on finding a native Dutch group comparable to the immigrants in terms of socio-economic variables, the comparability of two samples may still be an issue. For example, the average income and education level of the native Dutch group in the sample was higher than those of the immigrants. However, these differences are inevitable, as they reflect general differences in income and education between these groups. To control for these effects, we included socio-economic variables in all multivariate analyses. Furthermore, several analyses on the full sample were repeated separately for people with high and low levels of education, and the results were comparable with those from the overall sample.

The finding that immigrants have different images of nature and prefer different types of landscapes has important consequences for nature policy. The current practice of nature restoration in many European countries and the primacy given to promoting 'wild' and unmanaged landscapes does not seem to concur with the preferences of immigrant-groups for more managed landscapes. This is a serious obstacle to the efforts of nature conservation organizations to develop a more inclusive nature policy (see also Rishbeth, 2001; Natuurmonumenten, 2007). If nature policy and landscape architecture aim to reflect the variety of values and beliefs so typical of late-modern societies, it is imperative to reflect on cultural differences in landscape preferences. This study showed that the concept of images of nature may provide a stronger and more substantially meaningful predictor of landscape preferences than traditional predictors like age, education, and gender.



# **Social representations of biodiversity**

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## 6 Social representations of biodiversity

### Abstract

Lack of public support for and protest against biodiversity management measures have often been explained by the apparently insufficient knowledge of biodiversity held by the general public. In stark contrast to these assumptions of public ignorance, our results of focus group discussions in the Netherlands, Germany and Scotland show that members of the general public use very rich and complex social representations of biodiversity to argue for particular approaches to biodiversity management. Within these representations, we identified important components such as (i) the functions and benefits associated with biodiversity, (ii) attributes and values connected to nature and (iii) views on the relationships between humans and nature. Notions within these components varied across individuals and groups and were closely linked to their views on biodiversity management in general and specific management measures in particular. This study illustrates how a better understanding of these representations and their links to public attitudes is crucial to ensure effective communication on biodiversity and improve public support for biodiversity management.

### 6.1 Introduction

Losses of biodiversity and attempts to halt this decline are among the most central, if not the most crucial, issues in both conservation science and politics. Generally, the loss of biodiversity on the global level is recognized as a serious problem by 94% of the European population (Eurobarometer, 2007). However, the its implementation of biodiversity conservation measures is often challenged by fierce debates and resistance to specific management approaches (Stoll-Kleemann 2001; Miller 2005; Lindström *et al.* 2006; Marshall *et al.* 2007). This lack of support on the local level has been linked to the seemingly insufficient knowledge of the general public about biodiversity, suggesting that the public might not have enough insight to appreciate the benefits of biodiversity and its conservation (Elder *et al.* 2002; DEFRA 2002; Hunter and Brehm 2003).

Many studies examining this phenomenon describe individuals' understanding of biodiversity as an isolated concept, neglecting those meanings of biodiversity which are not connected to scientific definitions, but to the respondents' daily practices: to their own experiences, knowledge and emotions. Consequently, a common conclusion from existing studies is that the public needs to be better educated in order to adopt

the goals and ideals advocated by the dominant conservation discourses (Elder *et al.* 2002). However, the persistent refusal of the public to support nature conservation based solely on more information on biodiversity and its loss is a clear indication of the flaws inherent to this ‘information deficit’ model of public understanding and action (Owens 2000).

To contribute to a better understanding of lack of public support for biodiversity management, this paper addresses public understandings of biodiversity from the perspective of the subjectivity of knowledge (Wynne, 1996), rather than from the restricted perspective on ‘biodiversity’ as an isolated, fixed concept. We use the notion of ‘social representations’ to denote and describe the meanings that individuals and groups assign to biodiversity. Social representations are socially elaborated systems of values, ideas and practices that define an object for a social group (Moscovici 2000). These representations are used by individuals in their social contexts to understand and communicate about their environment. Representations can have both descriptive and normative, i.e., evaluative, aspects. For example, individuals may attribute a certain characteristic to biodiversity, while at the same time evaluating this characteristic as ‘good’ or ‘bad’, ‘important’ or ‘unimportant’. Representations help to “familiarize the unfamiliar” (Moscovici 2000), and thus enable the general public to make sense of originally scientific terms such as biodiversity, and to align such terms with their own experience and knowledge related to the concept.

Representations are developed drawing on and incorporating existing representations of related objects. Through communication, people try to understand new scientific concepts such as ‘biodiversity’, relating these concepts to already existing representations of more familiar objects. As such, the understanding of a new object becomes anchored (Moscovici 2000). Through the process of anchoring, people attribute certain characteristics to biodiversity, partly based on representations of more familiar concepts like nature, landscape and cultural diversity. Thus, an analysis of public understandings of the concepts of biodiversity has to take social representations of such related concepts into account. Overall, prior experience, knowledge and the social context shape social representations. Therefore, different groups such as farmers, foresters, or urban and rural people may hold different representations of biodiversity.

In turn, this has important implications for public and stakeholder responses to biodiversity management policies and measures. As social representations of objects tend to inform attitudes towards concrete behaviour related to the object, analyses of social representations used by different groups of the general public may shed light on the reasons for public protest against and lack of support for management approaches (Buijs *et al.* 2006; Fischer and Van der Wal 2007).

In this paper, we empirically develop a conceptual framework to analyse the array of different notions that social groups such as residents in protected areas, farmers,

recreationalists and foresters develop and use to understand biodiversity issues, and illustrate how these notions interact and inform their views and attitudes towards biodiversity management. We investigate how, although they might not be familiar with the scientific terminology, different groups within the general public use representations of biodiversity and nature to make sense of biodiversity management. We also investigate to what extent specific attitudes on nature management are embedded in people's particular worldviews and representations. Unravelling the representations of biodiversity and nature held by different stakeholder groups, including the general public, will hence contribute to a better understanding of their attitudes towards biodiversity management, which in turn is essential to designing successful communications and management approaches. For this purpose, we report findings from focus group discussions that involved a wide range of members of the general public in Germany, Scotland and the Netherlands.

In a first step, we examine the participants' associations with the term 'biodiversity'. We then go on to present a conceptual framework developed from the data that we use to deconstruct and analyse the representations of biodiversity expressed in the group discussions. The paper concludes with a discussion on the implications of our findings for biodiversity policies and management.

## 6.2 Methods

### *Study sites*

Our study was conducted around three large protected areas in the Netherlands, Germany and Scotland (Figure 6.1). The protected areas were chosen as a common reference for our study in order to capture general understandings and attitudes towards biodiversity as well as concrete attitudes towards specific measures of protection and management related to these designated areas.

In the Netherlands, research centred on the Drents Friese Wold National Park, situated in the north eastern part of the country and typical for this part of the Netherlands. The National Park consists of 6,100 ha of forests, moorland and drift sand owned by different nature conservation groups. Hardly anyone lives within the area. The villages surrounding the National Park draw heavily on tourism for maintaining their economic and social viability.

The Scottish study centred on the Cairngorms National Park, established in 2003, which covers 380,000 ha and is Britain's newest national park. It is home to about 17,000 inhabitants, and tourism-related businesses account for 80% of the local economy. The Cairngorms massif constitutes one of the largest and most unspoilt

upland areas in Britain (Warren 2002) and is considered the most important mountain area in Britain for nature conservation.

In Germany, the area selected for this study was the South-East Rügen Biosphere Reserve, which covers 23,500 ha (9,500 ha terrestrial and 14,500 ha marine area) and includes the island of Vilm as well as wetlands of international importance and a European bird sanctuary. The reserve is home to approximately 11,500 people, who, similar to the population around the two other sites, rely mainly on tourism.



Figure 6.1. Locations of the three study areas in the Netherlands, Scotland and Germany

### **Methods used**

We chose to adopt a qualitative approach, as we aimed to gain an in-depth understanding of representations of biodiversity and implications for management rather than testing a hypothesis, or producing generic results. Focus group discussions are a form of qualitative research used in marketing and the social sciences, and increasingly applied to environmental topics (Hull *et al.* 2001; Gobster 2001), in which data are obtained from a relatively small group of respondents selected from a broader population. The technique requires small groups, led by a facilitator who encourages participants to pursue their own priorities on their own terms and in their own words.

This enables the group to address those issues that are perceived as particularly relevant by the participants, rather than issues chosen by the researcher. In addition, the technique encourages group discussions and interactions between participants (Bryman 2004).

A total of 19 focus group discussions were carried out between May and October 2005: five in the Netherlands, eight in Scotland and six in Germany (Table 6.1). Sessions generally lasted between 60 and 120 minutes. A general guide was used as a basis for discussions (Table 6.2). The initial questions were on participants' personal experiences with the protected area. This enabled participants to relax and start identifying topical issues. Participants were then asked about their associations with the term 'biodiversity', before broadening the discussions out to perceptions and concepts of biodiversity and its management.

*Table 6.2. Discussion guide used in the focus group discussions*

1. What are your personal experiences in the nature reserve? *Probing, for example:*  
Do you have a favourite plant or animal in the region? How often have you been in this area? What is your general impression of the area? What were your expectations before you came?
2. Have you heard about the National Park/Biosphere Reserve?
3. Have you ever come across the term "biodiversity", or biological diversity?  
*Where not, brief explanation is given.*
4. What does 'biological diversity' mean to you? What first comes to your mind?
5. How important is biological diversity to human beings? How important is biological diversity for your everyday life?
7. How do you think biological diversity could best be maintained or managed?
8. Would you like to add anything?

### ***Sampling***

Our aim was to gain as wide a range of views on biodiversity as possible. Sampling was designed to cover a cross-section of the public from a wide range of backgrounds, including urban and rural dwellers, laypeople, citizen-stakeholders and professionals in relevant fields such as forestry, conservation and farming (Table 6.1). For each focus group discussion, we approached a specific type of stakeholder, trying to minimise within-group variation, while maximising variation between groups. Wherever possible, existing groups such as mountaineering and birdwatching associations were contacted. Each group was thus relatively homogeneous with regard to certain aspects of their relation to their natural environment, while most groups were heterogeneous with regard to gender, age and, in many cases, educational background. Following on from this general basis, 95 participants aged 19 to 76 took part in our focus groups. As

the study aimed to explore the diversity of representations within the general public rather than to provide a demographically representative comparison of sub-groups with statistical means, this sample size can be considered more than sufficient (Bryman 2004).

*Table 6.1. Composition of focus groups. Group codes used in the results section refer to the respective focus group discussions.*

<b>Country</b> Group and place	Group code	Number of participants	Age range
<b>The Netherlands</b>			
Local residents (including tourism business)	NL-1	6	43-64
Local residents and tourists	NL-2	9	41-74
Local residents (including farmers)	NL-3	6	32-69
Local residents and tourists	NL-4	5	43-71
Forestry PhD students	NL-5	4	24-31
$\Sigma$		30	
<b>Scotland</b>			
Tourists	UK-1	2	46-53
Tourists	UK-2	2	44-47
Mountaineers on a training course	UK-3	6	32-45
Mountaineers resident in adjacent areas	UK-4	4	37-68
Local residents	UK-5	10	21-76
Foresters, resident in adjacent areas	UK-6	4	35-55
Birdwatchers, resident in adjacent areas	UK-7	6	49-70
Agricultural college students, resident in adjacent areas	UK-8	9	19-20
$\Sigma$		43	
<b>Germany</b>			
Conservationists	G-1	5	34-69
Tourism-related businesses	G-2	5	44-65
Local residents	G-3	4	56-66
Tourists	G-4	4	34-59
Foresters	G-5	2	45-64
Farmers	G-6	2	37-44
$\Sigma$		22	
<i>Total</i>	<i>19</i>	<i>95</i>	<i>19-74</i>

### ***Data analysis***

All focus group discussions were recorded on tape and verbatim transcribed. The data were analysed in two steps: 1) substantive coding and 2) theoretical coding (Strauss & Corbin, 1990). Transcriptions were first coded substantively, based on the empirical

data using broad categories discussed and validated by all authors in an iterative process. As a second step, these substantive codes were (where possible) related to theoretical concepts such as “human-nature relationship” and “aesthetic functions”. Final main coding categories included the understanding of biodiversity, concepts of nature, views on the role of humans in nature, values related to nature and biodiversity, attitudes towards biodiversity management measures and the perception of changes and threats to biodiversity. These main categories were used as structuring principle in the conceptual framework.

## 6.3 Results

This section starts with a brief presentation of the participants’ associations with the term ‘biodiversity’. We then introduce a conceptual framework derived from our empirical work that organises the notions we found to form part of the different groups’ representations of biodiversity. Finally, we illustrate by means of two examples how the respondents combine these notions, linking them to their daily practices, and how these notions inform their views on biodiversity management in general, as well as their attitudes towards biodiversity management measures in particular.

### 6.3.1 Understandings of the term ‘biodiversity’

During the focus group discussions, we asked the participants explicitly about their understanding and definition of the term ‘biodiversity’. While many participants had heard of the term, the definitions offered differed considerably. Some participants anchored their definition in their understanding of the ecological concept, defining biodiversity as the variety of species, sometimes including habitats and, more rarely, genes:

*It is also number and quality of habitat as well as number of species [UK-4, group code see Table 6.1].*

Such definitions were often given by interested laypeople such as mountaineers (UK-3, UK-4), but also by some professionals in the field of natural resource management (G-1, G-5).

Many participants, in particular local residents and tourists with no particular background in natural resource management (UK-1, UK-2, NL-1, NL-3, NL-4, G-2, G-3, G-4), used broader definitions, often including diversity of landscapes and

cultural diversity in, for example, land use or even cuisine. For some of them, ‘biodiversity’ was a term subsuming all things living:

*Biodiversity is everything that we can find here in terms of living nature or living matter. Humans are certainly part of that [G-5].*

Among these groups, some individuals gave detailed descriptions of diversity based on their personal experience in the nearby protected area. They often anchored their understanding of the concept in their own experiences:

*I do see diversity returning. I remember we put sundew in a pot on the windowsill when I was young. Sundew is very exciting; you could see the flies being eaten. I haven't seen any sundew since then. I have told my husband that story many times, and now I can finally show him what sundew looks like, right here in the park! [NL-1]*

Some respondents, especially among those who had (semi) professional dealings with biodiversity policies (UK-5, UK-7, NL-5, G-1), expressed a critical stance on the actual use of the term of biodiversity. According to these participants, the term had become fuzzy, unclear and a political instrument, which in itself could deter certain groups:

*It has become a buzzword [...]. There are other approaches and they are just being blanketed out because it is not the 'in' word [UK-5].*

This brief overview of the immediate reactions to the word ‘biodiversity’ in the different focus groups shows that, while for many of the respondents the term was unknown, others directly related meaning to this term. Associations ranged from standard textbook to broader definitions of diversity, often embedded in personal experiences with nature, but also included critical comments on the strategic use of the term.

The focus group discussions also revealed that the participants held a much greater diversity and wealth of associations than a discussion of the term ‘biodiversity’ alone could have revealed. Those participants who were not familiar with the term still expressed complex understanding of biodiversity, embedded in wider networks of interrelated concepts. Thus, to understand public perceptions of biodiversity, we need to look at broader representations of nature. The next sections focus on these representations.

### **6.3.2 Deconstructing social representations of biodiversity: a conceptual framework**

We found that representations of biodiversity were built out of and embedded in a wide range of concepts recurring across the focus groups, which included both

descriptive and normative elements. Several of these were related to more familiar objects like nature and landscape, which were used to anchor the representation of biodiversity. However, these concepts were combined in different ways by the different groups, thus forming distinct representations of biodiversity, each with their own implications for attitudes towards biodiversity management. In this section, we present an overview of the different components that we identified to be distinct, albeit related, elements of the different social representations of biodiversity (Figure 6.2). Subsequently, we show these notions were linked to form group-specific representations of biodiversity (Figure 6.3 and Figure 6.4).

While the analysis of the transcripts was informed by the literature on public understanding of nature and biodiversity, the conceptual framework outlined here represents the notions and concepts expressed in at least one of the focus group discussions. In particular, we identified three major components of biodiversity representations: (i) views on the functions and benefits that biodiversity might provide, (ii) attributes associated with nature and (iii) views on the relationship between humankind and nature (Figure 6.2).

### ***Benefits and functions of biodiversity***

An important component of biodiversity representations consisted of the benefits and functions the participants attributed to biodiversity, mostly from an anthropocentric perspective. We identified the following aspects in the discussions:

- i) Biodiversity as the basis of human life, expressing the feeling that biodiversity was essential to human health and human survival;
- ii) Biodiversity as providing and ensuring balance in nature, often emphasising the importance of every animal and plant in the food chain, and the role of species in ensuring an equilibrium in natural systems;
- iii) Aesthetic functions of biodiversity, appreciating habitat diversity within landscapes and species diversity within habitats as visually appealing, for example through the different colours of plant leaves and flowers, or meandering little streams in the landscape;
- iv) Biodiversity as creating a sense of place, describing how specific patterns of species and habitats which were seen as typical for certain places added to the authenticity of the area, inspired pride in local nature and provided orientation in the wider landscape;
- v) Economic values of biodiversity, emphasising that many economic activities such as fisheries, forestry, farming and tourism depend directly or indirectly on biodiversity and its stabilising functions.

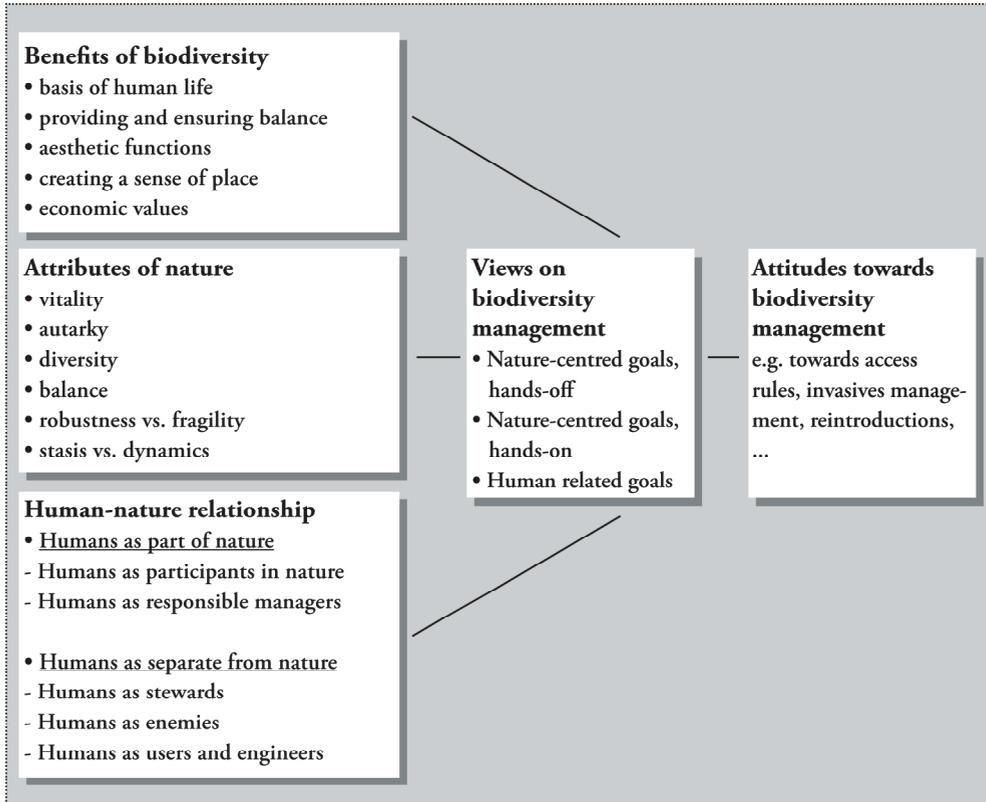


Figure 6.2. Conceptual framework: components of social representations of biodiversity identified in one or more of the 19 focus-group discussions.

### ***Characteristics attributed to nature***

A second important component of biodiversity representations was the characteristics respondents associated with nature. As will be shown below, these concepts of nature seemed to provide the participants with a frame against which they considered the functions and benefits of biodiversity described above. Again, these characteristics of nature were often associated with positive values and showed the individuals' ideals with regard to nature. As attributes used to either characterise or define nature, we identified in particular:

- i) Vitality, describing nature as being constituted by living beings;
- ii) Autarky, i.e., self-sufficiency, with connotations of nature being independent, untouched by humans, unpredictable or imposing;
- iii) Diversity as an attribute that did not necessarily constitute nature, but that made nature more valuable, both for aesthetic reasons and as instrumental in ensuring balance in nature;

- iv) Balance, as equilibrium in natural systems was generally considered as healthy and desirable;
- v) Robustness versus fragility: While for some participants nature was characterised as being extremely fragile, others challenged this view, describing nature as robust;
- vi) Stasis versus dynamics: While some participants described nature as being in a constant flow, the majority saw nature to be in a particular state, the latter often implying references to ideal or former states that individuals wanted to see achieved or restored.

### ***Relationship between humankind and nature***

As a third core element of biodiversity representations, we identified the views on the role of humankind in nature. We could distinguish between two main notions:

- i) humans as part of nature;
- ii) humans as separate or distinct from nature.

These two views were, in some groups, the subject of an explicit debate between individuals, openly contesting the view that humans are stewards of nature:

*I don't think it is an ownership issue at all, we are part of the environment and I really hate the idea of humans [...], the whole idea of this is mine and it is so nonsense the fact that you own a piece of land, it is ridiculous [UK-3].*

Within these two major categories, different nuances could be distinguished (Figure 6.2). For example, among those participants who considered humans as part of nature, we found groups that tended towards the view that humans were a part of nature just as any other animal, whereas others saw humans as responsible for a considerate management of nature, due to their particular abilities that distinguished them from other animals.

### **6.3.3 Views on biodiversity management in general**

We found that respondents combined notions from these three general categories in different ways to support their arguments for or against particular approaches to biodiversity management. We use the term 'views' here to denote very general forms of attitudes that do not refer to specific management measures or behaviour, but to generic approaches to biodiversity management. In particular, we identified three major views:

- i) a stance focusing on nature-related goals and favouring a 'hands off' strategy for natural areas, either immediately or shortly after the restoration of a desired state;

- ii) a stance focusing on nature-related goals but favouring a ‘hands-on’ strategy for natural areas – this included permanent human interventions to establish and maintain the desired biodiversity in an area;
- iii) a stance focusing on human-related goals, including aesthetic and economic functions.

Whereas the first stance was clearly expressed only in some Dutch groups, in particular among the local residents (NL-2, NL-3), the second view was advocated especially by birdwatchers (UK-7) and some local residents (G-2, G-3). The majority of groups shared the third view and acknowledged the multiple expectations of biodiversity held by different stakeholders and the public. However, these expectations were weighed differently between groups. For example, while the farmer students recognised that wildlife should be maintained and thus agreed on a general need to manage nature sustainably, they did not favour an extension of biodiversity protection at the expense of agricultural activities:

*I don't think we have to go to the extent of having to reintroduce habitats. Because there's still enough to maintain the wildlife as it is, without having to start spoiling good farmland really [UK-8].*

In contrast, while most recreationalists acknowledged that natural resources were the basis of rural livelihoods, they advocated a stronger political emphasis on ecological goals:

*I think environmental consideration should stand as an equal partner to financial considerations because you can't continue to raid the landscape because it is the landscape that wins people back into the hills [UK-3].*

Participants often drew on their understanding of biodiversity as described above, stressing for example the importance of biodiversity for maintaining a balance in nature, to better argue their views on biodiversity management. These views in turn were closely linked with the participants' attitudes towards specific management measures such as access regulations, management of invasive or dominant species, and habitat management, as will be shown in the next section.

### 6.3.4 Understanding attitudes towards biodiversity management

In the preceding section, we described the different components of social representations of biodiversity. Here, we illustrate how these different elements come together to form distinct, group-specific representations.

Although most respondents were committed to the protection of biodiversity in general as part of sustainable biodiversity management, they did not always agree with the specific management measures taken in the area to protect biodiversity. This

might seem contradictory at first sight. However, insights into the different notions that form a group's representation reveal that these attitudes are well-rooted in their understanding of biodiversity. The following section therefore provides context-specific illustrations to show the links between representations of biodiversity, views on biodiversity management in general and attitudes towards specific management measures.

Two group discussions are analysed in more depth in this section, following the conceptual framework outlined above, to exemplify the diversity of representations of biodiversity.

### *The Dutch residents group*

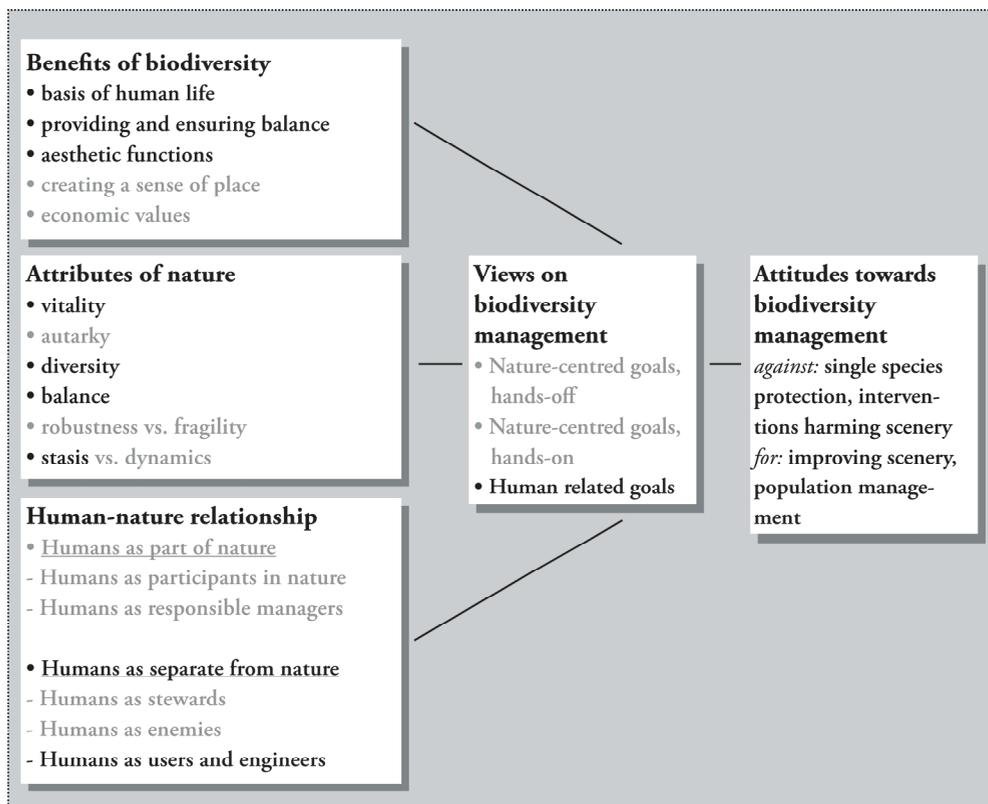


Figure 6.3. Components of biodiversity representations expressed in the Dutch residents' group. Black font indicates notions expressed in the discussion, grey font shows notions from the conceptual framework that were not found in this group.

Our first example examines the representations held by a Dutch group of local residents, consisting of three men and two women aged 35 to 55 (NL-1, hereafter A),

all living in a village at the border of the National Park. Having lived in the area for over ten years, they felt closely connected to the park, considering it very much as their “backyard”.

Biodiversity was seen as very positive in the representation of these residents (Figure 6.3). The protection of biodiversity in general was thus supported, especially because of the benefits for humans (‘A5’ refers to person 5 in focus group A):

*A5: The emergence of more plants and animals makes it more exciting. Having a stroll through the area becomes more fun when you see things. [...] I think we can't live without nature.*

Residents used the general abundance of animals, the variety of forests, moorland and brooks, but also the variety of man-made features, to assess the level of biodiversity in their area:

*A1: This area is much more diverse than the area where I used to live.*

Facilitator: *How do you notice that difference?*

*A1: You have some small houses here in the area. And a meadow in the middle of the forests, a small brook, moorland.*

Through such aspects of general environmental health, scenic beauty and landscape diversity, the residents’ concept of biodiversity related closely to their concept of nature.

As part of this, the balance of nature was a particularly important feature used to understand nature and biodiversity. Specific management measures (and thus certain cultural practices) were often judged by the effect it had on the equilibrium of nature:

*A3: Because roe deer are not managed anymore, they are now too many. That is why we all see deer near our houses. They are overabundant.*

This view, in turn, impacted on their attitude towards management, with participants arguing that the balance of nature in a country like the Netherlands, shaped by humans for many centuries, could only be maintained through active management of biodiversity. While not unanimous, the group thus expressed a relatively static view of nature.

Sustainable use of the area for human-centred goals was accepted and sometimes even favoured, because of the assumed positive influence of management on diversity:

*A1: This area is very rich in animals and plants*

*A3: It has always been rich. Because it comprises not only nature, but also agricultural areas.*

References to the economic value of biodiversity in terms of tourism were used to stress the importance of protecting the aesthetic value of nature. Participants expressed a concern that measures to enhance biodiversity might diminish aesthetic and other values of the area for incoming tourism.

*A5: More diversity is nice, but do it properly. Don't leave the dead trees standing in the area. People, also tourists, feel like they are biking through a war zone. That may diminish their appreciation of the area. It may be true that the woodpecker lives in dead trees, but the forest needs to be tidied up.*

This quote also illustrates that, even though the importance of biodiversity in general was recognised, the use of the concept was not uncontested on the local level. Discussions on the understanding and importance of protecting biodiversity in the area may have been triggered because official communication on the management of the park explicitly used biodiversity as argument to defend the proposed measures. Because participants did not always agree with the focus on biodiversity in the management of national park, they seemed to perceive the concept of biodiversity as a threat. They explicitly differentiated between protecting nature and protecting biodiversity: while caring for their natural environment, they objected to what they considered disproportionate and exaggerated efforts to conserve single species:

*A3: I would certainly regret if we had less nature in the Netherlands. But you have to be careful not to focus on only one little plant.*

*A5: We have to make sure the general picture remains okay. But take for example the exorbitant efforts to protect the Common hamster [*Cricetus cricetus*]. In Germany they have plenty of them!*

*A3: They spend a million euro only to get one specific orchid back...*

This tension between biodiversity management and nature management was also expressed when discussing specific measures for the area. The residents supported several measures that had been taken, especially those that aimed to enhance the scenic quality of the area, such as the plantation of small-scale landscape elements. Other measures to enhance biodiversity, such as the logging of trees for expansion of the drift sand area and access restriction measures, were strongly contested, especially if they were considered to have a negative impact on the scenic quality or authenticity of the area. Sometimes the effectiveness of these contested measures was also questioned:

*A3: And where do you think most sundew is found? On the beaten path.*

*A5: That is something they [experts; AB] say more often. That many plants disappear because not enough people set foot in certain areas.*

In summary, the Dutch residents' group expressed a representation of biodiversity that stressed the aesthetic functions of biodiversity at the landscape level. Consequently, they argued for biodiversity management that focused on nature and landscape in general rather than on particular species or habitats.

### *The Scottish birdwatchers group*

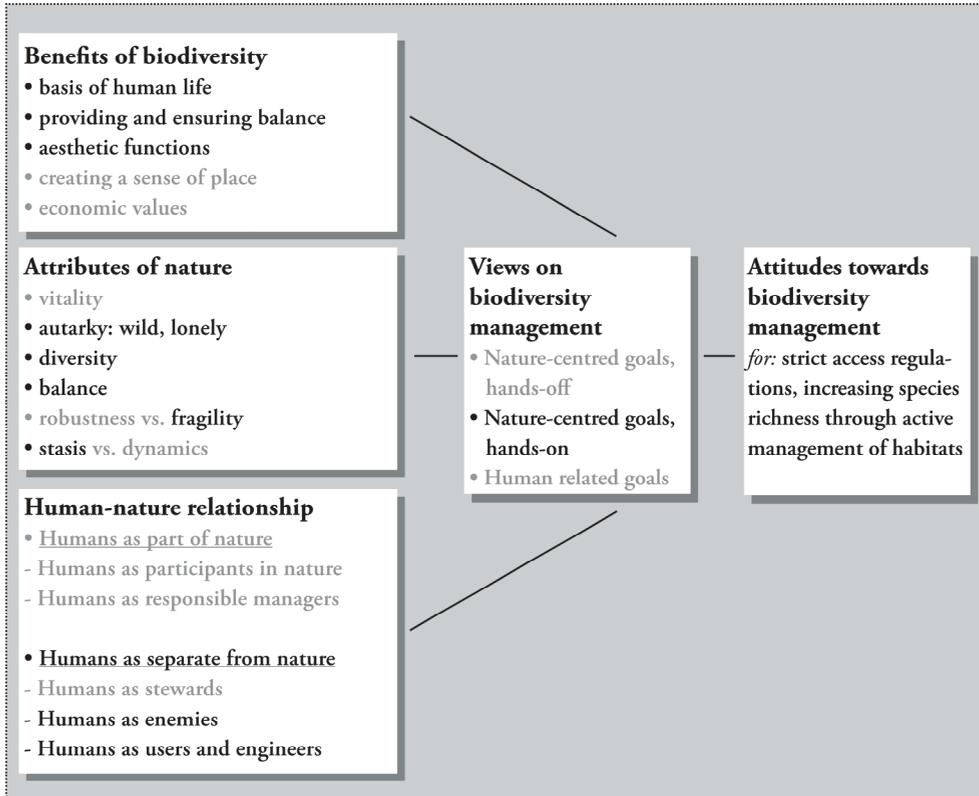


Figure 6.4. Components of biodiversity representations expressed in the Scottish birdwatchers' group. Black font indicates notions expressed in the discussion, grey font shows notions from the conceptual framework that were not found in this group.

The birdwatchers' focus group (UK-7, hereafter B) consisted of one female and five male participants, aged 49 to 75. All were keen birdwatchers and highly engaged in voluntary activities. While most lived in urban or semi-urban areas, they considered themselves as very attached to rural environments.

The participants shared a representation of nature in the Cairngorms National Park as being wild and lonely, and fragile (Figure 4):

*B2: It's so fragile.*

*B3: Yeab, you lose one species and everything is interdependent. Lose one species and that's going to have a knock on effect.*

Both ‘wildness’ and ‘fragility’ were unanimously used as arguments to protect nature in this area from potentially harmful human impacts:

*B5: It's one of the last, really the last, wilderness left in Britain. It is getting far too popular. There are too many people there.*

The participants frequently expressed their concerns about changes to natural areas they had observed in the last decades, and implicitly argued for a static view of nature and the preservation of positive states.

*B1: You go in that wood now you'll be lucky to find anything more than a buzzard and a wood pigeon. Periwinkle Bell, which was a gorgeous blue spread, it's gone. The rabbits have taken over, they are eating the trees, there is no undergrowth left and what you now have is a desert of trees.*

Asked for the criteria that defined a desirable condition of nature, some answers suggested the existence of an original, primeval state:

*B5: Well, what is there, from a pristine condition. [...] You need to look at the whole, and maybe survey what is in there, and maybe think what isn't there, and could be there, and maybe should be there.*

Diversity – both the variety of species and habitats – was by all seen as very positive, and the value of diversity – variety of colours, phenological appearance, species, habitats – was explicitly linked to its aesthetics.

*B1: Particularly when you get this wonderful colour in the spring as they come in to leaf and then the beautiful colours in the autumn as they go in to their winter.*

Diversity was also seen as essential to the equilibrium in nature:

*B3: It's like I said they are all interdependent.*

*B4: Because then you can shift the slide very rapidly.*

Beyond the contributions of diversity to balance in nature and aesthetics, the participants struggled to verbalise where they saw reasons for conservation, expressing themselves rather vaguely when they were asked why nature or biodiversity should be protected:

*B1: For the wildlife surely? For it will be destroyed without it.*

*Facilitator: But why protect it?*

*B1: Because anybody who likes wildlife would want it preserved.*

Notions of an undefined intrinsic value, but also aesthetic aspects, were also expressed when the participants talked about their views of the human-nature relationship. The group saw a clear human-nature divide, with humans being responsible for a good state of nature – for selfish reasons (B3: *It is a beautiful place and I want to be able to visit it in the future*), but also with respect to future generations:

*B2: It's been there for millions of years. I feel we should be custodians; surely we want to hand it on to the next generations and the generations after that. It has its own value.*

Most of the discussion, however, revolved around the reality of human-nature interactions as seen by the group. Numerous statements suggested that the general public were seen as ignorant masses that were the enemies of nature and biodiversity.

*B1: Now the area is full of people, who in my opinion, shouldn't be there at all. If you like to generalise the general public, huge parties of school children usually looking very upset at being beaten through. Huge quantities of people who have no interest in the country.*

Social representations shared by this group of birdwatchers thus seemed to include a cynical view of the general public, a belief that nature was fragile, and an ideal view of nature in a stable, desirable state, and biodiversity as being aesthetic and contributing to balance in nature. These notions were clearly reflected in the birdwatchers' stance towards biodiversity management that was characterised by two major notions – exclusion of any disturbances to achieve a desirable state of the protected area and, building on this, active management for biodiversity goals where deemed necessary. All members of the group agreed that strict regulations needed to be in place to restrict public access and thus reduce negative impacts of visitors. Some argued that *the higher parts of the Cairngorms ought to be banned to people* (B5), while others stressed the need to strike an adequate balance between access restrictions and the desire of interested people to visit scenic places. In the end, there was consensus about a zoned approach that would restrict access to major areas:

*B4: I would be quite willing, as a person who likes going out in to the wild, to not go in to 80% of it, and just looking from the outside.*

In addition to such protective measures, several active interventions were suggested such as the culling of deer and the establishment of habitat networks. These were assumed to improve the current state, implying an increase in biodiversity:

*B1: Do you know what birders want? They want a connection between the Speyside and the Deeside forests. So that we have got a corridor for nature to travel up and down. Particularly in our case birds but other things would eventually find their way.*

The birdwatchers' group thus generally saw biodiversity goals as priority for land management.

### ***Comparing biodiversity representations***

These two examples illustrate how the participants anchored their concepts of biodiversity in their representations of related objects such as nature and landscape. For instance, the notion of balance in nature was used to give importance to biodiversity through the idea that biodiversity was contributing to balance, a notion expressed in both groups. Similarly, diversity was ascribed value through its aesthetics: a more diverse nature was unanimously seen as more beautiful. However, the groups diverged on the level on which they expressed their preference of diversity. While the Dutch residents emphasised the scenic value of habitat and structural diversity within a landscape, the Scottish birdwatchers also expressed their enjoyment of species diversity. This was consequently reflected in their views on biodiversity management: While the Dutch residents were opposed to management targeting particular species at the expense of landscape-based management, the birdwatchers suggested management measures that supported particular species.

The groups differed considerably in the attributes and values they ascribed to nature. Compared to the Scottish birdwatchers and Dutch residents, other groups, such as both the German and the Scottish forester groups (G-5, UK-6) had a clearly less static view of biodiversity: *You don't want it to stand still. In many ways you want the area to move forward* [UK-6]. For the forester groups, the dynamic notion of biodiversity was at the core of their representations, and they explicitly argued against a prescriptive stance towards biodiversity management that sees nature as fragile and vulnerable: *Rubbish! It's not fragile, it's extremely robust and if something does go something else will take its place* [UK-6].

The idea of nature as being autarkic, here understood as untouched, wild and lonely, was expressed in particular by the Scottish birdwatchers, whereas others, such as the forester groups and the Dutch local residents, saw nature clearly as a product of human and natural interactions. This again was reflected in views on biodiversity management in general, and attitudes towards specific management measures in particular, where the birdwatchers argued for stricter regulations to exclude the general public from large natural areas, whilst the foresters and the Dutch residents saw nature as in need of continuous human intervention.

## **6.4 Discussion**

Past studies addressing public understanding of biodiversity have often focused on biodiversity as a stand-alone concept, qualifying the concepts and definitions expressed by members of the public as either 'right' or 'wrong' in relation to scientific terminology. However, our findings show that an analysis of the notions that different

groups within the public use to reason and argue about biodiversity appears much more suitable for revealing the reasons for the acceptance of, and protest against, biodiversity-related measures.

An innovative aspect of this study is the description of the different views on biodiversity as comprehensive social representations, anchored in related concepts like nature and landscape. We show that describing people's understanding of biodiversity as social representations is helpful in understanding attitudes on biodiversity management, for example by differentiating between different causes of critical attitudes on biodiversity conservation measures. These representations are embedded in people's knowledge, experience and practices, and shared and negotiated within and between groups. Our study provides an overview of those components of social representations of biodiversity that are actually used in different group-specific discourses on biodiversity. Our approach is thus more comprehensive than those that focus on one component, such as human-nature relationships, disconnected from the wider context. Indeed, the results of our focus group discussions revealed that such social representations of biodiversity tend to consist of interrelated components such as (i) benefits and functions assigned to biodiversity, (ii) attributes and values related to nature and (iii) views on the human-nature relationship. The notions within these components can have both descriptive and normative, i.e., evaluative, aspects, which have been found to heavily influence related attitudes and behaviour (Fischer and Van der Wal 2007; (Hunter & Rinner, 2004; Lindström et al., 2006). Figure 2 gives an overview of the components of representations found in our sample, although it is by no means intended to be exhaustive.

The merit of this approach is twofold. First, it enabled us to show that the participants' attitudes to biodiversity and its management were well-rooted in their representations of biodiversity and nature. Second, an analysis of such representations helps to identify shared and conflicting perspectives between groups and to identify reasons behind conflicts over biodiversity management. Both these aspects and their impact on biodiversity management are explored in more detail below.

First, our results demonstrated that participants' attitudes towards biodiversity and its management were by no means 'free-floating', but clearly rooted in their representations of biodiversity and nature. Participants often explicitly related their views and attitudes regarding biodiversity management to the attributes they attributed to nature. Consequently, superficially similar, negative attitudes towards particular biodiversity management measures proved to be based on very different representations of biodiversity. For example, some groups voiced strong opposition to the expansion of the driftsand area in the Drents Friese Wold national park, and argued for a hands-off strategy, drawing on representations based on the autarky and vitality of nature. Others shared this opposition to expansion of the driftsand, but for different reasons and related to quite different representations of biodiversity. They

rejected the envisaged ecological restoration because of their deep appreciation of the aesthetics of the current landscape, which would be destroyed by the expansion of the driftsand area. A better understanding of such opposition and its grounding in social representations of biodiversity and nature may help to mitigate the negative implications of specific measures. If negative attitudes towards transforming a coniferous forest to a drift sand area are caused by fear of diminishing landscape variety, preserving small patches of trees within the restored drift sand area may safeguard residents' perception of landscape diversity and thus diminish opposition to such measures. However, such mitigating measures would not be helpful in convincing people who contest the expansion because it interferes with the autarky and authenticity of nature.

We thus argue that not only direct reactions to management options, but also the representations that underpin public attitudes towards the management of the natural environment need to be understood in order to make decisions that are shared by the general public. These are related to the cultural and natural context of the groups in question. While our study was not designed to allow generalised conclusions on cultural differences between groups or sample sites, several phenomena seem to emerge that might merit further research. For example, current public discourses – as presented, for example, by the media and local actors – might have had an influence on the social representations expressed in the different study sites. Issues related to ecological restoration were frequently brought up in the Drents Friese Wold discussions. Consequently, hands-off approaches were favoured where participants objected to restoration. In contrast, restoration did not seem to be of major importance to the Scottish groups, who tended to discuss the idea of wilderness and consequently incorporated 'autarky' as an attribute of nature in their representations. Discussions on the island of Rügen and at the Drents Friese Wold often focused on aspects of land use regulations in the context of the recent designation, while such issues were rarely brought up in the Scottish groups. These results could in future research be explored against the backdrop of the different designation processes and their reflection in the media and in local fora. In addition, differences between professional cultures seemed to be striking, with both the German and the Scottish foresters arguing for a more dynamic approach to biodiversity management, in contrast to other groups who maintained that biodiversity should be managed in a more static way. This is of high relevance to policymakers and managers who need to address the causes of such critical voices in order to effectively manage areas for biodiversity, and provides in-depth insights that reach far beyond the type of results that opinion polls can provide.

Understanding representations of biodiversity also contributes to an improvement of communication on biodiversity policies and management measures. Indeed, critical comments on the strategic use of the term 'biodiversity' and the critical associations

expressed by some of the local residents' groups show that its use should differentiate between target audiences and be carefully planned to avoid unintended reactions. Taking the idea of 'social representations' further, communication on biodiversity management need not be limited to the concept of biodiversity, but could include many of the notions that we found in our focus groups to have more positive connotations. For example, proposed measures could be linked to the many positive functions and attributes related to biodiversity and nature, such as aesthetic aspects and the creation of a sense of place.

Second, an analysis of social representations helps to identify perspectives shared in groups, and can highlight the consequences of clashes between representations employed by different groups. The explicit recognition of the multitude of notions that make up social representations of biodiversity and ultimately inform attitudes distinguishes our approach from previous studies that assume the existence of one single dominant social representation of nature, landscape or rurality and ignore their diversity and the implications for the management of nature (Halfacree, 1993; Hovardas and Stamou 2006).

This need to differentiate between groups is also illustrated by our finding that directly affected social groups, such as farmers and hunters, feel threatened in their interests by the rise in political support for biodiversity conservation. Social representation research has suggested that threatened groups tend to develop competing social representations of relevant concepts (Moscovici 2000). We recognise this tendency also in our focus groups, as some people, especially farmers and critical resident-groups, tend to emphasize the diversity aspect of biodiversity, downplaying the biological aspects and sometimes even translating biodiversity into cultural or landscape diversity. Through anchoring their representation of biodiversity in more familiar representations of nature and landscape diversity, these groups tend to 'neutralise' components of ecology-based representations of nature that threaten certain valued aspects of nature.

The framework we developed to organise the multitude of elements that formed biodiversity representations is empirically grounded in the focus group discussions. On the other hand, it also borrows concepts from previous studies and theories on public understanding of nature (Van den Born *et al.* 2001; Hunter and Rinner 2004; Buijs *et al.* 2006; Buijs, 2009a). A comparison of the representations described in this paper with descriptions in the literature reveal further insights. Our analysis showed that participants drew heavily on their representations of nature to address the biodiversity issues they were confronted with in the focus group discussion. The participants thus made use of a much broader repertoire of ideas and experiences to reason about biodiversity than assumed in many previous studies on the public understanding of biodiversity (Elder *et al.* 2002; Lindström *et al.* 2006). Attributes and values they associated to nature – such as balance in nature, its diversity and autarky –

provided the participants with a frame against which benefits of biodiversity are considered. Previous research into images of nature, i.e., networks of interrelated values and beliefs people use to understand nature, has shown the wide variety of values and beliefs that members of the general public employ to understand nature (Buijs, 2009a). Concepts such as health, naturalness, diversity and balance have also been shown to play a role in the understanding and appreciation of nature (Hull *et al.* 2001; Fischer and Bliss 2006). The prevalence of balance-related notions in the discussions might reflect the extent to which equilibrium theories for ecological thinking in past decades have now reached educational curricula and popular scientific programmes (Wallington *et al.* 2005; Hovardas and Stamou 2006; Fischer and Van der Wal 2007). This may be an illustration of how scientific concepts are transformed into social representations: the reproduction of scientific concepts into common understanding usually includes some adaptation of the original scientific concept to the values and experiences of the general public (Moscovici 2000). The dispersion of developing scientific knowledge on biodiversity into social representations of biodiversity requires time, as the scientific concept needs to be represented, for example, in school curricula, media and the public discourse, in order to be incorporated into the public's representations. The prominent place of a notion of 'balance' in representations of biodiversity may be an example of such time effects, as the dominant paradigm in ecology has already replaced such a notion with the notion of nature in flux (Callicott 2002).

Research into the attitudes towards biodiversity and nature have thus far focused either on the psychological level of individual cognitions and attitudes (Lindström *et al.* 2006; Fischer and Van der Wal 2007; Buijs, 2009a), or on the social level of discursive actions (Morris and Wragg 2003). To understand public perceptions of biodiversity, we need to acknowledge both the individual level of cognitions, as well as the social level on which these cognitions are based and are used to reflect on concrete biodiversity management. The theory of social representations applied here is a novel way to bridge both perspectives. Future research could explore the extent to which group-specific representations are embedded in and influenced by large-scale processes of paradigm change. For example, research on the New Environmental Paradigm suggests that, while dominant discourses are changing, individuals may hold conflicting representations of nature and the human-nature relationship, adopting a new paradigm while the old one is still salient (Dunlap *et al.* 2000; Castro and Lima 2001). Such processes of change, as well as the notion of conflicting or contradictory representations, have not been addressed here and certainly merit further investigation.

Our data demonstrate that the participants' understanding of biodiversity is informed by much more than definitions of biodiversity or knowledge about endangered species. As such, providing 'the right information' to the public from

biologists will not necessarily change public attitudes – there is much more to attitudes and related representations that needs to be considered, including personal experiences, common sense beliefs and the importance of different values attributed to biodiversity, nature, and the human-nature relationship. Simple measures of awareness raising will thus likely fail if the diversity of representations that members of the public use to form attitudes towards biodiversity policy and management is not understood and taken into account. Based on our results, we argue that discursive approaches that recognise and embrace the public's multi-faceted and well-embedded views are required to improve public support for biodiversity management and to constructively manage conflicts.

# **The framing of ecological restoration in floodplains**

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## 7 The framing of ecological restoration in floodplains

### Abstract

In many European countries, accommodating water has become the dominant paradigm in river management. In the Netherlands, extensive river restoration projects are being implemented, many of which draw serious opposition from the public. To investigate the causes of such opposition, a comprehensive study of public attitudes towards river restoration was conducted in three floodplains, both before and after river restoration. The study combined quantitative questionnaires (N=562) with open interviews (N=29). This paper describes how local residents perceive the effects of river restoration on landscape quality and how residents and protest groups use landscape quality in combination with other arguments to strategically frame river management policies. Results show that measurement of the perceived outcomes of nature restoration needs to be complemented by a more dynamic type of research, focusing on the social processes of the framing of restoration plans. Theoretically, the paper aims to contribute to the development of a rigorous research strategy to study framing processes in environmental management, using a mixed-methods approach.

In general, local residents are supportive of river restoration projects. Although restoration may diminish feelings of attachment to an area, for most people this negative effect is compensated by the positive effects on scenic beauty and perceived protection from flooding. However, these positive effects may become contested because of the active framing of river restoration by protest groups.

Residents use three distinct frames to give meaning to river restoration projects: (i) an *attachment frame*, focusing on cultural heritage and place attachment (ii) an *attractive nature frame*, focusing on nature as attractive living space and the intrinsic value of nature (iii) a *rurality frame*, focusing on rural values, agriculture and cultural heritage. Resistance to river restoration plans stems from the attachment and rurality frames. People using these frames challenge safety arguments for river restoration and highlight potential threats to sense of place and to agriculture. In the areas surveyed, the project initiator's focus on biodiversity and safety did not resonate very well among the local community, because of their diverging views on nature. Practical implications of the study include the need to incorporate public perception into river restoration projects and the potential for project initiators to form strategic alliances with local residents to promote ecological restoration in combination with river restoration.

## 7.1 Introduction

### 7.1.1 Changes in river management

The Netherlands is renowned for its battle against water. This battle also relates to the management of rivers, most notably the Rhine and the Meuse. Ever since the mid-19<sup>th</sup> century, river management has been framed as a technological challenge, focusing on flood prevention through maximizing control over the river by technical means (Wolsink, 2006). Until the 1970s, this technical approach to risk reduction had been successful in preventing flooding and received wide public support.

From the 1970s onwards, the technological approach to river management was seriously challenged by new discourses focusing more on nature protection and landscape quality. An “ecological shift” in river management could be witnessed, especially in public opinion (Disco, 2002). People living along rivers, environmentalists and historians protested strongly against the policy of dike enhancements to improve safety along the rivers. Instead of framing river management primarily in terms of risks, they focused on the environmental impact and the importance of protecting the “typical Dutch” river landscape. A near-flooding in 1995 stimulated a more integrated approach to river management, called “Room for the River”. From the start, the planning of the Room for the River project was embedded in a limited process of public participation. However, decisions about goals and methods were mainly taken in a top-down process (Wiering & Arts, 2006; Wolsink, 2006).

The policy of accommodating water –working with nature and not against it – as formalized in the Room for the River project is comparable to river restoration practices in many other countries (e.g. Van Stokkom et al., 2005; Gregory, 2006). The dominant strategy shifted from hard engineering techniques, such as the strengthening of dikes, to softer techniques which enhance the water discharge capacity of rivers. This policy was combined with efforts to increase ecological quality through river restoration. In the Netherlands, river restoration often includes the lowering of floodplains, for instance by digging side channels or removing topsoil, and the removal of obstacles such as vegetation and old buildings (Van Stokkom et al., 2005). Improvement of landscape quality (also called spatial quality) is included in the formal goals of these plans and is defined as a combination of ecological quality, preservation of cultural heritage, accessibility, and scenic quality (LNV, 2000).

Just as the Dutch policy of accommodating water through combining flood protection measures with ecological restoration is comparable with other countries, so are the resulting social conflicts (e.g. Junker et al., 2007). The national government has framed river restoration as a win-win situation, combining economic, ecological and safety improvements. However, many other actors disagreed and the last ten years

have been characterized by local as well as national protests against river restoration plans. For example, farmers frame the projects in economic terms, focusing on the loss of agricultural opportunities. Restoration also has an impact on cultural heritage (for example when historic brickyards are removed) and can destroy old geographical phenomena (such as the many small lakes that are remnants of 18<sup>th</sup> or 19<sup>th</sup> century dike breaches). Therefore, some people do not see the new policy as improving landscape quality, but as the destruction of cultural heritage.

### 7.1.2 Perceived qualities of rivers and floodplains

Different traditions exist in the study of public perception of landscape change (e.g. Lengkeek, 2000). First of all, much research has been conducted into environmental qualities and relations between people and the environment. Research from environmental psychology especially focuses on scenic beauty. Scenic beauty (also called aesthetic value or scenic value) is often interpreted as the visual perception of the environment (e.g. Kaplan & Kaplan, 1989). Empirical studies show that several landscape characteristics correlate positively with scenic beauty. Vegetation, landscape variety, naturalness, the presence of water and the unity of the landscape (also called the “oneness” or “internal cohesion” of the landscape) are generally highly appreciated features of natural landscapes (De Vries et al., 2007). Other valued features of floodplains include spaciousness, presence of flora and fauna and the dynamic visual characteristics of the area, resulting from constantly changing water levels (Ryan, 1998; Tunstall et al., 2000; Nassauer, 2004). Preferences seem to diverge on the level of maintenance of both dry and wet landscapes. Some people prefer well kept landscapes, while others prefer wilder and more natural landscapes (Buijs, 2009a; Buijs et al., 2009).

Attitudes towards landscape change are not only affected by the impacts on scenic beauty. People develop feelings of belonging and attachment to an area and develop narratives about the river that circulate in the community (Lengkeek, 2000). Therefore, in the field of human geography, a more relational concept of landscape appreciation has been introduced to capture landscape quality: this is called *sense of place* (Tuan, 1974). Jorgensen and Stedman (2006) conceptualize sense of place as a three dimensional construct, combining place attachment, place identity and dependence on the place for leisure activities.

A third, more normative, aspect that may influence local residents' attitudes towards river restoration is related to the perceived importance of nature conservation (Tunstall et al., 2000). Floodplains often serve important ecological functions, for example for migrating birds such as geese. As such, the importance of the *intrinsic value*

of nature in the floodplains may also influence people's attitudes towards floodplain restoration. Although philosophical discussion exists on whether intrinsic value can exist without people actually assigning such a value, the intrinsic value of nature (or *existence value*) has been conceptualized in prior studies as the value people attach to nature, irrespective of the use they want to make of it (Fredman, 1994).

Finally, river restoration is closely related to flood protection. Most river restoration projects are introduced as a measure to reduce the risk of massive flooding through a breach of the dikes. It is to be expected that after the near-flooding in 1995, *risk perception* and safety also are important aspects for residents.

As will be described in the methods section, this study combines these four approaches in the operationalization of the perceived landscape qualities by local residents.

### 7.1.3 Framing processes

The history of environmental conflicts shows that public support for environmental change is determined not only by the perceived effects, but also by the political process of implementation and communication (Lewicki & Gray, 2003). As elsewhere in Europe (Junker et al., 2007), Dutch plans for river restoration have provoked controversies over the management of rivers and floodplains. Different stakeholders compete over the definition of the situation and the issues that are at stake (e.g. Wolsink, 2006). In such situations, a dynamic process occurs in which stakeholders actively *frame* the restoration plans and its effects on the floodplains and the community.

Sociological studies of framing focus on the discursive processes through which groups advocate specific interpretations of reality and suggest appropriate actions (Schön & Rein, 1994). In the process of framing, certain characteristics of the situation are emphasized, while others are neglected or trivialized. Comprehensive frames (as the outcome of these processes) give these salient features a coherent organization and suggest whether changes need to be implemented in order to protect or enhance these features (Schön & Rein, 1994). As such, frames are used to define issues, to shape what actions should be taken and to mobilize other people or organizations (Benford & Snow, 2000). It has been shown that many environmental disputes are related to different framing strategies used by groups of stakeholders (Lewicki & Gray, 2003).

A key concept in research into the effectiveness of framing is the concept of *resonance*. The resonance of a frame is related to its credibility for the stakeholders involved, as well as to the relative salience of its constituent elements (Benford & Snow, 2000). For example, before 1995 flood prevention was hardly a political and

social issue, because serious flooding had not occurred for several decades. Consequently, river restoration plans framed as safety measures were often contested and a policy deadlock existed for many years.

#### **7.1.4 The present study**

Using a mixed-method approach, this paper reports on a comprehensive study into the local framing of river restoration projects. The purpose of the study is both empirical and theoretical: Empirically, the paper quantifies the perceived effects of river restoration on landscape quality and describes how landscape qualities (and other arguments) are used in local framing processes related to the implementation of river restoration policies. Theoretically, the paper aims to contribute to the development of a rigorous research strategy to study framing processes in environmental management.

The first half of the results section presents the results of a quantitative study into the perceived qualities of floodplains, and measures the meanings people attach to river restoration. Based on these meanings, three different frames are described that residents use to give meaning to floodplain restoration. The second part of the results section analyses the dynamic aspects of the framing process. Based on qualitative interviews, this section describes how people and groups actively frame the restoration.

## **7.2 Methods**

### ***Design of the study***

In order to incorporate the different aspects related to public support for river restoration, a mixed-method approach was chosen for this research. Typical of such research is the expansion of quantitative research to assess the outcomes of a program with qualitative research to assess the process of implementation of the program (Greene et al., 1989). To evaluate processes of landscape changes, a longitudinal study with a measurements before and after implementation of one and the same project would be ideal. However, as river restoration projects last ten years or more, a longitudinal study was not feasible in this case. Fortunately, traditional floodplains along the Rhine share many characteristics and river restoration usually focuses on similar types of measures. Furthermore, because of, extensive national media coverage, the discourses on river restoration in the affected villages are very similar. As the types of measures and the framing processes are also comparable between different floodplains, pre- and post restoration floodplains can be compared to evaluate the effects of river restoration.

The empirical research started with a quantitative survey among people living near two Dutch floodplains of the Rhine. The survey looked at the frames people used to give meaning to river restoration, as well as at the perceived effects of river restoration on the local landscape. In addition, qualitative interviews were conducted with residents. The qualitative research was based on the typology of framing processes developed in the quantitative analysis and focused on the *process* of framing and the arguments used to underpin a specific frame.

### ***The study areas***

The present study focuses on two types of floodplains: “traditional” floodplains and “restored” floodplains (table 7.1). The floodplains are located along the main branches of the Rhine (Figure 7.1). Before 1990, almost all floodplains in the Netherlands were traditional floodplains (usually consisting predominantly of agricultural meadows). These riverine landscapes are very open and are often considered “typically Dutch” landscapes (Coeterier, 1996). They provide important habitats for migrating water birds, such as geese.

*Table 7.1. Design of the study.*

	Traditional floodplain (pre-measure)	Restored floodplain (post-measure)	Scope and topics:
Quantitative study	Wamel	Gameren	<ul style="list-style-type: none"> <li>• perceived spatial qualities               <ul style="list-style-type: none"> <li>- scenic beauty</li> <li>- sense of place</li> <li>- intrinsic value</li> <li>- risk perception</li> </ul> </li> <li>• attitudes towards restoration</li> <li>• frames used to give meaning to restoration</li> </ul>
Qualitative study	Rosandepolder	Gameren	<ul style="list-style-type: none"> <li>• framing of river restoration (=process of constructing frames)</li> <li>• arguments used to strengthen or weaken relevance of frames</li> <li>• attitudes towards restoration</li> <li>• cultural resonance of the arguments used in framing strategies</li> </ul>

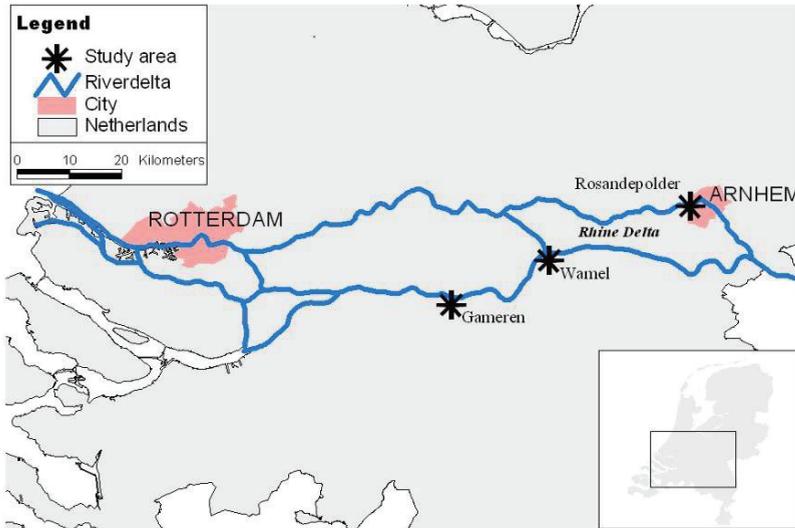


Figure 7.1. Location of the three study-sites

As typical examples of traditional floodplains, we chose the floodplains of Wamel and the Rosandepolder. The quantitative study of a traditional floodplain was executed near the Wamel floodplain (Figure 7.2). This 210 hectare floodplain consists mainly of meadows used for grazing cows, diversified with some trees and small lakes. In the recent Room for the River plans, river restoration was one of the options for the floodplain (Ministry of V&W, 2007). These plans have been postponed until at least 2015.

Unfortunately, after the survey was conducted, radical housing plans were developed for the Wamel floodplain. Because these housing plans are very distinct from river restoration plans and are rather atypical for floodplains in the Netherlands, we chose to focus the qualitative research on a different floodplain, the Rosandepolder (Figure 7.3). This is a 190 hectare traditional floodplain with meadows and some small lakes, comparable to the Wamel floodplain. In 2000, the Directorate General for Public Works and Water Management presented restoration plans for the floodplain, focusing on digging side branches in combination with ecological restoration. For the moment, these plans have been halted because of social protests. Local residents have formed a protest group, which has been very active in discussing the goals and effects of the proposed plans.



*Figure 7.2. Wamel floodplain (“traditional”)*



*Figure 7.3. Rosandepolder floodplain (“traditional”)*



*Figure 7.4. Gameraen floodplain (Restored)*

The two traditional floodplains described above were compared to a restored floodplain, the Gameren floodplain (Figure 7.4). Before its restoration in 1999, this 130 hectare floodplain was a “traditional” floodplain, consisting of meadows with grazing cows, small lakes and a historic brickyard. The pre-restoration landscape was very much comparable to the Wamel and Rosandepolder floodplains. The Gameren floodplain is a typical example of river restoration along the Rhine focusing on the development of more dynamic types of nature. Restoration included both improvement of the river’s discharge capacity and ecological restoration. Three secondary channels were excavated with a combined length up to two kilometres, one of which flows all year round while the other two flow for four to ten months a year. Ecological restoration mainly focused on improving habitats for fish and other riverine species and habitats (Jans, 2004). The wide variety of water types offers suitable habitats for several protected and red list species. Various protected fish species with a preference for flowing water (e.g. *Barbus barbus* and *Lampetra fluviatilis*) mature in the secondary before migrating to the main channel) (Jans, 2004).

### ***Quantitative study***

The quantitative study was conducted in 2004 among residents of the villages near the Wamel and Gameren floodplains. Residents were selected randomly from the database of the Dutch postal service. In total 562 postal questionnaires were returned, 303 from the Wamel floodplain and 259 from the Gameren floodplain. Response rates were 49% and 43%. Compared to the population of the villages surveyed, middle aged people (53%) and men (64%) were over-represented among the respondents. However, the results show that neither age nor gender affects the framing of river management, so this does not undermine the validity of the results.

The questionnaire focused on 1) the different meanings people attach to restoration of the floodplains near their home, 2) their attitudes on river restoration and nature development in the floodplains, and 3) the perceived qualities of the floodplains, conceptualized in terms of scenic beauty, sense of place, intrinsic value and risk perception. Additionally, several socio-demographic characteristics were measured, including occupation, length of residence in the area and place of birth.

In the quantitative study, frames are considered to be the *result* of local, regional and national discourses on river restoration. Respondents were asked to rate the importance of eight different meanings of the floodplains (ranging from cultural history to attractive living space) on a seven-point scale. The selection of meanings was based on existing literature. To construct the relevant frames people use to develop attitudes on changing floodplains, we conducted a two-step cluster analysis. Cluster analysis is an exploratory tool to reveal natural groups. The statistical procedure is based on minimizing the difference within a cluster, while maximizing the differences between clusters.

Overall attitude towards river restoration was measured using a single Likert-scale question. In the traditional floodplain, this question was about support for possible future restoration, while in the restored floodplain, the question covered support *in hindsight* for the already implemented restoration.

Perceived landscape qualities have been operationalized with four separate scales to measure scenic beauty, sense of place, the intrinsic value of nature in the floodplain and risk perception. All items used a seven-point Likert scale (see Table 2 for an overview of all items). Selection of the items was based on a review of the literature on the four above-mentioned dimensions (Fredman, 1994; Lengkeek, 2000; Ryan, 2005; Jorgensen & Stedman, 2006; De Vries et al., 2007). As the literature survey suggested that scenic beauty consisted of a wide range of different kinds of scenic qualities, this dimension was measured using 12 different items. Because of space limitations in the questionnaire, we focussed the measurement of sense of place on the most important cultural and emotional meanings of floodplains (Nienhuis & Leuven, 2001) and conceptualized sense of place as a combination of place attachment and place identity, each measured by three items. Intrinsic value and risk perception were both measured by three items. All scales were constructed by computing the sum-scores of the items. Analysis showed that both validity and reliability of the scales were high: in a confirmatory factor analysis all items (except for one item for scenic beauty, which was subsequently removed) loaded only on the appropriate dimension ( $> 0.4$ )<sup>1</sup>. Reliability of the scales was moderate (for risk perception) or high (for all other scales; see Table 7.2).

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<sup>1</sup> Details of the analysis can be sent upon request.

Table 7.2: Description of indicators used to measure the four dimensions of perceived landscape quality of floodplains and the reliability of the constructed scales

Scenic beauty (12)		Sense of place (2x3)	Intrinsic value (3)	Risk perception (3)
Vegetation	Presence of water	<b>Dimension 1: Landscape identity</b>	Significant for nature conservation	Restoration improves safety
Variety	Well maintained			
Naturalness	Unity	Landscape genesis recognizable	Protection is important even if not allowed to visit	Only people elsewhere profit from safety (negative)
Spaciousness	Many <i>rare</i> plants and animals			
Seasonal variety	Many <i>different</i> plants and animals	<b>Dimension 2: Personal attachment</b>	Importance of protection of similar areas elsewhere	Restoration diminishes chance of flooding
Dynamic area	Visibility of river			
		Sense of familiarity		
		Personal memories		
<i>Cronbach's a=.89</i>		<i>Cronbach's a=.75</i>	<i>Cronbach's a=.71</i>	<i>Cronbach's a=.63</i>

### Qualitative study

After finishing the quantitative study, a qualitative study was conducted among residents living near the restored Garamen floodplain and the Rosandepolder (a traditional floodplain). Again, respondents were randomly selected from the Dutch postal service database. After receiving an introduction letter by mail, 29 (14 + 15) people were interviewed in their homes (a response rate of 33%). The semi-structured interviews lasted from 45 to 110 minutes. In addition, researchers analysed documents relating to the river restoration plans and interviewed representatives of the local municipality, the Directorate General of Public Works and Water Management and the local protest group in the Rosandepolder.

All interviews have been coded into one of the three frames derived from the quantitative survey. The researcher and one of the interviewers analysed the transcripts of the interviews separately from each other and classified all interviews into one of the three frames. Comparison of the coding results showed a 79% agreement. Cohen's Kappa for inter-coder reliability was high ( $\kappa=0.64$ ;  $p<.001$ ). After discussion among the coders, agreement was reached on three interviews, resulting in agreement on the frames used by 25 out of 29 respondents. Disagreement remained on three interviews, which were therefore removed from the analysis (one interview had insufficient data for classification). This high level of agreement on the types of

frames used by participants suggests that the frames derived from the quantitative research are also applicable to framing of floodplain restoration as revealed by the qualitative interviews.

In the results section, quotes from the interviews are given to illustrate the conclusions of the qualitative study. The source of the quote is given in brackets. The letter represents the floodplain the quote relates to (R=Rosandepolder, G=Gameren, W=Wamel), the number represents the number of the respondents.

## 7.3 Results

### 7.3.1 Differences in perceived qualities

To understand the effect of restoration on the perceived qualities of floodplains, we compared the scores for the restored floodplain (Gameren) with the scores for the traditional floodplain (Wamel) on all four indicators for perceived landscape quality: scenic beauty, sense of place, intrinsic value of nature and risk perception.

In general, average perceived scenic beauty is significantly higher for the restored floodplain than for the traditional one (Table 7.3). The restored floodplain scores significantly higher on seven out of twelve items for scenic beauty, especially landscape variety, the perceived unity of the area, the presence of water in the floodplain, and the naturalness of the area.

The findings for sense of place related to floodplains show quite a different pattern. In general, people feel less attached to the floodplain after restoration (Table 7.3). They feel less familiar with restored floodplains. Restoration also weakens the narrative value of the floodplains, related both to personal memories and to general narratives about the area. Finally, restored floodplains embody the “typical Dutch” identity of the landscape less.

The perceived intrinsic value of nature of the floodplains is high for most people living near the floodplains. Eighty-five per cent of the residents state that nature conservation in the floodplains is important. Seventy-five per cent support the conservation of such areas, even if this involves closing the area to visitors. River restoration does not seem to affect the intrinsic value of the floodplain: no significant difference exists between the intrinsic value of the restored and the traditional floodplains (Table 7.3).

River restoration does not seem to influence the risk perception of local residents. The majority of local people feel safe living along the river and no significant differences were found between the two floodplains. Twenty-eight per cent of the

residents sometimes feel unsafe and twenty-six per cent are afraid that one day, high water levels in the river and floodplains could cause the dikes to break (Table 7.3).

Table 7.3. Differences in perceived scenic beauty, sense of place, intrinsic value and risk perception of floodplain before and after river restoration (scale 1-7; N=547).

Quality	Significant difference? (F-value; df=1)	Floodplain before restoration	Floodplain after restoration	Effect	Most important effects on items
Scenic beauty	10.8**	4.65	4.88	▲▲	▲▲: variety ▲▲: presence of water ▲▲: unity ▲▲: naturalness ▲: spaciousness ▲: well maintained ▲: dynamic area
Sense of place	6.2*	4.70	4.49	▼	▼: sense of familiarity ▼: personal memories ▼: narrative value ▼: typically Dutch landscape
Intrinsic value	n.s.	5.30	5.39	-	-
Risk-perception	n.s.	4.19	4.23	-	-

\*: p < .05

\*\* : p < .01

▲ and ▲▲: positive effect (p<.05 and p<.01)

▼ and ▼▼: negative effect (p<.05 and p<.01)

### 7.3.2 Relevance of indicators for overall quality of the floodplains

To determine the relative importance of the four indicators for landscape quality, we conducted a regression analysis of the four scales on the scores for the perceived *overall quality* of the floodplain. In general, scenic beauty is the most relevant quality, followed by the intrinsic value of nature and the sense of place. Risk perception has the lowest influence on the perceived overall quality of the floodplain (Figure 7.5). In total, 42% of the variance in overall quality can be explained by the four factors (R<sup>2</sup>=.42).

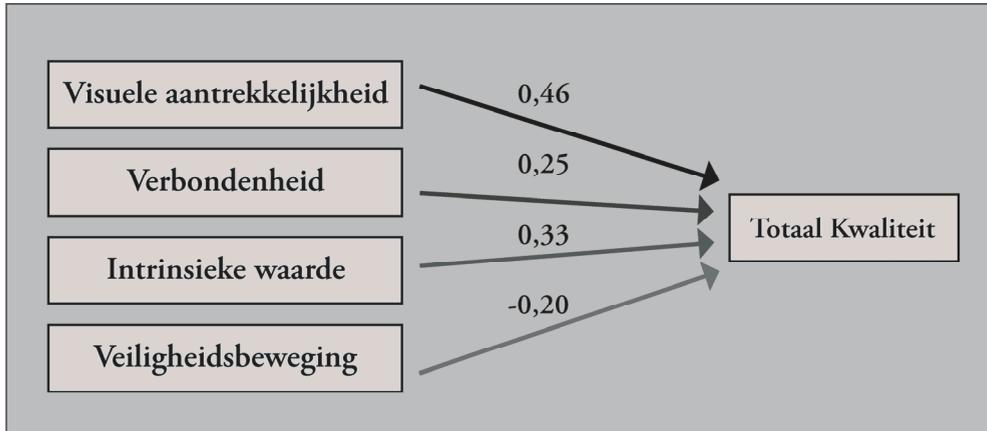


Figure 7.5. Influence of perceived scenic beauty, intrinsic value of nature, sense of place and risk perception on the perceived overall quality of the floodplains (regression analysis; displayed are the partial correlations ( $\beta$ ))

### 7.3.3 Different frames

Thus far, we have focused on *similarities* in attitudes and perceived qualities of the floodplains. However, important differences also exist between social groups. To get a better understanding of the different opinions among residents, and thus understand social protests, we investigated the different frames people use to give meaning to proposed restoration of floodplains.

In general, nature, attractive living space and rurality are the most important meanings attached to the floodplains (Table 7.4). Safety is of moderate importance and agriculture is not very important for most local residents. However, strong differences exist between different groups of people. To describe the differences in meanings, a cluster analysis was carried out. Based on theories of framing described in the introduction, these clusters of meanings can be interpreted as different frames people use to give meaning to the situation.

Cluster analyses revealed three distinct frames used by respondents, related to different sets of meanings: (i) the *attachment frame* (ii) the *attractive nature frame*, and (iii) the *rurality frame* (Table 7.4).

Table 7.4. Description of the frames on floodplain restoration, based on cluster analysis of the perceived importance of meanings of the floodplains.

Meanings attached to floodplain	Average (1-7)	Frame		
		Attachment	Attractive nature	Rurality
Nature	6.08	6.12	6.16	
Attractive living space	5.48		5.98	3.02
Rurality	5.34		4.21	5.35
Personal attachment	4.87	5.86	3.41	
Safety	4.83			
Attractive recreational space	4.78		4.86	
Cultural history	4.77	5.33	3.60	
Agriculture	3.37		2.35	3.86
<b>Number of respondents<sup>a</sup></b>	<b>515</b>	<b>323</b>	<b>106</b>	<b>86</b>

Only meanings that contribute significantly to the frame (either positive or negative) are included in the table (t-test;  $p < .01$ )

<sup>a</sup> As cluster analysis is an *exploratory* tool, the amount of people in each cluster should be interpreted with care.

### ***The attachment frame***

The attachment frame is characterized by the importance given to personal attachment and to safeguarding the cultural heritage values of the area (Table 7.4). The relative importance of nature differentiates this frame especially from the rurality frame. Before implementation, 31% of the people adhering to this frame oppose restoration plans (Figure 7.6). After implementation of the plans, attitudes towards restoration are much more positive and only 11% of the residents remain critical of river restoration.

Even though the focus in this frame is on personal attachment, landscape quality is framed much broader than in the other frames. Not only sense of place, but also scenic beauty, intrinsic value, and risk perception contribute significantly to the perceived overall quality of the area (Table 7.5). Opposition to river restoration is driven by the fear that cultural heritage and agricultural function will be lost, and that the floodplains will no longer be accessible if restoration is implemented (Table 7.5). People using the attachment frame are often born in the area. Education is slightly lower than average and 20% are or have been a farmer. Age and gender did not differ significantly between any of the frames (Table 7.6).

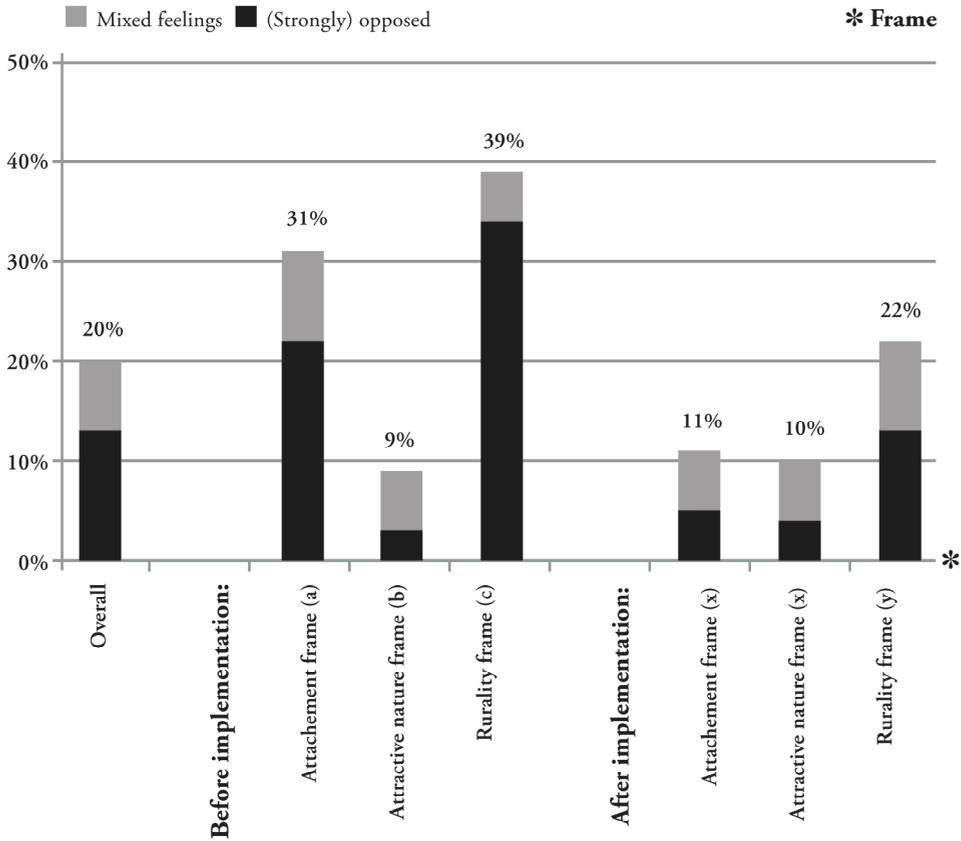


Figure 7.6. Percentage of respondents not in favour (“(strongly) opposed” and “mixed feelings”) of river restoration for each frame, before (Wamel) and after (Gameren) river restoration, based on a five-point attitude scale. Different letters (a-b or x-y) between parentheses relate to significant differences between frames (a-b: before implementation; x-y: after implementation;  $p < .01$ ).

**The attractive nature frame**

The attractive nature frame can be characterized by the importance given to the natural character of the floodplain. Protection and/or enhancement of the natural value and the attractiveness of the living environment are core elements of this frame. Other meanings, such as personal attachment, agricultural function, rurality, and cultural heritage are significantly less important, especially compared to the other frames (Table 7.4).

For people adhering to this frame, landscape quality is above all determined by scenic beauty and the intrinsic value of nature. Personal attachment and safety are not important and consequently do not contribute significantly to people’s evaluation of

changes in the floodplain (Table 7.5). Support for river restoration is very high in this group (only nine per cent oppose such plans (Figure 7.6).

Adherents to this frame can be characterized as highly educated newcomers, born outside the area. Hardly any farmers support this frame (Table 7.6).

***The rurality frame***

The rurality frame focuses especially on the rurality of the area and the agricultural functions of the floodplains. The meaning of the floodplain as an attractive living space is not very important in this frame. The natural value is less important than in the other frames (Table 7.4).

People endorsing this view are an important source of resistance to floodplain restoration. Before restoration has taken place, 39% of the adherents oppose river restoration in their area (Figure 7.6). Opponents to floodplain restoration especially fear the loss of agricultural area and of historic elements (Table 7.5); they also fear that restoration may damage the beauty of the landscape. Their perception of the overall quality of the floodplains, and thus their view of the effects of river restoration, is based on scenic beauty and sense of place (Table 7.5).

People who were born in the area are particularly inclined to support this frame. Farmers are very well represented in this group (Table 7.6).

*Table 7.5. Differences between the frames in the relevance of qualities of the floodplain (A) and reasons for opposition (B).*

Characteristics	F (df=2)	Attachment frame (N=323)	Attractive nature frame (N=106)	Rurality frame (N=86)
<b>A) Relevance of qualities (β)</b>				
- scenic beauty		.49	.39	.36
- intrinsic value		.33	.30	n.s.
- sense of place		.31	n.s.	.29
- risk perception		-.22	n.s.	n.s.
		R <sup>2</sup> =.63	R <sup>2</sup> =.50	R <sup>2</sup> =.45
<b>B) Reasons for opposition</b>				
- loss of agricultural area	26.4***	13% <sup>ab</sup>	3% <sup>b</sup>	19% <sup>a</sup>
- loss of historic elements	10.1***	19% <sup>a</sup>	8% <sup>b</sup>	20% <sup>a</sup>
- less attractive landscape	7.4**	14% <sup>a</sup>	5% <sup>b</sup>	15% <sup>a</sup>
- lower accessibility of area	n.s.	16%	8%	14%
- less valuable nature	n.s.	3%	6%	6%

Percentages with different letters in superscript differ per column at p<.01

\*\* : p<.01

\*\*\* : p<.001

Table 7.6. Differences in socio-demographic characteristics of people adhering to the frames ( $p < .01$ ).

Characteristics	F (df=2)	Attachment frame	Attractive nature frame	Rurality Frame
Education	6.0**			
-Low		39% <sup>a</sup>	21% <sup>b</sup>	39% <sup>a</sup>
-Medium/High		61% <sup>a</sup>	79% <sup>b</sup>	61% <sup>a</sup>
Born in area	36.8***	69% <sup>a</sup>	28% <sup>b</sup>	75% <sup>a</sup>
Percentage of farmers (present or former)	9.3***	19% <sup>a</sup>	8% <sup>a</sup>	33% <sup>b</sup>
Age	n.s.			
Gender	n.s.			

Percentages with unequal letters in superscript differ per column at  $p < .01$

\*\* :  $p < .01$

\*\*\* :  $p < .001$

### 7.3.4 The framing of river restoration during socio-political conflicts

The results of the questionnaire show that at a general level, support for river restoration is high (80%; Figure 7.6). Therefore, if we look at the results of the questionnaire on this general level, we cannot explain why many restoration projects have provoked protests. To improve the understanding of social protests, we need to focus on the different frames and framing strategies used to define river restoration projects. Therefore, we also conducted qualitative interviews with local residents. As described in the methods section, 25 interviews were coded on one of the three frames described above: the attachment frame (10 interviews), the attractive nature frame (12), and the rurality frame (3). The next section focuses on differences in the framing of river restoration between the three groups.

#### *The attachment frame*

The typical respondent who views river restoration through an attachment frame is a man, with an average age of 55 years. He has lived all his life near the floodplains and feels very involved in the plans regarding the floodplains. Supporters of this frame show diverse attitudes on river restoration. Before implementation of the restoration plans (in the Rosandepolder), many respondents are quite critical. After implementation (in Gameren), many have adopted a more positive attitude.

Before restoration, many people oppose some or all of the elements of the plans. They feel attached to the floodplain and think any changes will be detrimental to the beauty of the area. All feel that a lot may be lost and are uncertain about the gains that may be won. Positive attitudes towards river restoration are mostly substantiated by

arguments about expected improvements in the landscape quality of the area that do not harm existing qualities.

Respondents who oppose restoration substantiate their attitude with arguments related to possible negative effects on landscape quality. They fear the loss of many typical characteristics of the area. Respondents reject the safety frame the Directorate General uses to promote river restoration and dispute the effectiveness of the proposed measures. The Directorate General's claim that river restoration would decrease the risk of flooding significantly because of a decrease in water level of ten cm is particularly contested. Respondents use arguments such as the following: *"the plans would not achieve a 10 cm drop in water levels"*, *"10 cm would not be enough to ensure safety"*, and *"more effective and efficient results could be achieved by measures taken upstream, especially in Germany"*.

Many of the arguments residents use are based on those of the local protest group. Not only do they use the same arguments, several respondents explicitly refer to the protest group as a source of information.

*"Only the WOU [the protest group], gives reliable figures on the effects of the measures. It clearly shows that the Directorate General's proposals are not very effective" (R11)*

A third type of argument against river restoration is related to the type of nature that is to be restored. The Directorate General promotes a wilderness image of nature and stresses the opportunities to improve biodiversity through restoration of high dynamic ecosystems without human interference. However, several respondents refer to other, more Arcadian images of nature. They argue that cultivation of natural areas increases both biodiversity and scenic beauty. According to these respondents, current plans focusing on dynamic riverine ecosystems will not enhance but diminish the biodiversity in the area; especially affecting grazing and nesting opportunities for birds. Ecological restoration may also threaten the scenic beauty of the area, as most of these people prefer managed and well groomed landscapes to wilder, more natural landscapes.

Surprisingly, many respondents near the already restored floodplain of Gameren have changed their opinions after the restoration process has been finalized. Many were initially opposed to the restoration and feared all kinds of negative impacts on the floodplain they had known for so long. However, after implementation they say they are positively surprised by the results. This respondent from Gameren is typical of the change in attitude:

*"When we heard that the area would be "returned to nature" we thought it would become a desolate and uncultivated mess. We were afraid of insects during summer. Fortunately, it turned out rather well. It has become a very well groomed area. (...) It was reassuring when*

*we heard that farmers from the village would be involved in the planning process. We felt their involvement would be a kind of a guarantee that the changes would not be too drastic.” (G5)*

### ***The attractive nature frame***

The typical respondent in this frame is a woman. Average age is 44 years. Although she has lived in the area for many years, she was not born here, but moved here with her family because of the scenic quality of nature and the peacefulness of the countryside. She has not been very much engaged in the discussions on river restoration and gets most of her information on the plans from the media or from the “talk in the street”. Eleven out of twelve respondents in this group are in favour of river restoration, both before as well as after implementation.

This group of respondents frames restoration mainly in relation to aesthetic and normative arguments: river restoration will improve scenic beauty and the natural value of the area. Furthermore, river restoration improves spaciousness, the visibility and especially the dynamics of the changing water levels of the river. The flooding of the floodplain, which occurs a few times a year, fascinates them. They appreciate experiencing the forces of nature and the “tininess of mankind”.

Several respondents argue that improvements in landscape quality are specifically related to the element of ecological restoration. They argue that the area will become “*much wilder, more desolate and thus more beautiful*”. They agree with the ecological arguments used by the Directorate General on the importance of improving biodiversity in the area.

Some respondents argue that the design of the restoration plans must respect the historical elements in order to maintain the sense of place as much as possible. As such, they agree with people adhering to the attachment frame. Where they differ, however, is in the importance they attach to conserving the sense of place. People adhering to the attractive nature frame often explicitly state that their concerns about loss of historic and cultural elements are less important than the expected positive impacts on scenic beauty and nature values.

As in the attachment frame, almost nobody argues in favour of river restoration based on safety arguments. Some respondents within this group even explicitly question the safety effects and argue that they only support the plans because of the inclusion of ecological restoration. According to these respondents, river restoration focusing only on safety is a waste of money.

### ***The rurality frame***

The typical supporter of the rurality frame is a man who was born in the area. His average age is 51. Two out of three respondents are farmers. One of them receives the newsletter from the protest group. They discuss river restoration mainly related to the negative effects it has on agriculture.

Opponents of river restoration in this frame do not only base their arguments on the agriculture impacts' they also contest the effectiveness of river restoration in improving safety. They argue that strengthening the dikes would be much more effective than river restoration.

A third type of argument is related to different images of nature. Opponents do not usually question the importance of the natural or scenic beauty of the area, but rather question whether the plan will actually improve these values. As such, they refer to different images of nature than the Directorate General's wilderness image. They argue that nature needs to be taken care of. For them, the most beautiful natural places are those that are well managed. They also refer to the "typical Dutch floodplain", which has been managed by farmers for many centuries. Finally, they argue that agricultural meadows are much more profitable than wilderness for migrating birds and other wildlife.

## **7.4 Discussion, conclusions and practical implications**

### **7.4.1 The influence of framing processes on public support**

The present study focuses on the assessment of public attitudes to river restoration and on improving the understanding of opposition to it. Results suggest that looking at the perceived effects of river and floodplain restoration on the qualities of floodplains can be helpful to understand attitudes on restoration. However, in order to understand social conflicts related to river restoration, measurement of the outcomes needs to be complemented by a more dynamic type of research, focusing on the social processes of the framing of restoration plans.

The results of the questionnaire show that at a general level, support for river restoration is high. Eighty per cent of all residents support river restoration. This is in line with previous studies, which found that most people value the effects of river restoration, especially the improvement of scenic values and recreational opportunities in the area (Tunstall et al., 2000; Junker & Buchecker, 2008). While scenic value increases after river restoration, people's attachment to the area decreases. However, as place attachment is less important than scenic beauty for most residents, this negative effect is compensated for by the improvements in scenic beauty.

On a more detailed level, the study reproduces the positive relationship between perceived naturalness and variety and the perceived scenic beauty of the floodplains (Junker & Buchecker, 2008). River restoration also contributes to scenic value through the increase of the dynamics and visibility of the river and the unity of the area (Coeterier, 1996).

The results of the questionnaire also reveal that people may use different types of frames to give meaning to river restoration plans and that different frames are related to significant differences in attitudes to river restoration. Three frames have been described: the *attachment* frame, the *attractive nature* frame, and the *rurality* frame. Almost every respondent endorsing the attractive nature frame supports river restoration (only 9% oppose it). Opposition to river restoration is highest among people using a rurality frame (39% are opposed before river restoration is implemented). Although this group is a minority, it can be a loud and influential minority that can generate massive public resistance to river restoration.

People using an attachment frame are especially likely to reconsider negative opinions after restoration has been implemented. This relative flexibility suggests that these residents may hold a “place specific” attachment, that needs to be distinguished from a “conceptual” attachment (Ryan, 2005). Place specific attachment is related to a specific geographical place. Implementation of landscape changes in those areas does not significantly threaten people’s attachment to those places. Conceptual attachment, on the other hand, is tied to a specific type of landscape (e.g. large scale agricultural floodplains). To people holding this view, changing landscapes *will* result in a serious decrease of attachment. Ryan suggests that conceptual attachment is mainly found among professionals, volunteers in landscape maintenance and people with extensive knowledge of nature. Place specific attachment is found to be dominant among local residents (Ryan, 2005). It can be hypothesized that within the attachment frame, place specific attachment will be dominant, while in the rurality frame, concept attachment (to rural landscapes) will dominate. This deserves further study.

As already suggested by literature on framing (e.g. Lewicki & Gray, 2003), results of the qualitative interviews show that adding a more dynamic aspect to the analyses can help explain possible protests against river restoration. To improve the validity and relevance of the study, we used a mixed-method approach, combining qualitative and quantitative research methods. This combination allows for the evaluation of the perceived *effects* of river restoration and a description of the more dynamic *process* of the active framing of river restoration by local residents.

The qualitative phase of the study showed that in using different frames, residents refer to different arguments to demonstrate the positive or negative effects of river restoration. Those using an attachment frame focus especially on the importance of protecting cultural heritage and other typical aspects of traditional Dutch floodplains. Negative attitudes are substantiated by arguments related to the threat that river restoration poses to landscape identity. During the planning phase of river restoration, strong resistance exists among a substantial minority of people adhering to this frame (31% in Wamel). Interestingly, post-restoration experience in Gameren suggests that careful implementation can prevent many of these fears from becoming reality. After implementation, several people have changed their minds and in hindsight only 11%

still oppose river restoration. Strongest resistance to river restoration is expressed from the rurality frame, especially because of the expected loss of agricultural opportunities and rural character.

Similarities as well as differences exist in the framing of river restoration, especially between the attachment frame and the rurality frame. In line with Tunstall et al. (2000), this study shows that residents judge restoration processes differently from professional stakeholders. The local protest group in the Rosandepolder successfully contested the framing of the project initiator (the Directorate General). The Directorate General's focus on safety and biodiversity-related arguments, did not find much support among critical groups in the local community. The protest group itself was much more successful in framing river restoration as a threat to cultural heritage and in framing the safety measures as ineffective and thus irrelevant to the issue of river restoration. The *resonance* of the safety arguments used by the Directorate-General is thus not very high among most residents.

Within all frames used by the residents, references are made to the floodplains' scenic beauty and natural value. It is important to acknowledge that the *cultural resonance* (Benford and Snow, 2000) of such references depends on the type of natural environment people refer to. Results show that different groups refer to different images or "social representations" of nature (Hovardas & Stamou, 2006; Buijs et al., 2008b; Buijs, 2009a). When discussing the type of environment to be established in the floodplain, the Directorate General often refers to a "wilderness" representation of nature, focusing on the improvement of biodiversity through restoration of a very dynamic and autonomously developing ecosystem. Most residents using an attractive nature frame also refer to this representation of nature. As a result, arguments related to improving the scenic and natural value (as used by the Directorate General) fall on fertile ground within this group. However, all residents using a rurality frame and many residents using an attachment frame adhere to a more Arcadian view on nature (focusing more on cultivated landscapes and the co-management of natural areas; Swart et al., 2001). Consequently, these residents may criticise river restoration plans. As the wilderness view does not resonate among people with an attachment or rurality frame, arguments about biodiversity and the restoration of wild and unmanaged nature will not be very effective in motivate these groups to support river restoration plans.

#### 7.4.2 Limitations and practical implications

The current study compares attitudes and arguments before and after river restoration. However, as it was not possible to compare attitudes before and after a particular restoration project, we compared residents living near different floodplains. Although

we have maximized the comparability between the cases, focusing for example on small villages in a limited geographical area, the results of such comparisons are less robust than in a truly pre/post measure design. Consequently, interpretations of the results should be made carefully.

Because of unforeseen policy changes, the qualitative study had to focus on a different floodplain from the quantitative one. Nevertheless, results suggest that the comparability of both studies is high. Analyses of inter-coder reliability showed that the validity of the quantitatively extracted frames is sufficiently high to be extrapolated to the qualitative survey. In addition, the socio-demographic characteristics, as well as the content of the three frames, proved to be comparable between all studies. Taking these similarities, as well as the limitations of the study, into consideration, we feel that the results can be generalized to other river restoration projects in the Netherlands and beyond.

Practical implications of the study relate to possible threats to public support for river restoration projects, as well as to the opportunities for stakeholder participation in river restoration planning. As described in this paper, positive attitudes towards restoration are mainly related to the enhancement of scenic beauty. However, as the most recent trends in Dutch river management policy are to focus more on safety measures and less on ecological restoration (Ministry of V&W, 2007), this support may turn into resistance in future projects. If project initiators promote new river restoration projects only as enhancing safety, many residents may be susceptible to arguments expressed by opponents of river restoration, who argue that such plans are ineffective or inefficient.

The results of this study also show that because many local residents have positive attitudes towards river restoration, including them in the participation process can be a strategic asset for nature-oriented organizations. Both government nature conservation bodies and conservation NGOs may be able to develop strategic alliances with local citizens in order to ensure a broad focus on landscape quality (including ecological restoration) in river management policy. Including representatives of supportive local groups may counterbalance critical groups with land-related interests (Junker et al., 2007). Finally, such alliances may enhance planners' sensitivity to local residents' perceptions of landscape change. The design of landscape interventions should not only aim at meeting ecological goals, but also at increasing the aesthetic quality as perceived by ordinary citizens (Gobster et al., 2007). Including residents in the planning process can contribute to well-designed river restoration schemes, which not only improve safety and ecological quality, but also conserve or improve the perceptual and identity-related values of the area to local residents.

# **Social representations of nature and the framing of environmental issues**

**Submitted as:**

Buijs, A.E., B.J.M. Arts, B.H.M. Elands & J. Lengkeek. Social representations of nature and the framing of environmental issues. *Geoforum*.

## **8 Social representations of nature and the framing of environmental issues**

### **Abstract**

Frame analysis has been widely employed to understand environmental conflicts. Most of such studies emphasize the internal dynamics of the conflict and focus on how actors discursively struggle with each other in order to gain hegemony over the dominant discourse on the issue. This paper argues that through its focus on such volatile discourses, framing theory insufficiently relates to the broader, and more stable, cultural context in which framing efforts are situated. In order to strengthen the link between discursive framing strategies and the cultural background to such strategies, we suggest rethinking the concept of cultural resonance. This paper introduces social representations theory as a novel way to understand this cultural resonance. Based on an environmental dispute over the management of a national park, it empirically illustrates how contending stakeholders refer to different social representations of nature in the framing of local environmental conflicts. It shows how a local protest group is much more in touch with the views of the local community and is thus more successful in its framing of the dispute than the nature conservation agency. Whereas this protest group uses a wide range of elements from locally embedded social representations of nature to enhance the currency of its framing efforts, the nature conservation agency responsible for the management of the park refers to a much more limited range of representations. By making references only to the wilderness representation of nature, the cultural resonance of the agency's framing efforts remains limited to those residents who endorse this specific representation of nature. Consequently, the currency of its framing efforts among groups that endorse the inclusive or aesthetic representations of nature is not very high. The dynamics of framing strategies compared to the stability in the use of social representations is illustrated through an analysis of the influence of a participation process and the signing of a covenant between the contesting actors. This analysis shows that combining framing theory with social representations theory enables one to disentangle the volatile discourses in the framing of environmental disputes from the more stable cultural values and opinions on which this framing is based.

### **8.1 Introduction**

The protection of nature and biodiversity has become an important issue in public opinion. Many European and North American citizens see nature conservation as

both a moral obligation and a prerequisite for “the good life.” Nevertheless, many professionals in the field of nature and biodiversity management have encountered fierce local resistance to the implementation of well-elaborated nature conservation policies (Stoll-Kleemann, 2001). Both the establishment and the management of national parks have often resulted in conflicts with local residents (Hiedanpaa, 2002).

Many studies have focused on the substance of such conflicts, investigating the divergent values and beliefs of the contending parties (e.g. Stern & Dietz, 1994; Lindström et al., 2006; Knight, 2008). However, many studies have shown that these conflicts often develop a dynamics of their own. Even if only a minority of residents oppose the implementation of a policy, local protest groups can be very successful in influencing the issue and thus preventing the policy from being implemented (Buijs, 2009b). As such, stakeholders actively influence the conflict by, for example, debunking important arguments expressed by the opponent, using the media strategically, and negatively stereotyping other stakeholders (Lewicki & Gray, 2003).

This article focuses on how local conflicts over nature conservation strategies develop, and on the arguments that stakeholders use to influence the perception of such conflicts. In it, we adopt a framing perspective to understand the processes involved. Many framing studies mainly focus at the level of the conflict itself, studying the content of the frames and framing strategies. Other studies explicitly focus on possibilities to resolve the issue through reframing (Elliot et al., 2003). Most of these studies emphasize the internal dynamics of the conflict and focus on how actors struggle with each other in order to gain hegemony over the dominant discourse on the issue. They therefore pay only limited attention to how the outside world reacts to these framing strategies. In our view, because framing theory focuses on volatile discourses, it insufficiently relates to the broader, and more stable, cultural context in which framing efforts are situated. As a result, framing theories often have difficulty explaining why some framing strategies meet with favorable responses from the outside world, while others do not (Koopmans & Olzak, 2004).

In order to strengthen the link between discursive framing strategies and the cultural background to such strategies, we suggest rethinking the concept of cultural resonance, as introduced by Gamson and Modigliani (1989). It is our hypothesis that in “volatile” framing processes related to environmental conflicts, rather stable and culturally anchored perspectives on “nature as an object” play a role in constituting the issue and the conflict. To theorize about this, we use social representations theory, which studies how different social groups may develop different understandings of an object (in our case, “nature”) and how these understandings influence their communication about and behavior toward that object (Moscovici, 2000). By combining this theory with framing theory, we illuminate how stakeholders frame environmental conflicts and use culturally and materially anchored representations of nature in order to increase support for their specific frame. As such, we embed the

discursive focus of framing theory in the more stable background of cultural views on nature and the environment.

The following example illustrates the importance of embedding one's framing efforts in broader culture. The protection of wilderness areas is usually framed by nature conservation agencies in the United States as safeguarding biodiversity and the possibility to experience solitude. Also wilderness proponents in Alabama (USA) used to employ such arguments to frame the importance of protecting wilderness. However, in the conservative culture in this state, such framing of wilderness proved not very successful: Solitude and biodiversity protection did not resonate very well with the local culture. To bring their arguments more in line with the local values, wilderness proponents in Alabama decided to frame the importance of wilderness conservation differently, namely as the need to protect a "traditional practice" and to foster the cultural connection to land. Embedding the framing efforts in traditional culture proved much more successful than framing it as the importance of solitude experiences (Walton & Bailey, 2005). This paper suggests an approach to incorporate the cultural backdrop into such framing efforts in order to improve our understanding of the success of framing strategies on environmental issues.

The structure of this paper is as follows. In the following section, we briefly describe framing theory; here, the focus is on the importance of the cultural resonance of a frame. We then introduce social representations theory as a novel way to understand this cultural resonance. This theoretical approach is then applied to an environmental dispute over the management of a Dutch national park. Based on the analysis of this dispute, we empirically illustrate how two contending stakeholders refer to different social representations of nature in their framing of a local environmental conflict. The conclusion focuses on the added value of social representations theory in grounding framing activities in practices that are locally and materially based.

## **8.2 Framing and social representations**

### **8.2.1 The framing of environmental conflicts**

Conflicts can be described as "disputes in which contending parties hold conflicting frames" (Schön & Rein, 1994, p. 23). Schön and Rein invite us to consider a frame as a story, viz. the story that stakeholders tell about the conflict. Each frame tells a different story and constructs a different view on the issue. These stories or frames determine what is at stake, what is regarded as facts, and which arguments, events, and experiences are considered relevant for understanding the issue.

A frame is often defined as “a central organizing idea for making sense of relevant events and suggesting what is at issue” (Gamson, 1992). The process of framing can then be defined as the discursive process in which actors try to influence the interpretation of an issue by assigning specific meanings to that issue. It is a deliberate and social process in which different actors compete for control over the dominant frame (Eder, 1996). In recent years, the framing perspective has been extensively used to study environmental issues (Eder, 1996; Kaufman & Smith, 1999; Lewicki & Gray, 2003; Gray, 2004; Soini & Aakkula, 2007; Shmueli, 2008).

The framing of environmental conflicts often comprises at least three elements: the substance of the conflict, the relationship between the actors (related to the identity of themselves and that of their opponents), and the procedure to cope with the divergent views (Daniels & Walker, 1997; see also Lewicki & Gray, 2003; Shmueli, 2008).

The level of analysis in most framing studies is usually restricted to the contending stakeholders in the conflict, without much attention being paid to the persuasiveness of the framing strategies in the outside world. The resonance of the propagated frames in the broader community is usually not examined. At this point, input from the study of social movement organizations can be enriching. These studies focus on, for example, the importance of the “cultural resonance” of framing strategies (e.g. Benford & Snow, 2000). Social movement research that focuses on the proliferation of contested frames has shown that the cultural resonance of any given frame is an important determinant of the success of that frame (Gamson & Modigliani, 1989). Cultural resonance exists when the content of a frame is congruent with a specific culture or subculture. For a frame to be accepted by a substantial number of people, it has to “resonate” with important cultural elements of that culture. Cultural resonance “increases the appeal of a frame by making it appear natural and familiar” (Gamson, 1992, p. 135). According to Benford and Snow (2000), the cultural resonance of a frame depends on the centrality or salience of the beliefs and values, the resonance with personal, everyday experiences, and the extent to which the framing resonates with the dominant storylines or myths.

These studies lead us to conclude that the cultural context in which an environmental frame is articulated is an essential ingredient if framing efforts are to be successful. Only frames that resonate with generally accepted conceptualizations of nature and the environment will be adopted by the general public. Furthermore, this cultural context is both group and time specific. A frame that is successful for one social actor at a given time, need not be successful for other actors or at other times (see also D'Anjou & Van Male, 1998 for a discussion on the temporal dynamics of frames).

### 8.2.2 Social representations of nature

To investigate the cultural resonance of framing efforts, we propose linking framing theory to the theory of social representations (Moscovici, 1961/1976). The theory of social representations is widely employed in rural studies, and often uses “the rural idyll” to describe rurality (Halfacree, 1993). The theory explicitly acknowledges the group and time dependency of cultural systems of objects and meanings. As such, it is well equipped to embed framing practices in local cultures. This study is about a local controversy over nature conservation, and therefore our focus is especially on social representations of nature.

The theory of social representations is a social psychological theory that focuses on the content and production of common sense, that is, on how people understand the world around them and on the meanings they attach to that world. The theory describes how social groups develop common sense knowledge (or ‘practical knowledge’ or ‘folk knowledge’ Moscovici, 2000). Social representations can be defined as “the collective elaboration of an object by the community for the purpose of behaving and communicating” (Wagner et al., 1999, p. 96). They function as a resource for people’s opinions and actions, and facilitate communication by presenting a more or less commonly shared set of representations.

Social representations of nature are not produced individually in our personal encounters with nature or through a process of perception and interpretation; rather, they are produced through interpersonal communication, that is, during our contacts with other people and institutions – such as the media, nature protection organizations, and nature policy practices – and with nature itself (Moscovici, 2000). As such, social representations are consensual representations. Through communication, groups develop their own social representations of nature (Gervais, 1997).

Social representations of nature can be conceptualized as comprising three types of elements (cf. Keulartz et al., 2004). The normative elements consist of the values and value orientations related to nature, the cognitive dimension relates to the beliefs about nature, and the expressive dimension relates to the emotional aspects of nature, including the experience of beauty. Thus, a social representation of nature is the consensually agreed normative, cognitive, and expressive meanings of nature and the natural environment that are held by a specific social group.

The concept of social representations has recently been used to describe the comprehensive nature of lay people’s ideas about nature and the environment. For example, Hovardas and Stamou (2006) investigated the social representations of nature, wildlife, and landscape, while Buijs and colleagues (2008b) focused on the social representations of nature and biodiversity.

Combining frame analysis with social representations theory adds value in several ways. First, incorporating social representations relates the substance of stakeholders' framing efforts to broader cultural trends in the relevant communities. It enables one to investigate how actors refer to the dominant values and views of the community, and how the substance of their framing resonates with these values and views. As such, it anchors framing processes in local practices, that is, in the doings and sayings of people as well as in the objects to which they relate (Schatzki & Knorr Cetina, 2001; Reckwitz, 2002). Second, while frame analysis tends to focus on issues as "social constructs", social representations theory adds the "material basis" of locally framed environmental issues and conflicts (e.g. "nature as an object"). Social representations theory offers a "mild" version of social constructivism (Wagner, 1998). Although cultural systems of meaning are considered key elements for understanding environmental conflict, the material basis of local practices is also to be included. Hence, conflicts are not to be conceptualized as fully discursive in nature, but are also to be embedded in local practices and cultural meaning systems. We feel more at ease with this "thin" social constructivism than with its "thick" relatives. As such, we agree with what Halfacree (Halfacree, 1993, p. 31) says about the relationship between social representations and discursive actions: While social representations are the more stable cultural background to framing strategies, "they are drawn upon in a specific, context-dependent and partial manner, in order to pursue discursive actions".

### 8.3 Study site

The study was conducted in the Drents Friese Wold National Park (hereafter "the park"), which is situated in the north-eastern part of the Netherlands and is typical of national parks in this part of the country. It was designated a national park in 2000 and is also part of Natura 2000 (an ecological network of protected areas in the European Union). The park embraces 6100 ha of forests, moorland, drift sand, brooks, and meadows. The landscape is a result of the interplay between humans and nature. The moorland and the drift sand areas are the outcome of the degradation caused by the intensive grazing that occurred here until the beginning of the 19<sup>th</sup> century. Much of the area was then converted into forest for the production of timber. Most farmers in the area have recently been bought out by nature conservation agencies, and agricultural meadows are now being restored into wetlands and meandering brooks. The park is sparsely inhabited, although a few old farms and houses, and several campsites and bungalow parks, are located in it. When we speak of "residents" in this article, we mainly refer to the inhabitants of the surrounding villages, whose economic and social viability is heavily dependent on tourism.



Figure 8.1. Drents Friese Wold National Park

Almost the entire park is owned by nature conservation agencies; approximately two thirds (4150 ha) of it is in the hands of the National Forest Service (NFS). A consultation body was set up shortly after the park was established. This body comprises representatives of all the land-owning nature conservation agencies, various governmental bodies (e.g. municipalities), and representatives of farmers and the tourism industry. In 2003, the consultation body agreed on a joint management plan that is mainly based on the management plans of the individual nature conservation agencies that together own and manage the park. The management plan for the area focuses especially on promoting biodiversity through the application of a “hands-off” strategy. After various nature restoration projects have been carried out, the area will be allowed to develop according to natural processes. This focus on biodiversity and natural processes is one of the main sources of conflict between nature conservation agencies, farmers, and local residents (Buijs et al., 2008b).

The Woodland Giant Foundation (WG) was established in 2005 as a local protest group. The WG objects to several elements in the management of the park, most notably the felling of significant numbers of trees in order to extend the area of drift sand, the deracination of non-native species (e.g. American oak), and the nature restoration effort on former agricultural lands. The WG has collected the signatures of almost 9000 local residents and tourists who support the group’s objections, and has also attracted significant local and national media coverage.

After the first round of focus group discussions was held in 2005, the dispute between the NFS and the WG escalated even further. Especially after the WG approached members of the Dutch parliament, the NFS started to suffer negative consequences of the WG's framing strategies and feared losing further public support. The NFS subsequently contacted the WG to discuss possible solutions to the conflict. In 2006, both parties met several times to discuss the dispute, and this resulted in the signing of a covenant. The main innovation in this covenant is the establishment of a "coniferous forest reserve," in which no trees will be felled.

## 8.4 Methods

We conducted focus group discussions and individual interviews with representatives of the NFS and the WG and with local residents. Focus group discussions stimulate exchanges between participants, and are very suited to analyze the framing process as a communicative process in which actors engage in the joint construction of meaning. In total, 49 people participated in the research. We also collected and analyzed 127 documents related to the conflict that had been published between 2003 and 2007; these documents included management plans, letters to local newspapers, and promotional leaflets from the NFS and the WG (referred to in the text as D-1 through D-127).

We used multiple methods to study the conflict. Through focus group discussions with local residents (with the exclusion of WG members), we conceptualized the social representations of nature circulating in Dutch society into more specific representations of the local community. This resulted in the description of three different local representations of nature (see Table 8.2; in the result section, we refer to these focus groups as R-1 through R-4). Focus group discussions with representatives and sympathizers of the WG (who were selected with the help of the foundation's secretary) concentrated on the framing of the dispute by the WG and the references made to social representations of nature to underpin its framing strategies (referred to as WG-1 through WG-3). Furthermore, we analyzed 53 documents produced by the WG (letters to newspapers, leaflets, posters, official reactions to governmental bodies). Finally, we conducted eight interviews with representatives of the three most important nature conservation agencies, the chair of the consultation body, and representatives of the municipalities. The interviews with the NFS (referred to as NFS-1 and NFS-2) were used to understand its framing of the dispute and the social representations of nature it uses to substantiate its frames. We also analyzed 24 documents produced by and the website of the NFS.

The first round of focus groups and interviews was conducted in the spring of 2005. Shortly afterwards, a participation process started and the covenant was signed. This inspired us to organize a second round of data collection, which we carried out in the fall of 2007. This longitudinal design allowed us to capture the dynamics of the framing process and to investigate the influence of the participation process on framing strategies and the use of social representations of nature. All participants in the first round of focus group discussions were asked to participate in the second round. Ten respondents had moved to other areas of the country or were unwilling to participate for a second time.

All focus group discussions and interviews were digitally recorded and transcribed verbatim. The transcriptions were first coded substantively, based on the empirical data and using the broad categories discussed. As a second step, these substantive codes were, where possible, related to theoretical concepts, such as “boundary of nature” and “cultural resonance” (cf. Strauss & Corbin, 1990).

In presenting our results, we start by providing an account of how the NFS and the WG frame the conflict over the management of the park. Subsequently, we summarize the dominant social representations of nature that can be distinguished among the local community. We then describe how both actors refer to these representations in order to enhance the support for their specific framing of the conflict. Finally, we compare the stability and dynamics of how actors frame the conflict in general, and how they refer to specific social representations of nature in particular.

## **8.5 The framing of the conflict**

The two dominant stakeholders in the conflict over the management of the park are the NFS – which owns nearly two thirds of the park – and the WG. These stakeholders tell very different stories about the conflict; in other words, they frame the conflict very differently. This framing can be witnessed in their public actions and own publications, as well as in our interviews and focus groups. As described in the introduction, this framing can be described as different stories on the substance of the conflict, the relationship between actors (related to identity of themselves and their opponents), and the suggested procedure to cope with divergent views.

Table 8.1. Framing of the conflict by the National Forest Service and by the Woodland Giant Foundation

Topics	National Forest Service (NFS)	The Woodland Giant (WG)
Summary	Achievement of set ecological goals through implementation of scientific knowledge.	There are divergent views on the management of the park and thus local residents need to be involved.
<b>Substance</b>		
Social representations	Moral responsibility to protect nature.  Predominantly wilderness representation of nature.  Focus on cognitive and normative elements.	Moral responsibility to protect nature.  Predominantly inclusive and aesthetic representation of nature.  Focus on normative and expressive elements.
Knowledge	Ecological knowledge suggests which measures need to be taken (expert knowledge). Mono-paradigmatic.	Knowledge is contested and sometimes insufficient; knowledge as ideology: different ecological paradigms.
<b>Relationship</b>		
Self-identity	NFS is responsible for achieving formal biodiversity-related goals (e.g. Natura 2000).  NFS has the expertise required to achieve these goals.	WG is representative of local residents. Represents the interests of local residents and economic stakeholders (farmers and the tourism industry).
Characterization others (stereotyping)	NFS=owner of the park WG are outsiders: recently arrived urban dwellers, acting only on emotions.	National park=local community's backyard. NFS are outsiders: external technicians implementing old-fashioned policies They lie and are arrogant.
<b>Procedure</b>		
Participation	General goals decided through representational democracy. Experts apply ecological knowledge.	Democratic discussion needed on values and goals. Participatory democracy.

### 8.5.1 Framing by the National Forest Service

The NFS frames the substance of the conflict as a dispute over the proper means to achieve specified goals (Table 8.1). These goals especially relate to protecting and enhancing biodiversity in the area. According to the NFS, the goals for the park are laid down in formal regulations (such as Natura 2000 and the park's formalized management and design plan) and therefore need no further discussion – ignoring the fact that the NFS itself formulated many of these goals, for example, in the management and design plan. The NFS sees its task in the park as that of developing and implementing suitable measures to achieve these goals, especially those related to biodiversity protection. The biodiversity can best be protected by enhancing the area's autonomous ecological processes.

Related to the decision-making procedure, the NFS frames itself as an organization that is morally responsible both for protecting the biodiversity in the area and for achieving the goals established by European or national policy. The NFS feels that it represents the interest of nature and has been delegated by society to manage the area accordingly. Furthermore, as the owner of the land, it considers itself the legitimate actor to implement the measures it deems necessary to comply with nature conservation policies as democratically agreed upon at the national and the European level. Nevertheless, it is willing to make some “cosmetic adjustments” (NFS-1) in order to fulfill a limited number of individual wishes. Although the implementation of policy is discussed with institutionalized stakeholders (e.g. farmers' organizations and the tourism industry), the need to involve local residents in the process is framed as the need to *inform* residents about the plans for and the results of its management of the park. This is done by, for example, organizing excursions during which foresters point out the beauty of the park and the success of the conservation efforts.

In the framing of the relationship with its opponents, the NFS characterizes the WG as composed of “outsiders” – a group of incomers who are not representative of the local community. Furthermore, it frames the WG as incapable of understanding ecological processes and as grounding its opposition on emotions rather than scientific facts.

### 8.5.2 Framing by the Woodland Giant

Compared to the NFS, the framing by the WG comprises elements that are much more eclectic and diverse. Some elements are closely related to the mission statement of the protest group, while others explicitly react to the framing by the NFS.

Although the WG endorses the importance of protecting the park, the substance of the issue is framed as a conflict over divergent values. These divergent values

especially relate to the type of nature that should be protected. How important is scenic beauty and how important is the personal attachment of local residents to certain places in the park? Furthermore, the WG has explicitly challenged the ecological knowledge used by the NFS to achieve these goals. For example, it defines knowledge as ideology: *“It is not just an ecological theory, it is also an ideology”* (WG-2). Referring to other schools in the ecological sciences as well as to other scientists, the WG suggests that there are different paradigms of how to protect biodiversity. It frames the current paradigm – which focuses on autonomous processes and the implementation of nature restoration in order to re-establish the abiotic conditions that existed before humans arrived in the area – as “outdated”: *“Also among ecologists, there are incredible discussions about these strategies... For example, a professor of ecology from Groningen University wrote to us saying that he agrees with our claims on this”* (WG-1). Finally, the WG claims that several of the measures taken by the NFS have been unsuccessful.

There is also great diversity between the contesting actors concerning the framing of relationship and identity. While the NFS frames itself as the representative of “nature” and as the local executor of national policy, the WG frames itself as the representative of the local community. It substantiates this claim with a 9000-signature petition against the extensive logging that is part of the plan to diversify the forest and expand the area of drift sand. The NFS is stereotyped as a group of arrogant outsiders who do not take very seriously the divergent values of the local community. Furthermore, the NFS is dismissed as a group of hobbyists who want to implement measures based on outdated ideologies, as they state in a letter to the local newspaper: *“A national park should not be managed as an experimental playground for a small group of hobbyists. Furthermore, this group of ecologists works with theories that are contested by their own colleagues”* (WG-D17). Framing the park as the “backyard” of the local community, the WG calls for a more democratic procedure in which local residents’ views on the park are taken into consideration.

## 8.6 Social representations of nature in the local community

To chart the social representations of nature held by the residents who live near the park, we analyzed to what extent the classification of general Dutch social representations can be recognized among them (based on Buijs, 2009a). The results show that three out of five representations are clearly held by the local community, namely the wilderness, the inclusive, and the aesthetic representation of nature (see Table 8.2). The autonomy representation could not be identified at all and the functional representation was visible to only a limited extent. For reasons of clarity,

neither was taken into account. Consequently, our focus here is on the three representations that could be distinguished.

The importance of nature conservation is generally acknowledged. As such, local residents hardly ever dispute the need to protect the area, and most acknowledge the usefulness of the establishment of a national park. However, the moral foundation of nature conservation differs between ecocentric, biocentric, and weak anthropocentric values. Although the ecocentric and anthropocentric values are well known, the biocentric value is not. While the ecocentric value of nature focuses on holistic concepts like “habitats” or species, the biocentric value of nature focuses on the individual well-being of plants and animals. Consequently, the vitality of life and the value of protecting individual living beings outweigh the value of maintaining species or ecosystems (see also Buijs, 2009a). Next to these general values of nature, the normative dimension consists of people’s value orientations toward nature management. Residents near the study area express different goals for management, related to a focus either on protecting the autonomy of natural processes or on more active management strategies oriented toward, for instance, the protection of landscape.

The cognitive dimension of social representations of nature consists of the boundaries people use to conceptualize nature (i.e. what is and what is not considered nature), as well as of several beliefs about natural processes. Examples of such beliefs are those about whether nature is truly scientifically intelligible and whether the natural state of nature is one of balance (stasis) or of flux (a continuous changing, unpredictable system). Finally, cognitive representational elements may relate to beliefs about the fragility of nature.

The third, and final, dimension of social representations of nature consists of the emotions evoked by nature. One of the most important emotions is the experience of beauty. The diversity of landscapes is often considered one of the prime characteristics of a beautiful landscape. However, views may differ significantly concerning the beauty of and the preference for well-groomed and managed landscapes versus wild and uncultivated landscapes. Additionally, this expressive dimension consists of feelings of attachment to specific natural areas. Especially residents often feel an emotional bond with the landscape surrounding their home towns (see also Stedman, 2002).

Table 8.2. The dominant social representations of nature held by the local residents

Social representations of nature	Normative elements		Cognitive elements	Expressive elements	
	Value of nature	Value orientation Management focus	Boundary of nature	Dominant beliefs about nature	Emotions evoked by nature
Wilderness	Ecocentric	Natural processes  No management	Narrow (only purely autonomous life forms)	Nature as fragile  Scientifically intelligible	Beauty of nature: <i>Uncultivated</i>  Awe  Fascination
Inclusive	Biocentric	Limited management  Management focused on nature	Wide (every life form)	Nature as fragile  Nature as dynamic  Nature unpredictable	Beauty of nature: <i>Uncultivated + well-groomed</i>  Fascination  Vitality
Aesthetic	Weak anthropocentric	Landscape management	Moderately wide (non-cultural)	Nature as fragile  Balance of nature	Beauty of nature: <i>Well-groomed</i>  Sensory experiences  Diversity of landscape  Attachment

## 8.7 The use of social representations of nature to substantiate framing efforts

This section describes how actors refer in their framing of the conflict to the dominant social representations of nature in the local community described above. It shows how the substance of the framing is to a great extent based on the representations of nature. Both actors use references to locally dominant representations of nature to enhance the cultural resonance of their framing activities. The elements to which the NFS and the WG refer are summarized in Table 8.3. This table describes which elements from local representations of nature (as summarized in Table 8.2) are used by the two contending actors in their communication on the management of the park.

### 8.7.1 National Forest Service

To substantiate the framing of the management of the park as *“answering to the moral obligation to protect nature”* (D-57), the NFS refers almost exclusively to the ecocentric values of nature. This moral obligation is translated into an obligation to protect endangered species. To protect these species, certain habitats need to be optimized or restored. Moreover, the protection of these species is best served by allowing nature to develop as autonomously as possible. References to anthropocentric values of nature are made only in order to criticize arguments put forward by the WG; for example: *“This is one of the few places where economic values are subordinate to ecological values”* (NFS-2).

In its framing strategies, the NFS refers to different and conflicting value orientations regarding nature management. It refers to the need to strengthen the influence of natural processes. Humans should not interfere in these processes: *“We think the autonomous process is more important than protecting specific species”* (NFS-2). But it also refers to the need to actively manage nature (to a limited extent) in order to enhance biodiversity in the area: *“Our management, comprising intensive mowing and the removal of the top soil, has already proven successful. Rare species are starting to return”* (D-121). Although the references to ecocentric values and management focus on natural processes resonate among some groups in the local community (especially the newcomers), they do not resonate very well among the more critical residents.

Table 8.3. The different elements of social representations of nature used by the National Forest Service and the Woodland Giant in their framing of the conflict

Actor	Origin of element	Normative elements		Cognitive elements		Expressive elements
		Values of nature	Management focused on	Boundaries of nature	Beliefs about nature	Emotions evoked by nature
National Forest Service	Wilderness representation	Ecocentric	Natural processes	Narrow definition	Nature scientifically intelligible Nature as fragile	Beauty: <i>uncultivated</i>
	Inclusive representation	-	Limited management	-	Nature as dynamic	-
	Aesthetic representation	-	-	-	-	Diversity of landscape
The Woodland Giant	Wilderness representation	-	Natural processes	-	-	-
	Inclusive representation	Biocentric	Limited management	Wide definition	Nature as unpredictable Nature as dynamic	Vitality
	Aesthetic representation	Anthropocentric	Landscape management	-	Nature as balanced	Diversity of landscape Beauty: <i>well-groomed</i> Attachment

References to the cognitive dimension often relate to the scientific arguments on which the management should be based. As such, nature is seen as scientifically intelligible. The NFS also frequently refers to narrow boundaries of nature to substantiate its frame, which is related to the autonomy of nature. Sometimes even the coniferous forest that dominates the landscape is excluded from its definition of nature, because it was planted in the past in order to produce timber. “*What counts as nature? We want to re-establish nature in this area by allowing autonomous processes to take over. [Negative intonation:] But other people sometimes even call coniferous forests nature!*” (NFS-1).

While the NFS often refers to the above-mentioned cognitive and normative elements of social representations, it usually refers only in a negative way to the expressive dimension. In the interviews, arguments related to the expressive dimension (e.g. beauty) were frequently dismissed as being “emotional” rather than “rational” or “scientific.” According to the NFS, the selection of specific measures should be based on ecological science, not on emotions or “subjective” considerations of beauty: *“What count as scenic or ugly landscapes is a matter on which I cannot base my decisions. Beauty is a matter of personal taste”* (NFS-2). However, in its leaflets about the area (D-1, D-5, D-9) and during the excursions it organizes, the NFS refers in a more positive way to the expressive elements of local people’s representations of nature. For example, it refers to the beauty and diversity of the area, and argues that the management by the NFS contributes to this beauty. Such references to scenic beauty are especially made in the framing of the need to deracinate certain sections of the forest: *“Everybody wants a more diverse forest. You have to intervene to make that happen”* (NFS-1).

The cultural resonance of the focus on cognitive arguments and the subsequent dismissal of expressive arguments among the local community is very low. People feel emotionally connected to the park and they want the beauty of it acknowledged and protected. This lack of cultural resonance of cognitive arguments is evinced by, for example, the discussion on the removal of non-native species from the area. The NFS has felled full-grown American oaks because scientific arguments suggest that they are a non-native species and might disturb natural processes. The local residents, however, consider the American oak one of the park’s most beautiful trees, and many of these oaks are scenically aligned along the old forest avenues. Not only the WG but also several residents refer to the aesthetic representation of nature to substantiate the need to respect the scenic quality of the area through maintaining these trees.

### 8.7.2 The Woodland Giant

Compared to the NFS, the WG refers to a much wider range of representational elements in its framing of the issue (Table 8.3). Most of these elements refer to either the inclusive or the aesthetic representation of nature as found among local residents; some also refer to the wilderness representation. References are frequently made to contrasting elements from different representations.

In its framing of the substance of the conflict, the WG most often refers to the expressive dimension of social representations of nature. By referring to the current beauty of the area and the diversity of the landscape, it criticizes the NFS for focusing exclusively on biodiversity, instead of on protecting the landscapes that are preferred by the local community. In an interview with the local newspaper, a representative of

the WG explicitly stated that the current management does not resonate well among the local community: *“A beautiful landscape is the most important. People don’t like those newly established wetlands, which are always wet and filled with weeds. They find it messy. They prefer nice green, straight fields, well cared for”* (D-53).

The WG also often refers to the normative dimensions of social representations of nature. First of all, it stresses the importance of nature conservation in general. To elaborate on the normative motives to protect nature, it refers to both biocentric and weak anthropocentric values. By referring to biocentric values, it contrasts the importance of reverence for individual life forms (especially trees) with the focus of the NFS on holistic ecocentric values: *“For me, trees are kind of sacred. How do they get it into their heads to just fell trees based on some vague [ecological] theory?”* (WG-1). In addition to these biocentric values, the WG also refers to more anthropocentric values: *“Then for whom do they manage the area? Only for these tiny plants. Not for us!”* (WG-2). These references often resonate well among local residents, many of whom are grieved to see healthy trees felled by the NFS.

A second aspect of the normative elements of social representations relates to the view on how natural areas should be managed. Although these views are mutually exclusive, the WG uses all possible views on the management of nature to make its case. It substantiates its framing of the issue by referring to maximizing natural processes, with only minimum interference by humans, and to the active management of natural areas that is centered on different (often conflicting) goals of such management, viz. biodiversity, scenic landscapes, and economic resources. For example, the WG refers to the need to actively manage nature in order to improve biodiversity *“Humans need to interfere, otherwise you won’t improve biodiversity. If you leave it alone, you only get brambles, stinging nettles and thistles. You get the highest diversity by actively managing natural areas”* (WG-2). Later on in this focus group discussion, the same respondent refers to the need to manage natural areas in order to improve scenic landscapes. *“Just like us, also the tourists prefer diversity of landscapes. They like the mixture of different vegetations and of open and closed areas. Due to the felling by the NFS, that diversity is under threat and tourists are starting to complain.”* (WG-2).

References to the third (i.e. cognitive) dimension of social representations of nature are rather limited. Some references are made to the need to use wide boundaries of the concept “nature,” boundaries that also embrace agricultural land. It thus rejects the narrow interpretation of nature by the NFS as only “autonomous nature.” In reaction to the framing by the NFS, the WG also questions the intelligibility of nature and the possibility to successfully predict natural processes.

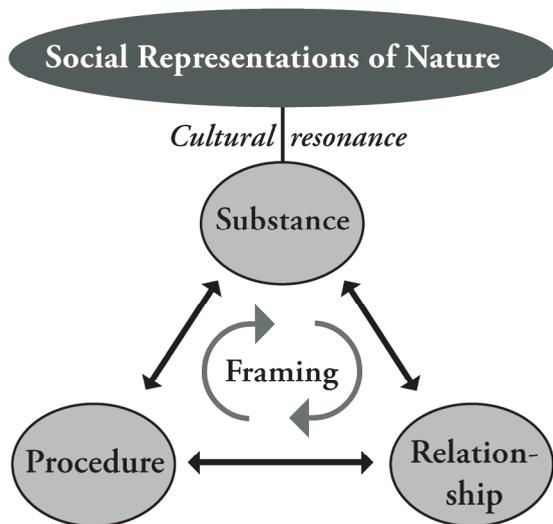


Figure 8.2. Cultural resonance and framing

## 8.8 The difference between framing and social representations: dynamics and stability

We have described how actors refer to social representations of nature in order to strengthen their framing of the issue. Looking at the dynamics of and changes in the framing, and how actors use social representations, may further clarify the added value of considering social representations of nature as building blocks for environmental framing processes. Our exploration is based on the effects of a participation process between the NFS and the WG that emerged after the first round of data collection. We wanted to find out whether the participation process and the subsequent signing of the covenant influenced the framing by both actors? Furthermore we wanted to find out whether this process influenced the social representations of nature actors refer to?

The answer to the first question is a clear “yes:” Both the framing of the relationship and the procedure changed significantly following the start of the participation process and the signing of the covenant. The framing of self-identity, and especially the stereotyping of the opposing party, changed. Before the participation process started, each group engaged in extensive negative stereotyping of the other group as being composed of incompetent and unreliable outsiders. The discussions during the five meetings seem to have increased the mutual understanding. For example, the WG no longer accuses NFS members of being arrogant outsiders, but has started to describe them as “the executors of policies external to their own

sphere of influence” (WG-3). Furthermore, the WG explicitly distances itself from prior characterizations of the NFS as “incompetent hobbyists.” The covenant explicitly states that “*the NFS carries out the policies as established by the Ministry of Agriculture, Nature and Food Security and does so in an expert and honorable way.*” This is in line with prior studies that show that participation processes in land use conflicts especially result in changes in the stereotyping of opponents (Shmueli, 2008).

As the covenant itself is a change of procedure, the framing of the procedure also changed considerably. Consequently, the WG can no longer state that local residents are not represented in the decision-making process.

Although the framing of relationship and procedure changed significantly after the signing of the covenant, the framing of the substance of the issue hardly changed. The participation process did not significantly influence how both actors use social representations of nature to underpin their framing of the substance of the conflict. Both before and after the covenant was signed, the WG referred to a much wider range of representations than the NFS. While the NFS kept referring to wilderness representations of nature in order to propagate its view on the management, the WG continued to refer to elements that mainly originate from inclusive and aesthetic representations of nature. Also the type of elements to which both actors refer remained constant. Both before and after the participation process, the framing by the NFS was grounded by references to normative and cognitive elements, while the framing by the WG remained based on expressive and normative elements. Although the process resulted in a covenant on the management of the area, the WG continued to argue that ecocentric values should be extended with biocentric and weak anthropocentric values, and that the cognitive (scientific) dimension as well as aesthetic judgments should be included in the decisions taken by the NFS. The answer to the second question raised in this section is thus clear: The participation process and the signing of the covenant did not noticeably change the use of social representation of nature by the contending stakeholders.

## 8.9 Conclusion

This paper argues for the added value of social representations theory to the theory of environmental framing. We showed how combining frame analyses with the analyses of social representations of nature can enhance our understanding of stakeholders’ efforts to relate their frames to dominant cultural views in the local community. Stakeholders endeavor to increase the support for their frame by relating environmental framing efforts to locally dominant social representations of nature.

This paper shows how in a conflict over the management of a Dutch national park, a local protest group (the Woodland Giant; WG) is much more in touch with the views among the local community and is thus more successful in its framing of a local environmental dispute than the nature conservation agency. The WG uses a wide range of elements from locally embedded social representations of nature to enhance the currency of its framing efforts. Although it sometimes refers to the “wilderness” representation, most references are to what have been called the “inclusive” and the “aesthetic” representation of nature. Particularly the normative and expressive elements of these representations are used as arguments to propagate the WG’s interpretation of the conflict.

The National Forest Service (NFS) refers to a more limited range of representational elements. First, although for local residents normative and expressive elements are the most important elements of social representations of nature, the NFS mostly uses cognitive arguments, although it does use some normative arguments. The normative arguments used by the NFS mostly refer to elements from the wilderness representations of nature. These references especially focus on the holistic interpretation of the ecocentric value of protecting biodiversity. However, these values resonate only among a small group of local residents, namely those who endorse the wilderness representation of nature. Through relating its framing efforts almost entirely to the wilderness representation of nature, the cultural resonance remains limited to residents who endorse this representation of nature; the currency of its framing efforts among groups that endorse the inclusive or aesthetic representation of nature is not very high.

Using the concept of social representations of nature, this article focused especially on the substantial factors of the conflict. However, the analysis shows that also relational and procedural factors have influenced the conflict (cf. Daniels & Walker, 1997). Most notably, the widespread feeling among members of the local community that their voices are not heard in the formal decision-making process, made them susceptible to the framing strategies by the local protest group. The protest group frames the relationship between residents and representatives of the NFS as an insider–outsider relationship. This framing is successful because residents do not feel represented by institutional actors like municipalities and organizations of farmers and tourism entrepreneurs that were involved in the regular decision-making process.

A participation process was initiated after the protest group had shown that it has considerable support among the local community. This eventually led to the signing of a joint covenant on the management of the park. This process has changed certain elements of both parties’ framing of the issue, most notably the negative framing of opponents. However, the use of social representations by both actors proved to be much more stable and showed hardly any change.

This result is in line with theoretical considerations about social representations and framing. Framing processes are usually depicted as purely discursive and very dynamic, whereas social representations are usually related to material objects and are considered relatively stable. This also relates to the paradigmatic positions of both theories, one being more and one being less “constructivist” in nature. The former excludes the material basis of cultural systems of meaning as philosophically relevant, whereas the latter includes it. However, by using both, we are able to observe change *and* continuity. The continuity lies in the social representations of nature, which hardly change over time, while the dynamics lies in the framing processes. Combining framing theory with social representations theory enables one to disentangle the volatile discourses in the framing of environmental disputes from the more stable cultural values and opinions on which the cultural resonance of a frame is based.

# 9 Conclusions and discussion



## 9 Conclusions and discussion

I have introduced social representations theory as a novel approach to study the comprehensive character of the human–nature relationship. Introducing the concept of social representations of nature expands on the study of individual values and beliefs as independent concepts. I have described how different aspects of people’s views on nature link together to form comprehensive social representations of nature, and investigated these representations in real-life practices. The representations of nature described in this thesis are thus not deduced from philosophical, ecological, or political typologies, but are grounded in empirical investigations into social practices. These investigations have shown that the public’s negative attitudes are usually based not on resistance to change or on a lack of knowledge about biodiversity, but on divergent views on nature management.

Using the concept of social representations of nature, I describe in section 9.1 the four social representations of nature that I have found to be dominant among the Dutch public. I suggest that experts tend to wrongfully disqualify the importance to lay people of the aesthetics and emotions related to the experience of nature, and describe how social representations of nature relate to people’s experience of nature and to socio-political issues concerning the management of protected areas. Furthermore, I compare the representations held by professionals and non-professionals, investigate their differences, and explore the consequences of these differences. For example, different interpretations of intrinsic value lead to very distinct views on the management of natural areas and may eventually result in disputes between site managers and local residents.

In section 9.2 I describe how social representations are related to the experience of nature and to the interpretation of environmental conflicts by local residents. In section 9.3, I reflect on the theoretical conclusions of this thesis. These conclusions relate to the dimensions that constitute a social representation, to the relationship between ecological and scenic aesthetics, and to the methodological challenges of investigating social representation. In section 9.4, I discuss the implications for environmental management and policy. I suggest several strategies to deal with divergent social representations of nature, and argue to focus on both the substantive and the procedural aspects of these differences. In addition, I suggest how the concept of social representations of nature may be used as a sensitizing concept. I end the chapter by emphasizing the importance of cultural sustainability as a prerequisite for the ecological sustainability of natural areas.

## 9.1 Social representations of nature

### Research question 1:

Which social representations of nature can be distinguished among the general public?

The empirical studies in this thesis have shown that various representations of nature exist among the Dutch public, and that these representations can be described as four comprehensive representations of nature. The description of these representations is based on the integration of the results of all five empirical studies in this thesis. The first two studies focused on the reflection of social representations in individual images (Chs. 4 and 5). Because images of nature are the mental dimension of social representations of nature, their content is based on social representations of nature (see Ch. 3). Consequently, studying these individual images enabled me to capture the most important elements of Dutch social representations of nature. I then used these elements as the starting point for three studies focusing on how social representations of nature are communicated in social practices related to ecological restoration and the management of a national park (Chs. 6, 7, and 8). Through focusing on the social level of representations, the content of the different elements of these representations could be further investigated.

Based on all five studies, I conclude that four comprehensive representations of nature are dominant among the Dutch public: the wilderness, the inclusive, the aesthetic, and the functional representation.<sup>1</sup> The representations described in this thesis show commonalities of elements shared by all, as well as differences between the representations. I present first the most important commonalities, and then the most important differences between the dominant social representations of nature in the Netherlands.

### *Commonalities within social representations of nature*

Most of the common elements in lay people's representations of nature can be traced back to the Romantic tradition that emerged at the end of the 18<sup>th</sup> century. This result

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<sup>1</sup> When investigating individual images of nature in Chapter 4, I initially distinguished a fifth image, the autonomy image. However, this image was not reproduced in the quantitative study in Chapter 5. Furthermore, the studies focusing on the social level of representations of nature (Chs. 6, 7, and 8) found only four representations of nature, and did not report an autonomy representation of nature. Therefore, I concluded that a classification into four different representations was the most valid classification of social representations of nature. Subsequent studies suggested that the autonomy image may have been a combination of elements from the wilderness and the inclusive representation.

confirms that the Romantic view is the basis of most, if not all, social representations of nature in the Netherlands. Consequently, a significant historical continuity can be witnessed. One of the most important common elements is the general appreciation of nature and natural areas, and the acknowledgement of the importance of nature conservation. The value of nature is especially based on the importance of experiencing the beauty of nature. Particularly the visual qualities of nature are very important; this is a result of the “picturesque” tradition in Western cultures. The feeling that nature provides the basis for life in general and contributes to human health, is also an example of the commonalities in the representations of nature as found in this thesis.

#### ***Four social representations of nature***

This description of commonalities is not very innovative and has been described in many other studies (Worster, 1985). However, the empirical results of this thesis show that if we want to understand how people relate to nature and nature management, we need to distinguish between *different* representations within the heritage of the Romantic view on nature.

I have distinguished four social representations of nature, namely the wilderness, the inclusive, the aesthetic, and the functional representation of nature (Table 9.1). Of these, the wilderness, the inclusive, and the aesthetic representations are strongly based on traditions of the Romantic view on nature; each of these representations, however, constitutes a different elaboration of this view.

This classification is not a theoretical one, but is firmly based on empirical investigations. The classification was developed in a grounded theory approach using interviews (Ch. 4) and focus groups (Ch. 6), and then further elaborated and refined through the application of both quantitative and qualitative methods. Most of these investigations focused on very concrete practices of nature experience and management, in order to maximize both their validity and their practical relevance. Together, this diversity of methods and grounding in social practices distinguishes this classification from other, more theoretically or philosophically based classifications (e.g. Van Amstel et al., 1988; De Groot, 2002; Van den Born, 2007; Hansen-Møller, 2009). Furthermore, the consequences for management practices related to landscape preferences and public support for specific management measures have been empirically demonstrated.

Table 9.1: Four representations of nature

	Normative		Cognitive	
	Values	View on management <i>(Value Orientation)</i>	Definition and boundaries of nature	Dominant beliefs
<b>Wilderness</b>	Intrinsic: Ecocentric	Hands-off	Narrow	Nature as fragile  Nature scientifically intelligible
<b>Inclusive</b>	Intrinsic: Biocentric	Limited management  <i>(Focus on plants and animals)</i>	Wide	Nature as fragile  Nature as dynamic  Nature as unpredictable
<b>Aesthetic</b>	Weak anthropo-centric	Limited management  <i>(Focus on scenic landscapes)</i>	Moderately wide	Nature as fragile  Nature in balance
<b>Functional</b>	Anthropo-centric	Active management of resources	Moderately wide	Nature as resilient  Nature as dynamic
<i>Shared elements</i>	<i>A general appreciation of nature and recognition of the importance of nature conservation.</i>		<i>Nature as providing health and the basis of human life.</i>	

***The wilderness representation***

The wilderness representation is based on the holistic (ecocentric) interpretation of the intrinsic value of nature. Ecocentric values focus on protecting important habitats for valuable species. It focuses on hands-off management that is aimed at safeguarding natural processes. The autonomy of nature is considered one of its most important features, and naturalness – interpreted as the absence of visible human influence – is regarded as an important attribute of nature. This value orientation is

related to a very narrow definition of nature, namely nature as “not cultured.” Only pristine nature is considered true nature.<sup>1</sup> Nevertheless, ecological sciences should be used to create the most favorable circumstance in order to protect or create true wilderness.

### ***The inclusive representation***

The inclusive representation is also based on the intrinsic value of nature. However, within the inclusive representation, this intrinsic value is interpreted in a more individualistic manner, in which intrinsic value is assigned only to individual living beings (“biocentrism”). According to such biocentric values, nature management should be evaluated on how it affects individual living beings, rather than abstract species or ecosystems. Chapter 4 and 6 has shown the impact that such interpretation has on people’s attitudes to nature management. Furthermore, the inclusive representation is oriented toward limited management related to the integrity and health of individual animals and trees. The boundaries of nature are less strict than in the wilderness representation. Nature is seen as fragile, but also as unpredictable and too complex to be fully grasped. This latter belief results in lower confidence in the ecological sciences to effectively understand and manage natural processes.

### ***The aesthetic representation***

The value of nature in the aesthetic representation is based not on its intrinsic value, but on weak anthropocentric values. Nature protection is important because of the amenity values of natural areas. People appreciate the aesthetics qualities and recreational opportunities offered by such areas. Consequently, management should focus on the preservation and enhancement of scenic landscapes, and particularly on the diversity of well-groomed and cultivated landscapes. Management is needed in order to maintain nature. The boundaries of nature are very wide and include rural areas and urban parks. Furthermore, the balance of nature is very important in this representation, as is the balance between natural and cultural processes.

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<sup>1</sup> Finding this value orientation in the Netherlands and the wilderness representation of nature associated with it, may seem somewhat strange in relation to the highly managed Dutch countryside. However, it highlights the highly symbolic nature of social representations of nature. Representations do not primarily reflect the physical landscape, but above all reflect the cultural longings, understanding, and emotions in a specific society. Moreover, it has been suggested that such idealization and iconization tend to occur especially in such highly urbanized societies as Dutch society (Van Koppen, 2002). This value orientation may be an example of the idealized and sometimes detached way in which many people in such societies experience nature. It may also relate to the dominance of wilderness views in Dutch ecological policy (Swart et al., 2001) and among the many Dutch nature conservation agencies that propagate hands-off strategies and use icons of wild and autonomous nature to set the standard for nature conservation strategies in the Netherlands.

### ***The functional representation***

The functional representation is the only truly anthropocentric representation. It focuses on the intensive management of nature, especially in relation to resource management. Nature is seen as a useful resource for, for example, agriculture or forestry. Natural areas themselves may produce such resources. Furthermore, humans should control natural areas in order to prevent, for instance, the spread of weeds or diseases from these areas, or mosquito plagues or other nuisances. Nature is considered to be resilient, and changes in nature are part of natural developments.

## **9.2 The role of social representations of nature in social practices**

### **Research question 2:**

Through which processes are social representations of nature developed and adjusted?

In Chapter 3, I argued that social representations of nature are developed and adjusted through social processes. Several chapters of this thesis empirically describe the social practices in which representations are developed and used. Chapter 6 explicitly focused on how such a relatively new concept as biodiversity was interpreted by a local community. Chapters 7 and 8 focused on the relationship between framing processes and social representations of nature.

### ***Representations anchored in physical nature, personal experiences and scientific concepts***

Focusing on social representations of biodiversity, Chapter 6 describes how the introduction of biodiversity as a benchmark for nature management was interpreted by local communities in Scotland, Germany, and the Netherlands, and what representation they developed of this scientific concept. This chapter showed that when confronted with biodiversity-based management, social groups develop elaborate representations of biodiversity. Although these representations are developed through communication, they are also based on (or “anchored in”) physical nature, personal experiences, and popular understandings of scientific theories.

The combination of physical phenomena and the sensorial experience of these phenomena are important sources for the anchoring of social representations of biodiversity and nature. For example, an increase or decrease in certain species after the implementation of management measures, influences people’s views on how to

manage nature. Chapter 6 showed how residents experienced an increase in the number of birds of prey and a decrease in the number of small game, such as pheasants, after ecological restoration. They then concluded that i) the number of small game had dropped as a result of ii) the presence of more birds of prey, which had increased in number due to a combination of iii) nature restoration and a ban on hunting. Based on observations of physical phenomena (the number and type of animals spotted), the local community concluded that the “balance of nature” in the area had been disturbed as a result of ecological restoration. Even if from an ecological point of view such reasoning may be flawed, such experiences and interpretations were discussed with other residents and, as a result, were incorporated into the group’s representation of nature.

The empirical studies in this thesis thus seem to confirm the theoretical premise in Chapter 3, namely that the material basis of people’s encounters with nature should be considered as a context in which social representations of nature are socially elaborated. Notions about the “embodiment” of nature (Macnaghten, 2003) as experienced through, for example, walking or gardening and the importance of “dwelling” (Ingold, 2000) are promising approaches to further investigating the influences of physical nature on social representations of nature.<sup>1</sup>

Social representations of nature and biodiversity are also anchored in scientific concepts and theory. For example, notions about “foodweb,” “fragility,” “resilience,” and “balance” are frequently expressed. Especially the often-assumed importance of ecological balance can be considered a direct reflection of scientific theories. Although the dominant paradigm in ecology has replaced the notion of nature in balance with that of nature in flux (Callicott, 2002), the former notion is still included in many social representations of biodiversity. This prevalence of balance-related notions might reflect the time span needed for concepts and theories in ecological thinking to reach educational curricula and popular scientific programs.

### ***Stability and dynamics***

There are different views on the stability of social representations of nature. While most “mentalist” approaches focus explicitly on the stability of representations (e.g. Buijs & Volker, 1997; Van den Berg et al., 2006; Van den Born, 2007), constructivist approaches argue that meanings of nature are constantly being reproduced in social

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<sup>1</sup> In his theoretical investigations into the sociology of nature, van Koppen has argued in a similar vein that the materiality of the world around us needs to be acknowledged in social theory. According to van Koppen, Habermas’s notion of lifeworld (which is defined in a quite similar way as social representations: “a frame of reference that is shared by a multitude of citizens and that fulfils a crucial role in communication” (Van Koppen, 2002, p. 258)) should be based not only on linguistic interactions, but also on non-linguistic interactions, related to, for example, physical care for or aesthetic sensibility to nature.

interaction (e.g. Aarts, 1998). In Chapter 3, I suggested a middle way between these approaches, arguing that social representations show relative stability but change when new information and phenomena occur. They need not be discussed or reproduced in every single practice, as in many cases they will have become part of a social group's "stock of knowledge."

Based on the empirical studies in this thesis, the stability and dynamics of social representations could be further illuminated. Chapter 8 explicitly focused on the stability and dynamics of the concept. I employed a qualitative and longitudinal approach to investigate whether references to social representations of nature show any change over time. The results reveal that, although stakeholders' views on other aspects of the conflict changed, the references to the representations of nature were rather stable. The participatory process and the signing of a covenant between the contending parties did not have much influence on these representations. In this process, the stability clearly outweighed the dynamics of social representations of nature. Perhaps changes in representations need more time and the three years I spent studying the process of this conflict may have been too short a period to witness such changes. Furthermore, because the participatory process started only after the conflict had escalated, the actors may have entrenched themselves in their particular representations of nature and have been unwilling to critically reflect on those representations. It would be interesting to study changes in the longer run by analyzing developments in the representations of nature used by, for example, the national media, tourism leaflets, or periodicals issued by nature-related NGOs.

The dynamics of social representations of nature were more pronounced in the study in Chapter 5, in which I described the influence of migration on representations of nature. This study showed that first-generation immigrants and native Dutch people clearly hold different views on nature and scenic beauty, and that this is related to differences in social representations of nature in both cultures. However, second-generation immigrants – being embedded in two cultures, and thus influenced by both representations of nature – showed some kind of middle position. Their cognitive beliefs about nature seemed to be based on "Dutch" representations of nature, while their normative values seemed to be based on representations from their parents' culture (see also Buijs, 2008). This demonstrates that although social representations show considerable stability, changing circumstances may result in changing representations. Related to this mixture of change and constancy, I suggest considering social representations of nature as "temporarily stabilized" (cf. Arts & Buizer, 2009): Although they are dynamic in the longer run, at any given moment in time they can be considered stabilized.

**Research question 3:**

To what extent do actors use social representations of nature in the framing of nature related socio-political issues?

As shown in Chapters 7 and 8, stakeholders engage in framing activities in order to influence the understanding of environmental disputes. Through this framing, different stakeholders tell different “stories” about the issue. They emphasize certain aspects, while downplaying others. This thesis has shown how different groups refer to different representations of nature in their framing of the management of natural areas and the implementation of nature restoration projects. Stakeholders try to make their frame of the issue seem more natural and appealing by referring to well-known and widely accepted social representations.

Especially protest groups use a wide range of elements from the representations of nature that circulate in the local community. For example, the Woodland Giant Foundation refers to both the inclusive and the aesthetic representations of nature (Ch. 8). The inclusive representation of nature is used to argue against the felling of large numbers of trees in the forest in order to enhance the park’s drift sand area. Referring to the biocentric values that are typical of this inclusive representation, they argue that individual trees are living beings and should not be felled while they are still healthy. Furthermore, referring to the aesthetic representation, they argue that the accessibility of the area needs to be improved and that more attention should be paid to the diversity of the landscape. As these and other references to representations of nature resonate very well among critical groups in the local community, the local protest is very successful in framing the current management of the area as unsuitable and wrong. Their deeper embeddedness in the local community enables them to relate to the dominant representations of nature in the local community better than the managing agencies.

Chapter 7 also showed that professionals and organizations in the field of environmental management often fail to relate to dominant representations of nature in local communities. In this case study, the Netherlands Directorate General for Public Works and Water Management initiated ecological restoration plans for floodplains along the Rhine. In addition to safety arguments, the Directorate General predominantly referred to a wilderness representation of nature, focusing on the improvement of biodiversity through the restoration of a very dynamic and autonomously developing ecosystem. These arguments fell on fertile ground within a small group of newly arrived residents who endorse the wilderness representation of nature. However, the majority of residents adhere to an aesthetic or a functional

representation of nature. Consequently, these residents criticized river restoration plans as threatening the spatial quality of the floodplain.

***The framing of substance, procedure, and relationship***

This thesis has thus shown that the framing of land use policies and of nature management is influenced by the substance of the issue, most notable in relation to social representations of nature. Of course, environmental disputes center not only on social representations of nature; other topics are also related to the dispute and may be actively framed by the contending actors. For example, the river restoration study in Chapter 7 showed that in addition to social representations of nature, also representations of safety (“risk perception”), involvement, and the economic functions are important. Furthermore, I have demonstrated that not only the substance of the issue, but also the procedure through which decisions are made and the relationship between stakeholders are important aspects in the framing by stakeholders.

Residents and protest groups explicitly used local discontent about decision-making procedures in the framing of environmental issues. In several cases, unsatisfactory procedures led stakeholders to complain about undemocratic policy-making by governmental bodies and nature management agencies.

The procedural aspects are closely related to the relationship between actors, and criticism about procedures may lead to critical remarks about, for example, the non-democratic attitudes of other actors. The results of this thesis illustrate that the framing of environmental management also includes claims about the psychological ownership of an area (“For whom is the area important, and who should decide on how to manage it?”). This appropriation of natural areas (Lengkeek, 2000) relates not only to legal property rights, but also to personal involvement or family history, the importance of the area for daily leisure activities, and the fear of the destruction of a specific sense of place. Such appropriation by local actors is not always acknowledged by site managers. Chapter 8 illustrated how this may result in actors framing the relationship between residents and site managers as an insider–outsider relationship. Consequently, site managers are depicted as “arrogant” and as “outsiders.”

**Research question 4:**

To what extent do individual images of nature inform landscape preferences?

Social representations of nature are not only a cultural resource for framing practices. As they are mentally apprehended as images of nature, these representations also inform people’s experiences and preferences. I described in Chapter 5 how social

representations differ between different cultures, and how such different representations are reflected in individual images of nature. Immigrants tended to endorse functional representations, while native Dutch people tended to endorse wilderness representations. Furthermore, this chapter described significant correlations between images of nature and landscape preferences. For example, people who hold a functional or an inclusive image of nature showed lower preferences for natural landscapes, while those who hold a wilderness image showed higher preferences for natural landscapes. By comparing immigrants and native Dutch people, this thesis has shown that support for the functional image of nature among immigrants can explain their low appreciation of natural and unmanaged landscapes. Interestingly, socio-demographic characteristics (e.g. age, gender, education) had no or only limited additional power to explain landscape preferences. This suggests that images of nature may provide a stronger and more substantially meaningful predictor of landscape preferences than the often measured socio-demographic characteristics. This is an important indication that landscape preference studies should acknowledge the cultural basis of such preferences, and not focus only on consensus or on socio-demographic differences in landscape preferences.

### 9.3 Theoretical reflections

Social representations of nature are an innovative way of studying public views on nature and the consequences of such views for nature management and policy. In this section, I revisit some of the claims made by the theory of social representations and investigate the theoretical implications of applying this theory to the field of human–nature studies. First, I discuss some limitations of the way I conceptualized the structure of social representations of nature in this thesis. I then relate the results of this thesis to a recent debate on ecological aesthetics, and discuss some methodological considerations.

#### *Cognitive, normative, and expressive elements*

In this thesis, I focused on the cognitive and normative elements of social representations of nature. I chose this focus because prior studies in environmental psychology suggested that cultural and interpersonal differences are primarily based on cognitive and normative differences. Therefore, the empirical studies focused on the different values, value orientations, beliefs, and definitions of nature. However, Chapter 5 suggested that these cognitive and normative differences relate to different landscape preferences, and thus to different affective or expressive meanings of nature. This importance of the expressive meanings of nature in understanding

different representations of nature was further investigated and confirmed in Chapter 8. Although professionals from the managing agencies framed the expressive meanings articulated by local residents as irrational, and thus irrelevant for the decisions regarding the management of the national park, for the general public the expressive meanings related to the experience of nature was an important argument to protest against proposed changes in land use. Based on these results, I suggested expanding the conceptualization of social representations of nature with an expressive dimension. Future analyses of social representations of nature should thus focus on the cognitive, normative, *and* expressive dimension. This is very much in line with how Keulartz and colleagues (2004) distinguish between cognitive, normative, and expressive elements in their ecologically and politically based “concepts of nature.”<sup>1</sup>

The relevance of the expressive dimension of the human–nature relationship is also suggested in environmental psychology, especially in relation to people’s affective responses to natural areas or approaches focusing on people’s emotional bonds with nature (e.g. “connectedness to nature”: Mayer, 2004) or on specific places (e.g. “place attachment”: Jorgensen & Stedman, 2006). Consequently, emotions such as aesthetic pleasure, awe, fascination, connectedness, and place attachment could be incorporated into social representations of nature. However, their distribution over the different representations is as yet unknown. It can be suggested, for example, that awe of natural landscapes is predominantly related to the wilderness representation of nature, while aesthetic pleasure is predominantly related to the aesthetic representation.

### ***Scenic and ecological aesthetics***

The discussion on the relationship between the expressive and the cognitive and normative dimensions of social representations of nature is also related to a recent debate on ecological aesthetics (Gobster, 1999; Daniel, 2001; Gobster et al., 2007). Gobster suggested that differences between experts and lay people on the management of nature are related to two types of aesthetics, namely the ecological aesthetics often expressed by ecological experts, and the scenic aesthetics often expressed by lay people. Gobster criticized the influence of landscape paintings and the ensuing aesthetic preferences that have been dominant ever since the Romantic era. He described such scenic aesthetics as a “shallow” or “hedonistic” view that is based only on the visual perception of landscapes. Ecological aesthetics, on the other

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<sup>1</sup> Social representations theory itself is not very conclusive on the dimensions that may constitute a social representation. In theory, however, the inclusion of expressive elements can easily be based on more general philosophical elaborations of people’s interaction with the world. All the way back in the time of the ancient Greeks, Plato distinguished between logos, ethos, and pathos while, for example, Hume distinguished between understanding, morals, and passions, and Habermas between truth, justness, and truthfulness (Jacobs, 2006). Jacobs translated this distinction into three types of landscape evaluations, namely the true, the just, and the truthful landscape (Jacobs, 2002)

hand, is portrayed as incorporating a broader, and more elaborated, palette of landscape characteristics. In ecological aesthetics, preference for landscapes is directly related to recognition of the ecological health of a landscape, based on knowledge about the ecological relations. Although this view on aesthetics is still a very expert-oriented view, the distinction may be helpful to further investigate the expressive elements of social representations of nature.

The most important difference between the two types of aesthetics is the relation between the cognitive and the expressive appreciation of landscapes. While scenic aesthetics is considered a mainly affective (expressive) reaction to natural landscapes, ecological aesthetics is considered a predominantly cognitive reaction (Gobster, 1999, but see also Ulrich, 1983): The experience of pleasure is generated through people's knowledge of the landscape and the ecological processes that are present in it. True beauty can be experienced only through a deeper and more active exploration of the qualities of a landscape. As long as this difference is considered an empirical finding, and not a prescriptive valuation, differentiating between an ecological aesthetics and a scenic aesthetics can be helpful in understanding professionals' and non-professionals' emotional bonds with nature.

The results of the present thesis suggest that in order to investigate the relationship between ecological and scenic aesthetics, we need to acknowledge the existence of different representations of nature. This thesis shows that although scenic aesthetics is indeed dominant among most of the general public, some traces of ecological aesthetics can also be found. Especially within the wilderness representation of nature, the importance of natural processes is acknowledged, and the naturalness and autonomy of nature contributes to the appreciation of nature. Within this representation, the aesthetics seems to be based not only on the scenic characteristics of landscape, but also on the autonomy of nature and the ability to experience the forces and dynamics of nature (e.g. decay or flooding). Consequently, unmanaged landscapes with no or only limited human influence are preferred. Such landscapes evoke not only aesthetic experiences, but also experiences of awe and fascination (see also Keltner & Haidt, 2003; Van den Berg & ter Heijne, 2005; Armstrong & Detweiler-Bedell, 2008). However, in other representations – most notably the aesthetic representation – the focus is much more limited to scenic aesthetics related to, for example, perceptual diversity, the beauty of colorful trees, or the appreciation of such “charismatic” species as deer or butterflies. Therefore, what we need is a more empirical grounding of the relationship between ecological and scenic aesthetics. That is, we need empirical studies into the social and material circumstances in which ecological aesthetics or scenic aesthetics dominate among experts and among members of the general public.

*Methodological considerations*

In Chapter 3, I described the methodological consequences of the duality of social representations of nature, combining social and mental dimensions. Capturing the social dimensions was probably the hardest part of the empirical quest in this thesis. Many of these processes are fragmented and may occur at different places and moments. For example, social representations of nature may be expressed at a birthday party or upon meeting a neighbor in a forest. Furthermore, when people engage in communication on nature, they refer to only a limited number of elements of a social representation. It is thus hard to capture the full width of a representation. As a researcher, one can never know for sure if one has captured all elements. The importance of these elements also differs between different social practices; for example, in recreational practices the elements of a representation that are expressed differ from the elements expressed in disputes over nature management (see also Wagner et al., 1999 for an extensive discussion on different methodologies to study social representations).

To be as exhaustive as possible in describing the different representations, this thesis focused both on the social level in which social representations are communicated (cf. Gervais, 1997), and on the individual level where representations are reflected in individual minds (cf. Halfacree, 1993). Furthermore, a wide array of methodologies was used, namely individual interviews, picture-sorting techniques, questionnaires, focus group discussions, and document analysis. This range of methods culminated in Chapter 7 in an explicit mixed-method design (Creswell & Clark, 2007) that combined quantitative and qualitative methods in one empirical study. My decision to employ a wide range of methods was not fortuitous. In my view, social science too often focuses on either qualitative or quantitative methods, while combining methods can significantly increase the quality and the relevance of social inquiry. It can improve the validity of empirical research, develop a fuller picture of the research topics, or expand the scope of the research (Greene et al., 1989). The use of these very different methods allowed me to develop the understanding of social representations of nature throughout the course of this thesis.

## **9.4 Implications for management and policy**

This thesis also had a practical aim, namely to contribute to nature policy and management by investigating public views on nature and the consequences of these views for local management practices. I now return to this practical aim and formulate some implications for nature management and policy.

Experts and policy makers who encounter public resistance to their policies and management measures, often express their discontent that the general public is not able to understand the importance of nature conservation and merely express a general “resistance to change.” The public should therefore be “educated” in order to enhance their knowledge and to convince them of the importance of halting the decline of biodiversity. The results of this thesis suggest that such conclusions are based on a too simplistic view on how tourists, residents, farmers, hunters, and other groups relate to the natural environment. Studies that focus only on people’s knowledge or their general values will not be able to capture the complex and dynamic character of people’s relationships with nature. Managers and policy makers would be better served by studies that acknowledge the complex relationship between the general public and their love for and understanding of nature, and how this relates to the social processes through which nature policy and management are debated and communicated.

In this final section, I first describe the most important differences between professionals and lay people in their representations of nature.

### ***Differences between professionals and the general public***

In order to relate to the views of the general public, professionals need to acknowledge how their representations may differ from those held by the general public. The empirical studies of this thesis have shown several important differences in how experts and the public relate to and communicate on the natural environment. Here, I revisit these differences, based on a comparison of lay people’s and professionals’ representations of nature.

One major difference between professionals and the public concerns the focus on the different dimensions of social representations. In representations developed by professionals, much of the focus is on the cognitive dimension of these representations, primarily based on the scientific comprehension of nature. In public representations, this cognitive dimension is much less important, and is usually not scientifically based. In the public’s representations, the focus is much more on the expressive dimension, for example, related to aesthetics and the deeply felt connectiveness to nature. Despite these differences, the representations of experts and of the public converge on the importance of the third dimension of social representations of nature, that is, the normative dimension. Both experts and the majority of the public endorse the value of nature and the importance of nature conservation. It is on the *direction* of this general value of nature that differences emerge.

Different representations of nature exist not only among lay people, but also among professionals in the field. Keulartz, van der Windt, and Swart (2004) have

developed a typology of the representations of nature<sup>1</sup> as held by experts (see also Ch. 2). This typology comprises three experts' representations of nature: the wilderness, the Arcadian, and the functional representation. In their naming, and partly in their content, the wilderness and the functional representation can also be recognized in the typology of the public's representations as developed in this thesis. The inclusive representation does not have an equivalent in experts' representations. The aesthetic representation of the general public is somewhat comparable to the Arcadian representation of the experts. The commonalities and differences between representations of experts and the general public are summarized in table 9.2.

The wilderness representation is found in both the public's and experts' representations of nature. Although these representations show considerable commonalities (especially on the normative dimension), there are also some differences. First, the interpretation of naturalness and autonomy differs between both representations. Experts' representations focus on the nativeness of species and the undisturbedness of ecosystems, while the public's representations focus more on the spontaneity of natural areas and the lack of visual disturbance by human artefacts (see also Buijs, 2000; Van Koppen, 2002). Consequently, in an experts' representation of wilderness, an electricity pylon does not necessarily disturb nature, while in the public's representation the pylon causes considerable harm to the experience of nature.

The public's aesthetic representation is to some extent comparable to the experts' Arcadian representation: Both are based on weak anthropocentric values and the recognition of the importance of human influence on the genesis of the landscape. However, while experts' representation seem to focus more on the ecological functions and historical genesis, the public's representation focuses more on the visual perception of landscape diversity. It is exactly this focus on aesthetics that led me to name this representation an "aesthetic representation of nature." Furthermore, the public's representation focuses more on the expressive meanings of nature and landscape, based on, for example, emotional attachment rather than exact historical knowledge of its historical genesis.

The functional representation is found among both groups and is interpreted in a more or less similar way. However, this functional representation is not very often found among either experts or the general public (except for farmers (Aarts, 1998; van der Windt et al., 2007) and immigrants).

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<sup>1</sup> The authors speak of "concepts of nature" or "expert valuation approaches" (see Chapter 3). As the structure and function of these concepts of nature are very comparable to the structure and functions of social representations of nature, for reasons of clarity, I refer to these expert concepts of nature as "experts' representations of nature."

Table 9.2: Differences and similarities between representations of experts and of the public.

Public		Public + Experts	Experts	
	<i>Divergent characteristics</i>	<i>Common characteristics</i>	<i>Divergent characteristics</i>	
Wilderness	Perceived naturalness  Symbolic aesthetics of fascination and otherness	Ecocentric  Hands-off management  Narrow definition of nature  Nature ↔ Culture	Autonomy of ecological processes  Ecological aesthetics	Wilderness
Inclusive	Biocentric  Limited management  Wide definition of nature  Reverence for life	-	-	-
Aesthetic	Scenic aesthetics  Perceptual diversity  Emotional attachment to historical genesis	Weak anthropocentric  Nature + Culture  Cultural history	Landscape patterns  Knowledge of historical genesis	Arcadian
Functional	-	Anthropocentric value  Nature + Culture  Resource management	-	Functional

The inclusive representation of the public is not found at all among the group of professionals. As described before, this inclusive representation is based on biocentric

value of nature, in combination with a wide definition and a reverence for individual life.

Of course, expert's representations are based on thorough and valuable scientific research on how to protect and enhance certain qualities of natural areas. This makes these scientifically based representations of another kind than the social representations of the public. Many citizens will also acknowledge the importance of scientifically based management of nature. Nevertheless, also scientific representations contain normative choices about the value and valuation of different types of nature (Swart et al., 2001). Consequently, from a democratic point of view, site managers need to acknowledge the need for the equal coexistence of different representations of nature and the resulting views on nature management. This is even more so from a pragmatic point of view, as policies that do not resonate among local communities are difficult to implement.

### ***Diversify – Design – Explain***

How to deal with this diversity in views? I think two aspects are important in this: How to deal with it procedurally and how to deal with it substantively. Procedurally, the question relates to communication and participation. Substantively, the question relates to choosing between diversification, people-inclusive design, or a sheer explanation of the reasons why social values are not taken into account. All three strategies are to a greater or less extent already used in practice. However, most of the focus is usually put on the explanation of management and policy. Professionals are sometimes tempted to base management purely on their professional view on nature, and develop policies and management accordingly. Natural areas are then managed to maximize the ecological output, not the social output. This is then explained to the public, often focusing on the ecological benefits of the plans.

In my view, the ecological and social values of nature policy and management could be more balanced. It would increase the social inclusiveness of nature policy were we to start by trying to diversify the management options between different areas. If it is decided to focus the management of an area on the ecological functions, the next question could be whether management can meet public demands by designing with people in mind. If people-inclusive design is also insufficient, the third option – explanation – comes to the fore. So it is “diversify-design-explain”, not the other way around.

Diversification means more explicitly differentiating between ecological and societal goals for the management of natural areas, while taking into account the multiple functions of natural areas in a European context. Not all Dutch national parks need to focus on autonomous ecological processes that are based on a “wilderness” representation of nature, nor do they need to prioritize biodiversity. In ecologically very valuable areas, the ecological values should dominate, while in

ecological less valuable areas, the social values should dominate. Of course, the Oostvaardersplassen and the Wadden Sea are unique on a European scale, and biodiversity should be the prime objective for their management. However, in other areas the social values may outweigh the ecological values. Unfortunately, multidisciplinary studies into the combined ecological and social value of natural areas in the Netherlands are still largely lacking. Such studies could be helpful to develop valuation methods to choose between primarily ecological values, primarily social values, or a combination of both. At the moment, the social functions of natural areas are sometimes too easily dismissed as being subordinate to ecological values.

People-inclusive design is landscape design that explicitly takes into account the social values of natural areas and tries to balance these values with the ecological values of the area. Intervention through design is certainly a promising strategy to minimize possible discrepancies between ecological and social values. It offers opportunities to take better notice of lay people's representations of nature, including their aesthetic preferences (see also Brinkhuijsen, 2008; Nassauer & Opdam, 2008). Very practical suggestions include the use of design to reveal ecological health (Gobster, 1999), and to design specific cues that convey the message that "messy" ecological landscapes show human care and management, rather than neglect (Nassauer et al., 2001). By designing specific gateways and partitions, creatively planning trails, and deliberately managing places and their meanings, design can also contribute to incorporating people's aesthetic views on and emotional bonds with natural areas (Kaplan et al., 1998).

Managers sometimes have good reasons to focus fully on the ecological values of an area. When efforts to mitigate the undesirable effects through careful design are also insufficient, explaining the choices on which the management is based is a third strategy to handle divergent representations. Site managers then need try to explain their reasoning behind these decisions. However, referring only to the ecological values of the area will often not suffice. Simply arguing for the need for biodiversity protection will not help to prevent social conflicts, nor will simplistic suggestions to "educate" the public. It would be more helpful if they could then refer to an explicitly made evaluation of the different values of the area, including the social values for the local community and to attempts to mitigate the effects of the ecological focus through careful socially-inclusive design.

### ***Participation***

Differences need to be handled not only substantively, but also procedurally. Then communication and participation come to the fore. Successful participation starts with recognizing and discussing the diversity of views in a community. It is about the equal coexistence of different social representations of nature and the willingness to find common ground between ecologically and politically based objectives and the

objectives of other stakeholders. To a limited extent, this has already been put into practice, especially on the site level (e.g. Staatsbosbeheer, 2006). Management agencies increasingly try to include local stakeholders in the implementation of nature policy or the design of concrete management practices by organizing participatory processes.

Although the advantages and difficulties of participatory approaches were not a focus of this thesis, participatory planning can certainly contribute to the incorporation of public views on nature into the management of natural areas (Coenen, 2009). However, because nature policy and nature management are often largely directed by national and EU policies (e.g. Natura 2000), site managers may be tempted to disregard the need for the participation of local communities (Buchy & Hoverman, 2000). This is unfortunate, and not only from a democratic point of view.<sup>1</sup> This thesis has also once again shown that procedures that do not recognize people's need to have a say about their own living space, may experience significant difficulties in implementing the policies. Modern citizenship does not accept the implementation of measures that will seriously affect a person's living environment, unless that person is allowed to participate in the decision-making process. Excluding the public from decision making also leaves policy makers and site managers vulnerable to accusations of "undemocratic" policy. Participation can be helpful to understand and deal with diverging views of the public, although it certainly cannot guarantee success. It may also slow the process down and it may be impossible to reach consensus on the issue (Edelenbos & Monnikhof, 2001).

Truly inclusive decision-making processes need to include not only institutionalized stakeholders, but also the general public, and especially local residents (Janse & Konijnendijk, 2007). This is still not common practice. Participatory processes related to environmental issues tend to develop toward a transactional rather than a consensual style. In transactional-orientated participatory decision-making, the discussions focus on the exchange of interest between powerful stakeholders, rather than on the exchange of views and ideas between all actors, both the more and the less powerful among them (van der Windt et al., 2007). Consequently, unorganized members of the general public are not always involved, and their voices are often heard only after they have organized themselves into a protest group (Swyngedouw, 2005). As Chapter 8 showed, that is usually too late to prevent serious conflicts from arising.

### ***Framing***

How professionals deal with differences between experts and residents and tourists directly influences the relationship between both parties. As chapter seven and eight

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<sup>1</sup> I will not discuss the relationship between participation and different forms of democracy (see for example Young, 2000; Keulartz & Leistra, 2008).

have shown, nature management practices are not only evaluated based on the material content of these practices. The interpretation of these activities is also very important, as every physical interference (or lack of interference) will affect the meanings an area has for its users.

The interpretation of such activities is closely related to the framing of the activities. What stories are developed by different stakeholders to understand and react to these activities? Especially when local actors are not involved in the decisionmaking-process, these stories may start to diverge significantly. In turn, this may lead to conflicts between the different actors. Therefore site-managers are well-advised to take into account such framing effects. As chapter eight has shown, especially the relationship between the different actors and the procedure through which decisions are taken are important elements of the framing efforts of stakeholders. Especially to handle such framing effects on the local level may present a challenge for site managers, as local groups may be very effective in mobilizing support through developing critical stories about the management of e.g. a National Park. Participation, careful communication and sensitivity to local social processes are just a few suggestions to deal with these processes (see also Lewicki & Gray, 2003; Buijs, 2009c).

### ***Sensitizing concepts for managers***

Social representations of nature can function as sensitizing concepts<sup>1</sup> for managers, policy makers, and landscape architects – as a looking glass that helps them to focus on important aspects of a phenomenon. I would like to suggest using social representations of nature as a sensitizing concept for anyone who is trying to understand public views on nature and nature management. The classification of social representations of nature developed in this thesis can help practitioners who want better to understand the diversity of lay people's views on nature, by suggesting a direction in which to look. Understanding the different representations of nature encourages actors to acknowledge the existence of different values and beliefs related to nature and nature management. Social representations can also suggest directions in which to look for the most important differences between experts and the public.

Social representations of nature can also facilitate discussions both in participatory processes and in more general communication with the public (Keulartz et al., 2004). Mutual understanding in participatory processes between different groups with

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<sup>1</sup> In grounded theory, social scientists use sensitizing concepts to guide their research until their very tentative ideas about their subject have become more concrete (Bowen, 2006). Sensitizing concepts then function as interpretive devices to investigate the results of a qualitative study, without fully defining and delimiting the boundaries of the concept. "Whereas definitive concepts provide prescriptions of what to see, sensitizing concepts merely suggest directions along which to look" (Blumer, 1954, p. 7).

different backgrounds and knowledge is possible only when a common vocabulary has been established. Establishing a common vocabulary is anything but straightforward, as experts and non-experts often differ substantially in the concepts and knowledge they refer to (Hull et al., 2001). The classification of the social representations of nature developed in this thesis may provide such a vocabulary. Because they incorporate the most important elements of divergent representations, they can help to structure discussions on values, beliefs, and value orientations between stakeholders with different backgrounds and vocabularies. This classification of social representations of nature has already been successfully used in structuring discussions among regional policy makers and water managers (Buijs, 2006), and in lectures given to forestry students (Buijs, 2005).

### ***Ecological sustainability through cultural sustainability***

In the long run, nature policy needs to be closely connected with the views of the general public in order to preserve public and political support. In such a densely populated and urbanized country as the Netherlands, ecological sustainability will be safeguarded only when large groups in society acknowledge the importance of the conservation of natural areas and, preferably, engage with it. As pressure on the land tends to be high, “natural landscapes that attract the admiring attention of human beings may be more likely to survive than landscapes that do not attract care or admiration” (Nassauer, 1997, p. 68). Based on these considerations, Nassauer argues for the importance of the “cultural sustainability” of natural areas.

At the moment, the cultural sustainability of nature conservation is generally high in the Netherlands (Bakker et al., 2007). However, in this thesis I have shown that the cultural sustainability of regional and local management practices could be improved. I have demonstrated that negative attitudes toward nature conservation practices need not be related to a lack of support for nature conservation in general, nor to resistance to change. Opposition is often based on divergent social representations of nature. The kinds of nature valued by local communities differ from those that most professionals value. While professionals refer to ecological knowledge, the public refers to aesthetics and the psychological appropriation of an area. Biodiversity is therefore too limited a concept to arouse lay people’s enthusiasm for nature conservation. And although the normative drive of site managers to protect nature for its intrinsic values is shared by large segments of the public, many people interpret these values differently. The biocentric values of residents lead to different types of management than the holistic–ecocentric values of many professionals.

Managing these differences in an increasingly complex society is the new challenge for both nature policy and site managers. Nature management is no longer limited to the management of the physical environment; also the social environment needs to be taken into account (Kennedy & Koch, 2004). And just as the physical environment

# References



## References

- Aarts, N., 1998. *Een kwestie van natuur: een studie naar de aard en het verloop van communicatie over natuur en natuurbeleid*. Wageningen: Unpublished dissertation.
- Achterberg, W. & Zweers, W., 1984. *Milieu-crisis en filosofie: Westers bewustzijn en vervreemde natuur*. Amsterdam: Ekologische Uitgeverij.
- Ajzen, I., 2005. *Attitudes, personality and behaviour*. Maidenhead: Open University Press.
- Ammar, N.H., 1995. Islam and environment. In H. Coward (Ed.), *Population, consumption, and the environment. Religious and secular responses* (pp. 123-136). Albany: State University of New York Press.
- Andrews, M., 1999. *Landscape and Western Art*. Oxford: Oxford University Press.
- Ang, S.H., 2006. The influence of metaphors and product type on brand personality perceptions and attitudes. *Journal of advertising*, 35(2), 39-53.
- Aoki, Y., 1999. Review article: Trends in the study of the psychological evaluation of landscape. *Landscape Research*, 24(1), 85-94.
- Appleton, J., 1975. *The experience of landscape*. Chichester: Wiley.
- Armstrong, T., & Detweiler-Bedell, B., 2008. Beauty as an Emotion: The Exhilarating Prospect of Mastering a Challenging World. *Review of General Psychology*, 12(4), 305-329.
- Archer, M., Bhaskar, R., Collier, A., Lawson, T., & Norrie, A., 1998. *Critical Realism: Essential Readings*. London: Routledge.
- Arts, B. & Buizer, M., 2009. Forests, discourses, institutions. A discursive-institutional analysis of global forest governance. *Forest Policy and Economics*, DOI: 10.1016/j.forpol.2008.10.004.
- Arts, B., Tatenhove, van J., 2004. Policy and power: A conceptual framework between the 'old' and 'new' policy idioms. *Policy sciences*, 37(3-4), 339-356.
- Bakker, H.C.M. d., Koppen, C.S.A. v. & Vader, J., 2007. *Het groene hart van burgers: het maatschappelijke draagvlak voor natuur en natuurbeleid*. Wageningen: Wettelijke Onderzoekstaken Natuur & Milieu.
- Balling, J. D., & Falk, J. H., 1982. Development of visual preference for Natural environments. *Environment And Behavior*, 14(1), 5-28.
- Bang, M., Medin, D. L., & Atran, S., 2007. Inaugural Article: Cultural mosaics and mental models of nature. *PNAS*, 104(35), 13868-13874.
- Barbour, I. G., 1980. *Technology, Environment and Human Values*. New York: Praeger publishers.
- Bauer, M.W. & Gaskell, G., 1999. Towards a paradigm for research on social representations. *Journal for the Theory of Social Behaviour*, 29(2), 163-186.
- Bax, W. & Welgraven, C., 2006. Herrie om de windmolen. *Trouw*, 29 juni 2006..

- Bechtel, R.B. & Churchman, A., 2002. *Handbook of Environmental Psychology* John Wiley & Sons, Inc. 2002.
- Beck, M., Matschinger, H. & Angermeyer, M.C., 2003. Social representations of major depression in West and East Germany - Do differences still persist 11 years after reunification? *Social Psychiatry and Psychiatric Epidemiology*, 38(9), 520-525.
- Beck, U., 1992. *Risk society: towards a new modernity*. London: Sage.
- Bell, P.A., 2001. *Environmental psychology*. Fort Worth, TX: Harcourt College.
- Bell, P.A., Greene, T.C., Fisher, J.D. & Baum, A., 2001. *Environmental psychology*. Fort Worth, TX: Harcourt College.
- Benford, R.D. & Snow, D.A., 2000. Framing processes and social movements: An overview and assessment. *Annual Review of Sociology*, 26, 611-639.
- Bengston, D.N., Webb, T.J. & Fan, D.P., 2004. Shifting forest value orientations in the United States, 1980-2001: A computer content analysis. *Environmental values*, 13(3), 373-392.
- Berends, H. & Veeneklaas, F., 2003. *Mensen en natuur: kunnen we die relatie meten?* Wageningen: Natuurplanbureau, Vestiging Wageningen.
- Berger, P.L. & Luckmann, T., 1967. *The social construction of reality: a treatise in the sociology of knowledge*. New York, NY: Anchor.
- Bhaskar, R., 1978. *A realist theory of science*. Hassocks, UK: Harvester Press.
- Bhaskar, R., 2002. *From science to emancipation: alienation and the actuality of enlightenment*. Thousand Oaks: SAGE.
- Blumer, H., 1954. What is wrong with social theory? *American Sociological Review*, 18, 3-10.
- Boudon, R., 2003. Beyond Rational Choice Theory. *Annual Review of Sociology*, 29, 1-21.
- Bourassa, S.C., 1990. A paradigm for landscape aesthetics. *Environment and Behavior*, 22, 787-812.
- Bowen, G.A., 2006. Grounded Theory and Sensitizing Concepts. *International Journal of Qualitative Methods*, 5(3), 1-9.
- Breman, B., Pleijte, M., Ouboter, S. & Buijs, A., 2008. *Participatie in waterbeheer*. Wageningen: Alterra.
- Brinkhuijsen, M., 2008. *Landscape 1:1: a study of designs for leisure in the Dutch countryside*. Unpublished Proefschrift, Wageningen University, Wageningen.
- Bryman A., 2004. *Social Research Methods*. Oxford: Oxford University Press.
- Buchy, M. & Hoverman, S., 2000. Understanding public participation in forest planning: A review. *Forest Policy and Economics*, 1(1), 15-25.
- Buijs, A., 2005. *Wat is jouw natuurbeeld?* Wageningen: Alterra.
- Buijs, A.E., 2000. Natuurbeelden van de Nederlandse bevolking. *Landschap*, 17(2), 97-112.

- Buijs, A.E., 2006. Report of three masterclass "nature images" for the province of Noord Brabant, The Netherlands (in Dutch).
- Buijs, A.E., 2008. Immigrants between two cultures: the use of social representations theory to understand cultural dynamics in images of nature. In H. De Haan & R. Van der Duim (Eds.), *Landscape, Leisure and Tourism* (pp. 43-62). Wageningen: Eburon.
- Buijs, A.E., 2009a. Lay people's images of nature: frameworks of values, beliefs and value orientations. *Society and Natural Resources*, 22(5), 417-432.
- Buijs, A.E., 2009b. Public support for river restoration. A mixed-method study into local residents' support for and framing of river management and ecological restoration in the Dutch floodplains. *Journal of Environmental* 90(8), 2680-2689.
- Buijs, Arjen, 2009c. Protest door verbondenheid: de draagvlakmatrix als denkmodel om maatschappelijk protest te begrijpen. In: Elands & Turnhout: Draagvlak en betrokkenheid. Wot-studie 9. Wageningen: WOT Natuur en Milieu.
- Buijs, A. E., Berends, H., Berg, L. M. v. d., & Veeneklaas, F. R., 2003. *Consument en burger: gebruik, beleving en leefbaarheid van het platteland*. Den Haag: LEI .
- Buijs, A.E., Elands, B.H.M. & Langers, F., 2009. No Wilderness for Immigrants: Cultural Differences in Images of Nature and Landscape Preferences. *Landscape and Urban Planning*, 91, 113-123.
- Buijs, A.E., Fischer, A., Rink, D. & Young, J.C., 2008. Looking beyond superficial knowledge gaps: Understanding public representations of biodiversity. *International Journal of Biodiversity Science and Management*, 4(2), 65-80.
- Buijs, A.E., Pedroli, B. & Luginbühl, Y., 2006. From hiking through farmland to farming in a leisure landscape: Changing social perceptions of the European landscape. *Landscape Ecology*, 21(3), 375-389.
- Buijs, A.E. & Volker, C.M., 1997. *Publiek draagvlak voor natuur en natuurbeleid*. Wageningen: DLO-Staring Centrum.
- Bunce, M., 1994. *countryside ideal: Anglo - American images of landscape*. London: Routledge.
- Burgess, J., 1990. The production and consumption of environmental meanings in the mass media: a research agenda for the 1990s. *Transactions - Institute of British Geographers*, 15(2), 139-161.
- Burke, E., 1998/1757. *A philosophical enquiry into the origin of our ideas of the sublime and beautiful and other pre-revolutionary writings*. New York: Oxford University Press.
- Callicott, J.B., 1989. *In defense of the land ethic: essays in environmental philosophy*. Albany: State University of New York Press.
- Callicott, J.B., 2002. Choosing appropriate temporal and spatial scales for ecological restoration. *Journal of biosciences*, 27(4 SUPPL. 2), 409-420.
- Carlston, D. E., 1994. Associated systems theory: A systematic approach to cognitive representations of persons. In T. K. Srull & R. S. Wyer (Eds.), *Advances in*

- social cognition: a dual process model of impression formation* (Vol. 7, pp. 1-78). Hillsdale: Erlbaum.
- Carlston, D.E. & Smith, E.R., 1996. Principles of mental representation. In E. T. Higgins & A. W. Kruglanski (Eds.), *Social psychology: Handbook of basic principles*. New York: Guilford.
- Carolan, M.S., 2005. Society, biology, and ecology: Bringing nature back into sociology's disciplinary narrative through critical realism. *Organization and Environment*, 18(4), 393-421.
- Castro, P., 2006. Applying social psychology to the study of environmental concern and environmental worldviews: Contributions from the social representations approach. *Journal of Community and Applied Social Psychology*, 16(4), 247-266.
- Castro, P. & Gomes, I., 2005. Genetically modified organisms in the portuguese press: Thematization and anchoring. *Journal for the Theory of Social Behaviour*, 35(1).
- Castro, P. & Lima, M.L., 2001. Old and new ideas about the environment and science: an exploratory study. *Environment and Behavior*, 33(3), 400-423.
- CBS., 2007. *Demografische kerncijfers per gemeente*. Voorburg: CBS.
- Clayton, S. & Brook, A., 2005. Can psychology help save the world? A model for conservation psychology. *Analyses of Social Issues and Public Policy*, 5(1), 87-102.
- Cleveland, M., Kalamas, M. & Laroche, M., 2005. Shades of green: Linking environmental locus of control and pro-environmental behaviors. *Journal of Consumer Marketing*, 22(4), 198-212.
- Coenen, F. H. J. M., 2009. *Public participation and better environmental decisions: the promise and limits of participatory processes for the quality of environmentally related decision-making*. Dordrecht: Springer.
- Coeterier, J. F., 1987. *De Waarneming en Waardering van Landschappen*. Proefschrift Landbouwniversiteit, Wageningen.
- Coeterier, J.F., 1996. Dominant attributes in the perception and evaluation of the Dutch landscape. *Landscape and Urban Planning*, 34(1), 27.
- Coeterier, J. F. (2000). *Hoe beleven wij onze omgeving? Resultaten van 25 jaar omgevingspsychologisch onderzoek in stad en landschap*.
- Cosgrove, D., 2008. Images and imagination in 20th-century environmentalism: From the Sierras to the Poles. *Environment and Planning A*, 40(8), 1862-1880.
- Creswell, J.-W., & Clark, V.-L. P., 2007. *Designing and conducting mixed methods research*. Thousand Oaks: SAGE.
- D'Angelo, P., 2002. News framing as a multiparadigmatic research program: A response to Entman. *Journal of communication*, 52(4), 870-888.
- D'Anjou, L. & Van Male, J., 1998. Between old and new: Social movements and cultural change. *Mobilization: An International Journal*, 3(2), 207-226.
- Dagevos, J.C., 2000. *Tussen nu en straks: trends en hun effecten op de groene ruimte*. Den Haag: LEI.

- Dakin, S., 2003. There's more to landscape than meets the eye: Towards inclusive landscape assessment in resource and environmental management. *Canadian Geographer*, 47(2), 185-200.
- Daniel, T.C., 2001. Whither scenic beauty? Visual landscape quality assessment in the 21st century. *Landscape and urban planning*, 54(1-4), 267-281.
- Daniels, S.E. & Walker, G.B., 1997. Collaborative learning and land management conflicts. In B. Solberg & S. Miina (Eds.), *Conflict Management and Public Participation in Land Management* (Vol. 14, pp. 37-60). Joensuu: EFI.
- Daugstad, K., Svarstad, H. & Vistad, O.I., 2006. A case of conflicts in conservation: Two trenches or a three-dimensional complexity? *Landscape research*, 31(1), 1-19.
- De Groot, R.S., 2002. A typology for the classification, description and valuation of ecosystem functions, goods and services. *Ecological economics*, 41(3), 393-408.
- De Groot, W.T., 1992. *Environmental science theory: concepts and methods in a one-world, problem-oriented paradigm*. Amsterdam: Elsevier Science Publishers.
- De Groot, W.T. & Van den Born, R.J.G., 2003. Visions of nature and landscape type preferences: An exploration in The Netherlands. *Landscape and urban planning*, 63(3), 127-138.
- De Rosa, A.S., 2006. The "boomerang" effect of radicalism in discursive psychology: A critical overview of the controversy with the social representations theory. *Journal for the theory of social behaviour*, 36(2), 161-201+222.
- De Vries, S., & Gerritsen, E., 2003. *Van fysieke kenmerken naar landschappelijke schoonheid : de voorspellende waarde van fysieke kenmerken, zoals vastgelegd in ruimtelijke bestanden, voor de schoonheidsbeleving van Nederlandse landschappen*. Wageningen: Alterra Research Instituut voor de Groene Ruimte.
- De Vries, S., Roos-Klein Lankhorst, J.R. & Buijs, A.E., 2007. Mapping the attractiveness of the Dutch countryside: A GIS-based landscape appreciation model. *Forest Snow and Landscape Research*, 81(1-2), 43-58.
- De Vries, S., Verheij, R. A., Groenewegen, P. P., & Spreeuwenberg, P., 2003. Natural environments - healthy environments? An exploratory analysis of the relationship between greenspace and health. *Environment and Planning A*, 35, 1717-1731.
- Dearden, P., 1984. Factors influencing landscape preferences: An empirical investigation. *Landscape and Planning*, 11(4), 293-306.
- DeLucio, J.V. & Mugica, M., 1994. Landscape preferences and behaviour of visitors to Spanish national parks. *Landscape and Urban Planning*, 29(2-3), 145-160.
- DiMaggio, P., 1997. Culture and Cognition. *Annual Review of Sociology*, 23, 263-288.
- Disco, C., 2002. Remaking "nature": The ecological turn in Dutch water management. *Science Technology and Human Values*, 27(2), 206-235.
- Dumont, J.C. & Lemaître, G., 2005. *Counting Immigrants and Expatriates: A New Perspective*.: OECD.

- Dunlap, R.E. & Van Liere, K.D., 1978. The "new environmental paradigm" A proposed measuring instrument and preliminary results. *Journal of Environmental Education*, 9, 10-19.
- Dunlap, R.E., Van Liere, K.D., Mertig, A.G. & Jones, R.E., 2000. Measuring endorsement of the new ecological paradigm: A revised NEP scale. *The Journal of social issues*, 56(3), 425-442.
- Eagly, A.H. & Chaiken, S., 1998. Attitude structure and function. In D.T. Gilberts, S.T. Fiske & G. Lindzey (Eds.), *The handbook of social psychology* (4th. ed., Vol. 1, pp. 269-322). Boston: McGraw-Hill.
- Eder, K., 1996. *The Social Construction of Nature*. London: SAGE Publications.
- Edelenbos, J., & Monnikhof, R., 2001. *Lokale interactieve beleidsvorming. Een vergelijkend onderzoek naar de consequenties van interactieve beleidsvorming voor het functioneren van de lokale democratie*. Utrecht.
- Elands, B. & Lengkeek, J., 2000. *Typical tourists: research into the theoretical and methodological foundations of a typology of tourism and recreation experiences*. Wageningen: Wageningen UR .
- Elands, B.M.H. & Koppen, C.S.A. v., 2007. *Indicators for the 'Convention on biodiversity 2010'* (No. 53/12). Wageningen: Wot.
- Elands, B. H. M., & Wiersum, K. F., 2001. Forestry and rural development in Europe: An exploration of socio-political discourses. *Forest Policy and Economics*, 3(1-2), 5-16.
- Elbersen, B.S., 2001. *Nature on the doorstep: the relationship between protected natural areas and residential activity in the European countryside*. University of Utrecht, Utrecht.
- Elder J, Coffin C and Farrior M., 1998. *Engaging the public on biodiversity – a road map for education and communication strategies*. Madison: The Biodiversity Project. <http://www.biodiversityproject.org/roadmap.pdf>, accessed February 2008.
- Elliot, M., Gray, B. & Lewicki, R.J., 2003. Lessons Learned about the Framing and reframing of Intractable Environmental Conflicts. In R. J. Lewicki, B. Gray (Ed.), *Making sense of intractable environmental conflicts: frames and cases* (pp. 409-435). Washington D.C.: Island Press.
- Eurobarometer, 2007. *Attitudes of Europeans towards the issue of biodiversity*. Brussel: The Gallup Organization.
- Evanoff, R. J., 2005. Reconciling realism and constructivism in environmental ethics. *Environmental values*, 14(1), 61-81.
- Filius, P., Buijs, A.E. & Goossen, C.M., 2000. *Natuurbeleving door doelgroepen: waarden en wensen van jagers, sportvissers, vogelwerkgroepleden en vrijwilligers in het landschapsbeheer*. Wageningen: Alterra Research Instituut voor de Groene Ruimte.
- Fischer P. and Bliss J.C., 2006. Mental and biophysical terrains of biodiversity: conserving oak on family forests. *Society and Natural Resources* 19, 625–43.

- Fischer, A. & Van der Wal, R., 2007. Invasive plant suppresses charismatic seabird - the construction of attitudes towards biodiversity management options. *Biological conservation*, 135(2), 256-267.
- Fischer, F., 2000. *Citizens, experts, and the environment: the politics of local knowledge*. Durham, NC: Duke University Press.
- Fishbein, M., & Ajzen, I., 1975. *Belief, Attitude, Intention and Behavior: An Introduction to Theory and Research*. Reading: Addison-Wesley.
- Fredman, P., 1994. *The existence of existence value*. Umea: Sveriges Lantbruksuniversitet Dept. of Forest Economics.
- Frith, C. D., 2008. Review. Social cognition. *Philosophical Transactions of the Royal Society B: Biological Sciences*, 363(1499), 2033-2039.
- Fulton, D.C., Manfredo, M.J. & Lipscomb, J., 1996. Wildlife value orientations: A conceptual and measurement approach. *Human Dimensions of Wildlife*, 1(2), 24-47.
- Gamson, W.A., 1988. Political discourse and collective action. In B. Klandermans, H. Kriesi & S. Tarrow (Eds.), *From structure to action: Social movement participation across structures*. Greenwich, CT: JAI Press.
- Gamson, W.A., 1992. *Talking Politics*. New York: Cambridge.
- Gamson, W.A. & Modigliani, A., 1989. Media discourse and public opinion on nuclear power: A constructionist approach. *The American journal of sociology*, 95(1), 1-37.
- Gervais, M.-C., 1997. *Social representations of nature: The case of the Braer oil spill in Sbetland*. University of London, London.
- Gieryn, T.F., 1983. Boundary work and the demarcation of science from nonscience: Strains and interests in professional ideologies of scientists. *American Sociological Review*, 48(6), 781-795.
- Gobster, P.H., 1999. An ecological aesthetic for forest landscape management. *Landscape Journal*, 18, 54-64.
- Gobster, P.H., 2001. Visions of nature: Conflict and compatibility in urban park restoration. *Landscape and urban planning*, 56(1-2), 35-51.
- Gobster, P.H., Nassauer, J. I., Daniel, T.C. & Fry, G., 2007. The shared landscape: What does aesthetics have to do with ecology? *Landscape Ecology*, 22(7), 959-972.
- Goossen, M., & Langers, F., 2000. Assessing quality of rural areas in the Netherlands: finding the most important indicators for recreation. *Landscape and Urban Planning*, 46(4), 241-251.
- Gray, B., 2004. Strong opposition: Frame-based resistance to collaboration. *Journal of community & applied social psychology*, 14(3), 166-176.
- Greene, J.C., Caracelli, V.J. & Graham, W.F., 1989. Toward a conceptual framework for mixed-method evaluation designs. *Educational Evaluation and Policy Analysis*, 11(3), 255-274.

- Gregory, K.J., 2006. The human role in changing river channels. *Geomorphology*, 79(3-4), 172-191.
- Greider, T. & Garkovich, L., 1994. Landscapes: the social construction of nature and the environment. *Rural Sociology*, 59(1), 1-24.
- Gremmen, B., & Keulartz, J., 1996. Natuurontwikkeling ter discussie. *Filosofie & Praktijk*, 17(1), 14-27.
- Guba, E. G., Lincoln, Y.S., 1994. Competing paradigms in qualitative research. In N. Denzin & Y. Lincoln (Eds.), *Handbook of Qualitative Research*. Newbury Park, CA: Sage.
- Habermas, J., 1982. *Theorie des kommunikativen Handelns*. Frankfurt am Main: Suhrkamp.
- Hair, J.F., Anderson, R.E., Tatham, R.L. & Black, W.C., 1998. *Multivariate data analysis* (5 ed.). London: Prentice-Hall International.
- Halfacree, K.H., 1991. *The importance of spatial representations in residential migration to rural England in the 1980's.*, PhD thesis Lancaster University, Lancaster.
- Halfacree, K.H., 1993. Locality and social representation: space, discourse and alternative definitions of the rural. *Journal of Rural Studies*, 9(1), 23-37.
- Halfacree, K. H., 1996. Out of place in the country: Travellers and the "rural idyll". *Antipode*, 28(1), 42-72.
- Hall, S.E., 1997. *Representation. Cultural Representations and Signifying Practices*. London (etc.): SAGE Publications.
- Hansen-Møller, J., 2009. Natursyns model: A conceptual framework and method for analysing and comparing views of nature. *Landscape and Urban Planning*, 89(3-4), 65-74.
- Harrison, C.M. & Burgess, J., 1994. Social constructions of nature: a case study of conflicts over the development of Rainham Marshes. *Transactions - Institute of British Geographers*, 19(3), 291-310.
- Harrison, C.M., Burgess, J. & Clark, J., 1998. Discounted knowledges: Farmers' and residents' understandings of nature conservation goals and policies. *Journal of environmental management*, 54(4), 305-320.
- Hartig, T., 1993. Nature experience in transactional perspective. *Landscape and Urban Planning*, 25, 1-2.
- Herzog, T.R., Herbert, E.J., Kaplan, R. & Crooks, C.L., 2000. Cultural and developmental comparisons of landscape perceptions and preferences. *Environment and behavior*, 32(3), 323-346.
- Hiedanpaa, J., 2002. European-wide conservation versus local well-being: The reception of the Natura 2000 Reserve Network in Karvia, SW-Finland. *Landscape and urban planning*, 61(2-4), 113-123.
- Hill, D. & Daniel, T. C., 2008. Foundations for an ecological aesthetic: Can information alter landscape preferences? *Society and Natural Resources*, 21(1), 34-49.

- Holt, D. B., 2003. What Becomes an Icon Most? *Harvard Business Review*, 81(3), 43-49.
- Honour, H., 1979. *Romanticism*. London: Penguin Books.
- Hovardas, T. & Stamou, G.P., 2006. Structural and narrative reconstruction of rural residents' representations of 'nature', 'wildlife', and 'landscape'. *Biodiversity and conservation*, 15(5), 1745-1770.
- Howarth, C., 2006. A social representation is not a quiet thing: Exploring the critical potential of social representations theory. *British Journal of Social Psychology*, 45(1), 65-86.
- Huis, F., Hoenderkamp, K. & Hoffmans, W., 2008. *Recreatie cijfers bij de hand*. Den Haag: Kenniscentrum recreatie.
- Huitzing, D., 1994. Diversiteit aan waarden van de natuur. *Filosofie & Praktijk*, 16(4), 192-203.
- Hull, R.B., Robertson, D.P. & Kendra, A., 2001. Public understandings of nature: A case study of local knowledge about "natural" forest conditions. *Society and Natural Resources*, 14(4), 325-340.
- Hunter, L. M., & Brehm, J., 2003. Qualitative insight into public knowledge of, and concern with, biodiversity. *Human Ecology*, 31(2), 309-320.
- Hunter, L.M. & Rinner, L., 2004. The association between environmental perspective and knowledge and concern with species diversity. *Society and Natural Resources*, 17(6), 517-532.
- Hunziker, M., Felber, P., Gehring, K., Buchecker, M., Bauer, N. & Kienast, F., 2008. Evaluation of landscape change by different social groups: Results of two empirical studies in Switzerland. *Mountain Research and Development*, 28(2), 140-147.
- Inglehart, R., 1977. *Silent revolution: changes values and political styles among Western publics*. Princeton: Princeton University Press.
- Ingold, T., 2000. *The perception of the environment: essays on Livelibood, dwelling and skill*. London: Routledge.
- Jacobs, M., 2006. *The production of mindscapes: a comprehensive theory of landscape experience*. Unpublished PhD Thesis, Wageningen University, Wageningen.
- Jacobs, M. & Buijs, A. E., 2008. *Het hoofd boven water: omgaan met beleving in het waterbeheer*. Wageningen: Wageningen UR, Alterra.
- Jacobs, M.H., 2002. *Landschap 3: het ware, juiste en waarachtige landschap*. Wageningen: Wageningen UR.
- Jacobs, M.H., 2009. Why do we like or dislike animals? *Human Dimensions of Wildlife*, 14(1), 1-11.
- Jans, L. R., 2004. *Evaluatie nevengeulen Gamerense waard, 1996-2002* (No. 2004-024). Lelystad: RIZA.

- Janse, G. & Konijnendijk, C.C., 2007. Communication between science, policy and citizens in public participation in urban forestry--Experiences from the Neighbourwoods project. *Urban Forestry & Urban Greening*, 6(1), 23-40.
- Jodelet, D., 1991. *Madness and social representation*. London: Harvester-Wheatsheaf.
- Johnson, C.Y., Bowker, J.M., Bergstrom, J.C. & Cordell, H. K., 2004. Wilderness values in America: Does immigrant status or ethnicity matter? *Society & natural resources*, 17(7), 611-628.
- Johnson, C.Y., Horan, P.M. & Pepper, W., 1997. Race, rural residence, and wildland visitation: Examining the influence of sociocultural meaning. *Rural Sociology*, 62(1), 89-110.
- Jókövi, E.M., 2001. *Vrijtijdsbesteding van allochtonen en autochtonen in de openbare ruimte*. Wageningen: Alterra. Alterra rapport 295.
- Jorgensen, B.S. & Stedman, R.C., 2006. A comparative analysis of predictors of sense of place dimensions: Attachment to, dependence on, and identification with lakeshore properties. *Journal of Environmental Management*, 79(3), 316-327.
- Jovchelovitch, S., 1996. In defence of representations. *Journal for the Theory of Social Behaviour*, 26(2), 121-135.
- Junker, B. & Buchecker, M., 2008. Aesthetic preferences versus ecological objectives in river restorations. *Landscape and Urban Planning*, 85(3-4), 141-154.
- Junker, B., Buchecker, M. & Müller-Böker, U., 2007. Objectives of public participation: Which actors should be involved in the decision making for river restorations? *Water Resources Research*, 43(10).
- Kaltenborn, B.P. & Bjerke, T., 2002. Associations between environmental value orientations and landscape preferences. *Landscape and Urban Planning*, 59(1), 1-11.
- Kaplan, R. & Kaplan, S., 1989. *Experience of nature: a psychological perspective*. Cambridge: Cambridge University Press.
- Kaplan, R., Kaplan, S. & Ryan, R. L., 1998. *With people in mind. Design and Management of Everyday Nature*. Washington DC: Island Press.
- Kaplan, R. & Talbot, J.F., 1988. Ethnicity and preference for natural settings: a review and recent findings. *Landscape & Urban Planning*, 15(1-2), 107-117.
- Kaplan, S., 1983. A model of person-environment compatibility. *Environment and Behavior*, 15, 311-332.
- Kaufman, S. & Smith, J., 1999. Framing and reframing in land use change conflicts. *Journal of architectural and planning research*, 16(2), 164-180.
- Keltner, D. & Haidt, J., 2003. Approaching awe, a moral, spiritual, and aesthetic emotion. *Cognition and Emotion*, 17(2), 297-314.
- Kempton, W., Boster, J.S. & Hartley, J.A., 1995. *Environmental Values in American Culture*. Cambridge: MIT Press.

- Kennedy, J. J., & Koch, N. E., 2004. Viewing and managing natural resources as human-ecosystem relationships. *Forest Policy and Economics*, 6(5), 497-504.
- Keulartz, J., Swart, S. & Van der Windt, H.J., 2000. *Natuurbeelden en natuurbeleid: theoretische en empirische verkenningen*. Den Haag: NWO Ethiek & Beleid.
- Keulartz, J., Van der Windt, H. & Swart, J., 2004. Concepts of nature as communicative devices: The case of Dutch nature policy. *Environmental values*, 13(1), 81-99.
- Klaver, I., Keulartz, J., Van den Belt, H. & Gremmen, B., 2002. Born to be wild: A pluralistic ethics concerning introduced large herbivores in the Netherlands. *Environmental Ethics*, 24(1), 3-21.
- Knight, A.J., 2008. "Bats, snakes and spiders, Oh my!" How aesthetic and negativistic attitudes, and other concepts predict support for species protection. *Journal of Environmental Psychology*, 28(1), 94-103.
- Kockelkoren, P.J.H., 1993. *Van een plantaardig naar een plant-waardig bestaan: ethische aspecten van biotechnologie bij planten*. Den Haag: Ministerie van Landbouw, Natuurbeheer en Visserij.
- Kohler-Koch, B., & Eising, R., 1999. *The Transformation of Governance in the European Union*. London: Routledge.
- Koole, S.L. & Berg, A.E. v. d., 2004. Paradise lost and reclaimed: An existential motives analysis of human-nature relations. In S. I. K. T. P. J. Greenberg (Ed.), *Handbook of experimental existential psychology*. New York: Guildford.
- Koopmans, R. & Olzak, S., 2004. Discursive opportunities and the evolution of right-wing violence in Germany. *American Journal of Sociology*, 110(1), 198-230.
- Korfatis, K.J., Stamou, A. G. & Paraskevopoulos, S., 2004. Images of Nature in Greek Primary School Textbooks. *Science Education*, 88(1), 72-89.
- Korpela, K.M., Klemettila, T. & Hietanen, J.K., 2002. Evidence for rapid affective evaluation of environmental scenes. *Environment and Behavior*, 34(5), 634-650.
- Krömker, D., 2004. *Naturbilder, Klimaschutz und Kultur*. Beltz: Weinheim.
- Kubal, T.J., 1998. The Presentation of Political Self: Cultural Resonance and the Construction of Collective Action Frames. *The Sociological Quarterly*, 39(4), 539-554.
- Kuindersma, W., 2002. *Bestuurlijke trends en het natuurbeleid*. Wageningen: Natuurplanbureau.
- Kuindersma, W. & Kolkman, G., 2006. *Vertrouwen en samenwerking in het experiment Gaasterland: een procesevaluatie over tien jaar natuurontwikkeling(en)*. Wageningen: Alterra.
- Lakoff, G. & Johnson, M., 1980. *Metaphors we live by*. Chicago: University of Chicago Press
- Lawrence, A., 2006. 'No personal motive?' Volunteers, Biodiversity, and the false dichotomies of participation. *Ethics, Place and Environment*, 9(3), 279-298.

- Lemaire, T., 1996. Verloren landschap. *De Gids*, 120-123.
- Lengkeek, J., 1996. *Vakantie van het leven: over het belang van recreatie en toerisme*. Amsterdam: Boom.
- Lengkeek, J., 2000. De culturele en emotionele betekenis van water. In H. S. J.G. de Wit, F. Duijnhouwer (Ed.), *Over stromen, kennis- en innovatieopgaven voor een waterrijke Nederland* (pp. 11-34). Den Haag: NRLO-rapport nmr. 2000/7.
- Leopold, A., 1949. *A Sand Country Almanac*. Oxford: Oxford University Press.
- Lewicki, R.J. & Gray, B., 2003. *Making sense of intractable environmental conflicts: frames and cases*. Washington D.C.: Island Press.
- Lewin, K., 1951. *Field theory in social science: Selected theoretical papers*. New York: Harper.
- Lindström, M., Johansson, M., Herrmann, J. & Johnsson, O., 2006. Attitudes towards the conservation of biological diversity - A case study in Kristianstad Municipality, Sweden. *Journal of Environmental Planning and Management*, 49(4), 495-513.
- LNV, 2000. *Natuur voor mensen, mensen voor natuur; Nota Natuur, Bos en Landschap in de 21e eeuw*. Den Haag: Ministerie van LNV.
- LNV, 1990. *Natuurbeleidsplan; Regeringsbeslissing*. Den Haag: SDU.
- Lockwood, M., 1999. Humans Valuing Nature: Synthesising Insights from Philosophy, Psychology and Economics. *Environmental Values*, 8(3), 381.
- Lothian, A., 1999. Landscape and the philosophy of aesthetics: Is landscape quality inherent in the landscape or in the eye of the beholder? *Landscape and Urban Planning*, 44(4), 177-198.
- Lub, J., 2000. Het Edese Bos. Over vadertje Cats en frustraties in de A-lokaties. *Nederlands bosbouw tijdschrift*, 72(1), 6-10.
- Lutik, J., 2000. The value of trees, water and open space as reflected by house prices in the Netherlands. *Landscape and Urban Planning*, 48(3-4), 161-167.
- Maasen, M., 2004. *Natuurbeleving bij Turkse jongeren*. Nijmegen: Radboud University.
- MacCracken, G., 1988. *Culture and consumption: new approaches to the symbolic character of consumer goods and activities*. Bloomington: Indiana University Press.
- Macnaghten, P. M., 1991. *The force of nature: Empirical studies in the power of rhetoric.*, Dissertation University of Exeter, Exeter.
- Macnaghten, P., 2003. Embodying the environment in everyday life practices. *The Sociological review*, 51(1), 63-84+174.
- Macnaghten, P. & Urry, J., 1998. *Contested natures*. London: SAGE Publications.
- Makhzoumi, J.M., 2002. Landscape in the Middle East: An inquiry. *Landscape Research*, 27(3), 213-228.
- Manfredo, M.J., Pierce, C.L., Fulton, D., Pate, J. & Gill, B.R., 1999. Public acceptance of wildlife trapping in Colorado. *Wildlife Society bulletin*, 27(2), 499-508.
- Manfredo, M.J., Teel, T.L. & Bright, A.D., 2003. Why are public Values toward Wildlife changing? *Human Dimensions of Wildlife*, 8, 287-306.

- Markova, I., 2000. Amédée or how to get rid of It: Social representations from a dialogical perspective. *Culture and Psychology*, 6(4), 419-460.
- Marshall, K., White, R., & Fischer, A., 2007. Conflicts between humans over wildlife management: On the diversity of stakeholder attitudes and implications for conflict management. *Biodiversity and Conservation*, 16(11), 3129-3146.
- Mayer, F.S. & McPherson Frantz, C., 2004. The connectedness to nature scale: A measure of individuals' feeling in community with nature. *Journal of environmental psychology*, 24(4), 503-515.
- Miller J.R., 2005. Biodiversity conservation and the extinction of experience. *Trends in Ecology and Evolution* 20, 430-444.
- Ministry of V&W., 2007. *Ruimte voor de rivier PKB deel 4*. The Hague: Ministry of V&W.
- Moliner, P., 1996. *Images et représentations sociales*. Grenoble: Presses universitaires de Grenoble.
- Morris C. & Wragg A., 2003. Talking about the birds and the bees: Biodiversity claim making at the local level. *Environmental Values* 12, 71-90.
- Moscovici, S., 1961/1976. *La psychanalyse, son image et son public*. Paris: Presses Universitaires de France.
- Moscovici, S., 1984. The Phenomenon of Social representations. In R. Farr & S. Moscovici (Eds.), *Social Representations* (pp. 3-69). Cambridge: Cambridge University Press.
- Moscovici, S., 2000. *Social Representations. Explorations in Social Psychology*. Cambridge: Polity Press.
- Nas, M., Dekker, P. & Hemmers, C., 1997. *Maatschappelijke organisaties, publieke opinie en milieu*. Rijswijk: Sociaal en Cultureel Planbureau.
- Nash, R., 1973. *Wilderness and the American mind*. New Haven: Yale University Press.
- Nassauer, J.I., 1997. Cultural Sustainability: Aligning Aesthetics and Ecology. In J. I. Nassauer (Ed.), *Placing Nature: Culture and Landscape Ecology*. Washington D.C.: Island Press.
- Nassauer, J.I., 2004. Monitoring the success of metropolitan wetland restorations: Cultural sustainability and ecological function. *Wetlands*, 24(4), 756-765.
- Nassauer, J.I., Kosek, S.E. & Corry, R.C., 2001. Meeting public expectations with ecological innovation in riparian landscapes. *Journal of the American Water Resources Association*, 37(6), 1439-1443.
- Nassauer, J.I. & Opdam, P., 2008. Design in science: Extending the landscape ecology paradigm. *Landscape Ecology*, 23(6), 633-644.
- Natuurmonumenten., 2007. *Jaarverslag 2006*. 's-Graveland: Natuurmonumenten.
- Nelissen, N., Perenboom, R. & Peters, P., 1987. *De Nederlanders en hun milieu: een onderzoek naar het milieubesef en het milieugedrag van vroeger en nu*. Zeist: Kerckebosch.

- Nelson, T.E., Oxley, Z.M. & Clawson, R.E., 1997. Toward a psychology of framing effects. *Political behavior*, 19(3), 221-246.
- Nienhuis, R.H. & Leuven, R.S.E.W., 2001. River restoration and flood protection: Controversy or synergism? *Hydrobiologia*, 444, 85-99.
- O'Rourke, E., 2000. The reintroduction and reinterpretation of the wild. *Journal of Agricultural and Environmental Ethics*, 13(1-2), 145-165.
- Open Polders., 2009. Behoud Eilandspolder. Retrieved 16-04, 2009, from [www.openpolders.nl](http://www.openpolders.nl)
- Owens, S., 2000. 'Engaging the public': information and deliberation in environmental policy. *Environment and Planning A*, 32, 1141-1148.
- Passmore, J., 1974. *Man's responsibility for nature. Ecological problems and Western Traditions*. London: Duckworth.
- PBL., 2009. *Milieu en natuurcompendium*. Retrieved 02-02-2009, from [www.milieuennatuurcompendium.nl](http://www.milieuennatuurcompendium.nl).
- Petts, J., 2006. Expert conceptualisations of the role of lay knowledge in environmental decisionmaking: Challenges for deliberative democracy. *Environment and planning. A*, 38(6), 1045-1059.
- Phalet, K. & Haker, F., 2004. *Moslim in Nederland*. Den Haag: Sociaal en Cultureel Planbureau
- Pierre, J., 2000. *Debating governance*. Oxford: Oxford University Press.
- Pivetti, M., 2007. Natural and unnatural: Activists' representations of animal biotechnology. *New Genetics and Society*, 26(2), 137-157.
- Potter, J. & Edwards, D., 1999. Social representations and discursive psychology: From cognition to action. *Culture & psychology*, 5(4), 447-458.
- Potter, J. & Wetherell, M., 1987. *Discourse and social psychology: beyond attitudes and behaviour*. London: Sage.
- Purcell, A.T., 1986. Environmental perception and affect: a scheme discrepancy model. *Environment and Behavior*, 18, 3-30.
- Purcell, A.T. & Lamb, R. J., 1998. Preference and naturalness: An ecological approach. *Landscape and urban planning*, 42(1), 57-66.
- Reckwitz, A., 2002. Toward a Theory of Social Practice. *European Journal of Social Theory*, 5(2), 243-263.
- Relph, E., 1976. *Place and placelessness*. London: Pion.
- Ribe, R.G., 2002. Is scenic beauty a proxy for acceptable management? The influence of environmental attitudes on landscape perceptions. *Environment and Behavior*, 34(6), 757-780.
- Rientjes, S., 2002. Making nature conservation modern: An analysis of developments in nature conservation policy in relation to macro-social changes - The Netherlands as a case study. *Journal of Environmental Policy and Planning*, 4(1), 1-21.

- Rink, D., 2005. Surrogate Nature or Wilderness? Social Perceptions and Notions of Nature in an Urban Context. In I. Kowarik & S. Körner (Eds.), *Wild Urban woodlands* (pp. 67-80). Berlin: Springer.
- Rishbeth, C., 2001. Ethnic minority groups and the design of public open space: An inclusive landscape? *Landscape Research*, 26(4), 351-366.
- Ryan, R.L., 1998. Local perceptions and values for a midwestern river corridor. *Landscape and Urban Planning*, 42(2-4), 225-237.
- Ryan, R.L., 2005. Exploring the effects of environmental experience on attachment to urban natural areas. *Environment and Behavior*, 37(1), 3-42.
- Salverda, I. & van Dam, R., 2008. *Voorbeelden van burgerparticipatie en maatschappelijk initiatief: quick scan ten behoeve van de Agenda Landschap*. Wageningen: Alterra, Wageningen UR .
- Schama, S., 1995. *Landscape and Memory*. London: Harper Collins.
- Schatzki, T.R., 2005. The sites of organizations. *Organization Studies*, 26(3), 465-484.
- Schatzki, T.R. & Knorr Cetina, K., 2001. *The practice turn in contemporary theory*. London: Routledge.
- Scheufele, D.A., 1999. Framing as a theory of media effects. *J Commun*, 49(1), 103-122.
- Schön, D.A. & Rein, M., 1994. *Frame reflection: toward the resolution of intractable policy controversies*. New York: BasicBooks.
- Schouten, M.G.C., 2005. *Spiegel van de natuur. Het natuurbeeld in cultuurhistorisch perspectief*. Utrecht: KNNV Uitgeverij.
- Schultz, P.W., 2001. The structure of environmental concern: Concern for self, other people, and the biosphere. *Journal of environmental psychology*, 21(4), 327-339.
- Schultz, P.W., Zelezny, L. & Dalrymple, N.J., 2000. A Multinational Perspective on the Relation Between Judeo-Christian Religious Beliefs and Attitudes of Environmental Concern. *Environment and Behavior*, 32(4), 576-591.
- Schutz, A., 1962. *Collected papers I: The problem of social reality*. The Hague: Martinus Nijhoff
- Schwartz, S.H., 1977. Normative influences on altruism. In L. Berkowitz (Ed.), *Advances in experimental social psychology* (Vol. 10, pp. 221-279). New York: Academic Press.
- Scott, D., 2004. *The Enduring Wilderness: Protecting Our Natural Heritage through the Wilderness Act*. Golden, USA: Fulcrum Publishing.
- Shmueli, D.F., 2008. Framing in geographical analysis of environmental conflicts: Theory, methodology and three case studies. *Geoforum*, 39(6), 2048-2061.
- Sims-Schouten, W., Riley, S.C.E. & Willig, C., 2007. Critical realism in discourse analysis: A presentation of a systematic method of analysis using women's Talk of motherhood, childcare and female employment as an example. *Theory and Psychology*, 17(1), 101-124.

- Skogen, K., 1999. Another look at culture and nature: How culture patterns influence environmental orientation among Norwegian youth. *Acta sociologica*, 42(3), 223-239.
- Skogen, K., 2003. Adapting adaptive management to a cultural understanding of land use conflicts. *Society & natural resources*, 16(5), 435-450.
- Skogen, K., 2008. Wolves in Context: Using Survey Data to Situate Attitudes Within a Wider Cultural Framework. *Society & natural resources*, 21(1), 17.
- Soini, K., & Aakkula, J., 2007. Framing the biodiversity of agricultural landscape: The essence of local conceptions and constructions. *Land Use Policy*, 24(2), 311-321.
- Staats, H., & Hartig, T., 2004. Alone or with a friend: A social context for psychological restoration and environmental preferences. *Journal of Environmental Psychology*, 24(2), 199-211.
- Staats, H., & Wardt, J. W. van der., 1990. Changing a small-scape landscape: environmental psychology applied to the problems of the countryside. *Netherlands Journal of Housing and Environmental Research*, 5, 65-86.
- Staatsbosbeheer., 2006. *Verslag van de visitatie van Staatsbosbeheer*. Driebergen: Staatsbosbeheer.
- Staatsbosbeheer., 2007. *Jaarverslag 2006*. Driebergen: Staatsbosbeheer.
- Stamps III, A.E., 2004. Mystery, complexity, legibility and coherence: A meta-analysis. *Journal of Environmental Psychology*, 24(1), 1-16.
- Stedman, R.C., 2002. Toward a social psychology of place: Predicting behavior from place-based cognitions, attitude, and identity. *Environment and Behavior*, 34(5), 561-581.
- Stedman, R.C., 2003. Is it really just a social construction?: The contribution of the physical environment to sense of place. *Society & natural resources*, 16(8), 671-685.
- Steg, L., & Buijs, A.E., 2004. *Psychologie en duurzame ontwikkeling*. Nijmegen: UCM-DO/KUN.
- Stenmark, M., 2002. The relevance of environmental ethical theories for policy making. *Environmental ethics*, 24(2), 135-148.
- Stern, P.C., 2000. Toward a coherent theory of environmentally significant behavior. *The Journal of social issues*, 56(3), 407-424.
- Stern, P.C. & Dietz, T., 1994. The value basis of environmental concern. *The Journal of social issues*, 50(3), 65-84.
- Stoll-Kleemann, S., 2001. Barriers to nature conservation in Germany: A model explaining opposition to protected areas. *Journal of environmental psychology*, 21(4), 369-385.
- Strauss, A. & Corbin, J., 1990. *Basics of Qualitative Research. Grounded Theory Procedures and Techniques*. Newsbury: SAGE Publications.

- Strumse, E., 1994. Environmental attributes and the prediction of visual preferences for agrarian landscapes in western Norway. *Journal of Environmental Psychology*, 14, 293-303.
- Sundstrom, E., Bell, P.A., Busby, P.L. & Asmus, C., 1996. Environmental psychology 1989-1994. *Annual review of psychology*, 47, 485-512.
- Swart, J.A.A., Van der Windt, H.J. & Keulartz, J., 2001. Valuation of nature in conservation and restoration. *Restoration ecology*, 9(2), 230-238.
- Swidler, A., 1986. Culture in action: symbols and strategies. *American Sociological Review*, 51(2), 273-286.
- Swyngedouw, E., 2005. Governance innovation and the citizen: The Janus face of governance-beyond-the-state. *Urban Studies*, 42(11), 1991-2006.
- Taylor, P.W., 1986. *Respect for nature: a theory of environmental ethics*. Princeton: Princeton University Press.
- Taylor, S.E., Peplau, L.A. & Sears, D.O., 2006. *Social Psychology* (12 ed.). London: Pearson Education.
- Teel, T.L., Dayer, A.A., Manfredo, M.J. & Bright, A.D., 2005. *Regional results from the research project entitled "Wildlife Values in the West."* Fort Collins: Colorado State University.
- Teel, T.L., Manfredo, M.J. & Stinchfield, H.M., 2007. The need and theoretical basis for exploring wildlife value orientations cross-culturally. *Human Dimensions of Wildlife*, 12(5), 297-305.
- Thompson, M., Ellis, R. & Wildavsky, A., 1990. *Cultural Theory*. Boulder, C.O.: Westview.
- Thompson, S.C.G. & Barton, M.A., 1994. Ecocentric and anthropocentric attitudes toward the environment. *Journal of environmental psychology*, 14(2), 149-157.
- Tonkens, E., 2003. *Mondige burgers, getemde professionals*. Utrecht: NIZW Sociaal Beleid
- Tuan, Y.F., 1974. *Topophilia: a study of environmental perception, attitudes, and values*. Englewood Cliffs: Prentice Hall.
- Tunstall, S.M., Penning-Roswell, E.C., Tapsell, S.M. & Eden, S.E., 2000. River restoration: Public attitudes and expectations. *Journal of the Chartered Institution of Water and Environmental Management*, 14(5), 363-370.
- Turnhout, E., 2004. The role of views of nature in Dutch nature conservation: The case of the creation of a drift sand area in the Hoge Veluwe National Park. *Environmental values*, 13(2), 187-198.
- Turnhout, E., Hisschemöller, M., & Eijsackers, H., 2007. Ecological indicators: Between the two fires of science and policy. *Ecological Indicators*, 7(2), 215-228.
- Tveit, M., Ode, A. & Fry, G., 2006. Key concepts in a framework for analysing visual landscape character. *Landscape Research*, 31(3), 229-255.

- Tyrväinen, L., Silvennoinen, H., & Kolehmainen, O., 2003. Ecological and aesthetic values in urban forest management. *Urban Forestry and Urban Greening*, 1(3), 135-149.
- Ulrich, R.S., 1981. Natural versus urban scenes: Some psychophysiological effects. *Environment and Behavior*, 13.
- Ulrich, R.S., 1983. Aesthetic and affective response to natural environment. In I. Altman & J. F. Wohlwill (Eds.), *Behavior and the natural environment* (pp. 85-125). New York: Plenum Press.
- Ulrich, R.S., 1986. Human responses to vegetation and landscapes. *Landscape and Urban Planning*, 13, 29.
- Ulrich, R.S., 1993. Biophilia, biophobia and natural landscapes. In S. R. Kellert & E. O. Wilson (Eds.), *The biophilia hypothesis*. Washington DC: Island press.
- Van Amstel, A.R., Hergreen, G.F.W., Meyer, C.S., Schoorl-Groen, E.F. & Veen, H.E. v. d., 1988. *Vijf visies op natuurbewoud en natuurontwikkeling. Knelpunten en perspectieven van deze visies in het licht van de huidige maatschappelijke ontwikkelingen*. Amsterdam - Rijswijk: Instituut voor Milieuvraagstukken en Raad voor het Milieu- en Natuuronderzoek. RMNO publ. nr. 30.
- Van Bommel, S., 2008. *Understanding experts and expertise in different governance contexts: the case of nature conservation in the Drentsche Aa area in the Netherlands*. Unpublished Proefschrift Wageningen
- Van den Berg, A.E., 1999. *Individual differences in the aesthetic evaluation of natural landscapes*. Unpublished dissertation. Groningen: Groningen University.
- Van den Berg, A.E., De Vries, D. & Vlek, C.A.J., 2006. Images of nature, environmental values, and landscape preference: exploring their relationships. In R. J. G. Van den Born, R. H. J. Lenders & W. T. De Groot (Eds.), *Visions of nature: A scientific exploration of people's implicit philosophies regarding nature in Germany, the Netherlands and the United Kingdom* (pp. 41-60). Münster: LIT-Verlag.
- Van den Berg, A.E. & Koole, S.L., 2006. New wilderness in the Netherlands: An investigation of visual preferences for nature development landscapes. *Landscape and Urban Planning*, 78(4), 362-372.
- Van den Berg, A.E. & Ter Heijne, M., 2005. Fear versus fascination: An exploration of emotional responses to natural threats. *Journal of Environmental Psychology*, 25(3), 261-272.
- Van den Berg, A.E., Vlek, C.A. J. & Coeterier, J.F., 1998. Group differences in the aesthetic evaluation of nature development plans: A multilevel approach. *Journal of Environmental Psychology*, 18(2), 141-157.
- Van den Born, R.J.G., 2007. *Thinking Nature. Everyday philosophy of nature in the Netherlands*. Radboud University, Nijmegen.

- Van den Born, R. J. G., Lenders, R. H. J., Groot, d., W.T., & Huijsman, E., 2001. The new biophilia: An exploration of visions of nature in western countries. *Environmental conservation*, 28(1), 65-75.
- Van den Brink, M. & Metzke, T., 2006. *Words matter in policy and planning: discourse theory and method in the social sciences*.
- Van der Molen, D.T. & Buijse, A.D., 2005. An evaluation of benefits of lowland river-floodplain rehabilitation. (The Rhine, the Netherlands) 15. p. 443-464. *Archiv für Hydrobiologie Supplement 155, Large Rivers, 15*, 443-464.
- Van der Windt, H.J., 1995. *En dan: wat is natuur nog in dit land? Natuurbescherming in Nederland 1880 - 1990*. Amsterdam: Boom.
- van der Windt, H.J., Swart, J.A.A. & Keulartz, J., 2007. Nature and landscape planning: Exploring the dynamics of valuation, the case of the Netherlands. *Landscape and Urban Planning*, 79(3-4), 218-228.
- Van der Wulp, N.Y., 2008. *Belevingswaardenmonitor Nota Ruimte 2006: nulmeting landschap naar gebieden*. Wageningen: Wettelijke Onderzoekstaken Natuur & Milieu.
- Van der Zouwen, M., 2006. *Nature policy between trends and traditions*. Nijmegen: Radboud University.
- Van Koppen, C.S.A., 1997. Claims of Culture. Social Representations of Nature and their Consequences for Agriculture. In H. de Haan & N. Long (Eds.), *Images and realities of rural life. Wageningen Perspectives on Rural Transformations* (pp. 287-305). Assen: Van Gorcum.
- Van Koppen, C.S.A., 2000. Resource, arcadia, lifeworld. Nature concepts in environmental sociology. *Sociologia ruralis*, 40(3), 300-318.
- Van Koppen, C.S.A., 2002. *Echte natuur: een sociaalthooretisch onderzoek naar natuurwaardering en natuurbescherming in de moderne samenleving*. Wageningen University, Wageningen.
- Van Marwijk, R., 2009. *These paths are made for walking*. Wageningen University, Wageningen.
- Van Marwijk, R., Elands, B.H.M. & Lengkeek, J., 2007. Experiencing nature: The recognition of the symbolic environment within research and management of visitor flows. *Forest Snow and Landscape Research*, 81(1-2), 59-76.
- Van Stokkom, H.T.C., Smits, A.J.M. & Leuven, R.S.E.W., 2005. Flood defence in The Netherlands: A new era, a new approach. *Water International*, 30(1), 76-87.
- Vaske, J.J. & Donnelly, M.P., 1999. A value-attitude-behavior model predicting wildland preservation voting intentions. *Society and Natural Resources*, 12(6), 523-537.
- Vaske, J.J., Donnelly, M.P., Williams, D.R. & Jonker, S., 2001. Demographic influences on environmental value orientations and normative beliefs about national forest management. *Society and Natural Resources*, 14(9), 761-776.

- Viriden, R.J. & Walker, G.J., 1999. Ethnic/Racial and gender variations among meanings given to, and preferences for, the natural environment. *Leisure Sciences*, 21, 219-239.
- Voelklein, C. & Howarth, C., 2005. A review of controversies about social representations theory: A British debate. *Culture and Psychology*, 11(4), 431-454.
- Voorstuis, B., 2002. *Zwijgende natuur. Natuurervaring tussen betovering en onttovering*. Zoetermeer: Meinema.
- Wagner, W., 1996. Queries about social representation and construction. *Journal for the Theory of Social Behaviour*, 26(2).
- Wagner, W., 1998. Social representations and beyond: Brute facts, symbolic coping and domesticated worlds. *Culture & psychology*, 4(3), 297-329.
- Wagner, W., Duveen, G., Farr, R., Jovchelovitch, S., Lorenzi-Cioldi, F. & Markova, I., et al., 1999. Theory and method of social representations. *Asian Journal of Social Psychology*, 2(1), 95-125.
- Wals, A., 1994. Nobody Planted It, It Just Grew! Young Adolescents' Perceptions and Experiences of Nature in the Context of Urban Environmental Education. *Children's Environments*, 11(3), 1-27.
- Wallington T.J., Hobbs R.J. & Moore S.A., 2005. Implications of Current Ecological Thinking for Biodiversity Conservation: A Review of the Salient Issues. *Ecology and Society* 10, 15–24.
- Walton, B.K. & Bailey, C., 2005. Framing wilderness: Populism and cultural heritage as organizing principles. *Society and Natural Resources*, 18(2), 119-134.
- Warren C., 2002. *Managing Scotland's environment*. Edinburgh: Edinburgh University Press.
- Weber, M., 1904/1991. Die "Objektivität" sozialwissenschaftlicher und sozialpolitischer Erkenntnis. Stuttgart: Reclam.
- Welsch, W., 1996. *Vernunft: Die zeitgenössische Vernunftkritik und das Konzept der transversalen Vernunft*. Frankfurt: Suhrkamp.
- Whittaker, D., Vaske, J. J. & Manfredi, M.J., 2006. Specificity and the cognitive hierarchy: Value orientations and the acceptability of urban wildlife management actions. *Society and Natural Resources*, 19(6), 515-530.
- Wiering, M.A. & Arts, B.J.M., 2006. Discursive shifts in Dutch river management: 'Deep' institutional change or adaptation strategy? *Hydrobiologia*, 565(1 SPEC. ISS.), 327-338.
- Winter, C., 2005. Preferences and values for forests and wetlands: A comparison of farmers, environmentalists, and the general public in Australia. *Society and Natural Resources*, 18(6), 541-555.

- Winter, C., 2007. The intrinsic, instrumental and spiritual values of natural area visitors and the general public: A comparative study. *Journal of Sustainable Tourism*, 15(6), 599-614.
- Woestenburg, M., Buijs, A. & W. Timmermans, W., 2003. *Wie is bang voor de stad? Essays over ruimtelijke ordening, natuur en verstedelijking*. Wageningen: Blauwdruk.
- Wohlwill, J.F., 1983. The concept of nature: a psychologist's view. In L. Altman, Wohlwill, J.F. (Ed.), *Human behavior and environment: advances in theory and research* (Vol. 6, pp. 5-37). New York: Plenum Press.
- Wolsink, M., 2006. River basin approach and integrated water management: Governance pitfalls for the Dutch Space-Water-Adjustment Management Principle. *Geoforum*, 37(4), 473-487.
- Worster, D., 1985. *Nature's Economy: A history of ecological ideas*. Cambridge: Cambridge University Press.
- Woudreus, 2009. Kappen met kappen. Retrieved 16-04, 2009, from [www.woudreus.nl](http://www.woudreus.nl)
- Wynne, B., 1996. May the sheep sagely graze? A reflexive view of the expert-lay knowledge divide. In S. Lash, B. Szerszynski & B. Wynne (Eds.), *Risk, environment & modernity, towards a new ecology*. London: Sage Publications.
- Yin, R.K., 2003. *Case study research: design and methods* (3 ed.). Thousand Oaks, CA Sage.
- Young, I. M., 2000. *Inclusion and democracy*. Oxford: Oxford University Press.
- Zube, E.H. & Pitt, D.G., 1981. Cross-cultural perceptions of scenic and heritage landscapes. *Landscape Planning*, 8(1), 69-87.
- Zube, E. H., Sell, J. L., & Taylor, J. G., 1982. Landscape perception: Research, application and theory. *Landscape and Planning*, 9(1), 1-33.
- Zweers, W., 1995. *Participeren aan de natuur: ontwerp voor een ecologisering van het wereldbeeld*. Utrecht: Van Arkel.



# Summary



## Summary

Nature policy on the national level in the Netherlands is undergoing a shift from an ecological focus to a combination of an ecological and a societal focus. Also changes in the society at large influence nature policy on all spatial scales. For example ongoing individualization has resulted in a much more fragmented social structure, and the activities, demands, and responses of citizens have become very diverse. Furthermore, natural areas are experiencing the effects of counter-urbanization, the rise of post-material values, and the heightened importance of the symbolic meanings of natural areas, resulting in what has been called an “experience society”. Finally, citizens have become much more articulate and are more inclined to explicitly state their opinions on all kinds of issues, including those related to land use. Consequently, policy makers and site managers are frequently confronted by the differences in views that exist between experts and lay people, as well as by the diversity of views, demands, and interests that exist among the general public.

This thesis focuses on the differences in views on nature held by different groups among the general public and between the public and professionals in the field of nature policy and management. Theoretically, I introduce the concept of social representations of nature and investigate whether the variety of views can be summarized into a limited number of comprehensive representations of nature. Empirically, I combine more general studies into the substance of the different views on nature with very contextual studies focussing on social processes in local communities that are related to socio-political issues in the field of environmental management. This explicit grounding in local and regional policies and management is intended to ensure both the empirical validity and the practical relevance of this thesis.

In Chapter 2, I reflect upon the dominant theoretical approaches in the study of the human–nature relationship. Approaches from environmental psychology and environmental sociology focus on such concepts as environmental values and landscape preferences in order to understand lay people’s attitudes toward nature management and their actual recreational behavior. Historical and philosophical investigations show the diversity in different time-periods and between different social groups. They show how as a result of Romanticism, the functional view of nature has gradually been replaced by two different versions of Romantic views on nature: the Arcadian view and the wilderness view. These views have been dominant ever since they first arose, and they can still be recognized today. Social constructivist approaches focus on the discursive framing of nature management practices by different stakeholders (including residents). Based on the reflections on these approaches, I outline the criteria to be met by the conceptual framework of this thesis.

In Chapter 3, I introduce the concept of social representations of nature in order to meet the above-mentioned criteria. Social representations theory has often been called a social psychology of knowledge. The focus is on how social groups develop common-sense knowledge as a joint effort. How do people understand the social and material world around them, and what meanings do they attach to that world? The theory of social representations combines elements from psychology and social constructivism. For example, it incorporates the concepts of values and beliefs from psychology, and the importance of communication and discourse from social constructivism.

The concept of social representations draws attention not only to the sociogenesis of representations of nature, but also to the symbolic character of these representations: Social representations of nature are the meanings we attribute to “nature.” Furthermore, social representations of nature are comprehensive and holistic concepts. They can be conceived as a web of interrelated meanings that a specific social group attributes to nature. A final characteristic of social representations is that there are usually competing representations. Not all social groups will have developed the same representation, and conflicting representations may result in conflicts between different social groups.

For methodological reasons, I differentiate between social representations of nature and individual images of nature. Social representations of nature are not restricted to the individual realm of cognitions (as in environmental psychology) or to the social realm of discourse (as in many social constructivist accounts), but are developed in the encounters between individuals, the social group to which they belong, and the natural environments they experience.

What are the functions of social representations of nature? In my view, social representations of nature can be considered a cultural resource. They function as a resource for our individual understanding of nature and, related to this understanding, they inform our actions. In our experience of natural areas, they provide us with a symbolic shorthand for the interpretation of our sensory inputs. Furthermore, social representations of nature also serve as a cultural resource for discursive actions. Especially in practices where the natural environment has become the issue of socio-political conflicts, the discursive functions of social representations of nature may be more important than their non-discursive functions. When engaged in such practices, people strategically select specific elements from a representation of nature to discursively pursue valued ends. This is the use of social representations in the framing of socio-political issues.

This theoretical approach is used in five empirical chapters, four of which have been published in scientific journals and one is under review.

In Chapter 4, I describe a qualitative study into the dominant images of nature held by Dutch lay people, and argue for a more holistic approach that integrates various attitudinal components into comprehensive images of nature. Based on fifty-nine interviews, I describe several ideal types of images of nature: the wilderness image, the autonomy image, the inclusive image, the aesthetic image, and the functional image. These images have different implications for natural resource management. The wilderness image is based on the ecocentric value of nature, that is the holistic interpretation of the intrinsic value of nature. It furthermore focuses on the independence of nature and the absence of visible human influence. The autonomy image is closely linked to the wilderness image, but here the focus is on a smaller geographical scale. The inclusive image focuses also on the intrinsic value, but contrary to the wilderness image, the intrinsic value is interpreted in a more individualistic manner. Value is assigned to individual plants and animals and the focus is not on protecting abstract ecosystems or habitats but on the well-being of individual plants and animals. This value has been called the biocentric value of nature. The aesthetic image is a weak anthropocentric image, focusing on scenic and diverse landscapes. The functional image focuses on anthropocentric values and intensive management.

In this chapter, I suggest that integrating the pluralism of cognitions into images of nature may help managers to understand conflicts that are based on divergent opinions on local nature conservation practices. In participation processes, images of nature may function as sensitizing concepts to facilitate discussions between experts and the general public.

Chapter 5 focuses on the influence of immigration on social representations, individual images of nature, and landscape preferences. In it, I show how despite the growing cultural diversity in many European countries, nature recreation is still a very “white” activity. Immigrants hardly ever visit non-urban green areas. Basing myself on 618 questionnaires, I investigate the extent to which immigrants from Islamic countries and the native Dutch hold different images of nature and landscape preferences. Native Dutch people are strong supporters of the wilderness image, while immigrants generally support the functional image. In addition, landscape preferences differ significantly between immigrants and native Dutch people. Immigrants show lower preferences for non-urban landscapes in general. Especially their appreciation of wild and unmanaged landscapes, like marshes and dunes, is much lower than that of native Dutch people.

Chapter 6 focuses on how people interpret and understand the concept of biodiversity. Although a lack of public support for and protests against biodiversity management measures have often been put down to the general public’s apparently

insufficient knowledge of biodiversity, the results of focus group discussions in the Netherlands, Germany, and Scotland show that members of the general public use very rich and complex social representations of biodiversity to argue for particular approaches to biodiversity management. Within these representations, several important components can be identified, such as (i) the functions and benefits associated with biodiversity, (ii) attributes and values connected to nature, and (iii) views on the relationships between humans and nature. Notions within these components vary across individuals and groups, and are closely linked to their views on biodiversity management in general and their attitudes toward specific management measures in particular.

Chapter 7 focuses on the relationship between social representations of nature and the framing of ecological restoration projects in Dutch floodplains. The study shows that local residents are generally supportive of river restoration projects. However, these positive effects may become contested because of the active framing of river restoration by protest groups.

Local residents use three distinct frames to give meaning to river restoration projects: (i) an attachment frame, focusing on cultural heritage and place attachment (ii) an attractive nature frame, focusing on nature as attractive living space and the intrinsic value of nature, and (iii) a rurality frame, focusing on rural values, agriculture, and cultural heritage. The resistance to the river restoration plans stems from the attachment and rurality frames. I investigate the use of social representations in these local framing processes, and show that the project initiator's focus on combining safety measures with improvement of the ecological value of the area did not resonate very well among the local community, because of their diverging representations of nature.

Chapter 8 more explicitly focuses on the relationship between social representations of nature and the framing of nature management plans in protected areas. I argue that through its focus on such volatile discourses, framing theory insufficiently relates to the broader, and more stable, cultural context in which framing efforts are situated. In order to strengthen the link between discursive framing strategies and the cultural background to such strategies, I suggest rethinking the concept of cultural resonance as the link between the dynamic framing of a conflict and the more stable cultural background of for example social representations of nature. Based on an environmental dispute over the management of a national park, this chapter illustrates how contending stakeholders refer to different social representations of nature in the framing of local environmental conflicts. It shows how a local protest group is much more in touch with the views of the local community and is thus more successful in its framing of the dispute than the nature conservation agency. Whereas the protest

group uses a wide range of elements from locally embedded social representations of nature to enhance the currency of its framing efforts, the nature conservation agency responsible for the management of the park refers to a much more limited range of representations. By making references only to the wilderness representation of nature, the cultural resonance of the agency's framing efforts remains limited to those residents who endorse this specific representation of nature. Consequently, the currency of its framing efforts among groups that endorse the inclusive or aesthetic representations of nature is not very high.

In Chapter 9 – the final chapter of this thesis – I formulate answers to the research questions. I describe the four dominant social representations among the Dutch public (table 9.1): the wilderness, the inclusive, the aesthetic, and the functional representation. The wilderness representation is based on a holistic, ecocentric interpretation of the intrinsic value of nature, targeted at protecting important habitats for valuable species. It focuses on hands-off management that is aimed at safeguarding natural processes. The autonomy of nature is considered one of its most important features, and naturalness – interpreted as the absence of visible human influence – is regarded as an important attribute of nature. The inclusive representation is based on the biocentric value of nature, an individualistic interpretation of the intrinsic value of nature, targeted at the well-being of individual animals and plants. It is oriented toward limited management related to the integrity and health of individual animals and trees. The boundaries of nature are less strict than in the wilderness representation. Nature is seen as fragile, but also as unpredictable and too complex to be fully grasped. In the aesthetic representation, the value of nature is based on weak anthropocentric values. Nature protection is important because of the amenity values of nature. People appreciate the aesthetics of and the recreational opportunities offered by such areas. Consequently, management should focus on the preservation and enhancement of scenic landscapes, and particularly on the diversity of well-groomed and cultivated landscapes. The functional representation is the only truly anthropocentric representation. Its value orientation focuses on the intensive management of nature, especially in relation to resource management. Nature is seen as a useful resource for, for example, agriculture or forestry. Nature is considered to be resilient, and changes in nature are part of natural developments.

The empirical studies presented in this thesis reveal several important differences in how experts and the public relate to and communicate on the natural environment. In representations developed by professionals, much of the focus is on the normative and the cognitive dimension of these representations, the latter primarily based on the scientific comprehension of nature. In public representations, this cognitive dimension is much less important, and is usually not scientifically based. In the public's representations, the focus is much more on the normative and the expressive

dimension, for example, related to aesthetics and the deeply felt connectiveness to nature. Although experts and the majority of the public endorse the intrinsic value of nature and the importance of nature conservation, it is on the direction of this general value of nature that differences emerge. Many experts interpret this value in a holistic manner, focusing on protecting habitats and species. Contrary to this, a large proportion of the public interpret the intrinsic value in a individualistic manner, in which intrinsic value is assigned only to individual living beings (“biocentrism”). According to such biocentric values, nature management should be evaluated on how it affects individual living beings, rather than abstract species or ecosystems.

However, not only substantial differences may be related to the emergence of conflicts on natural resource management. Also the framing of the dispute by the different stakeholders, and the cultural resonance of that framing is important in understanding how sometimes small disputes on substantial difference may end up in serious conflicts. In my studies, protest groups were much more effective in actively framing the issues and influencing the media than nature organizations and governmental bodies.

The empirical studies in this thesis demonstrate that negative attitudes toward nature conservation practices need not be related to a lack of support for nature conservation in general, nor to resistance to change. Opposition is often based on divergent social representations of nature. Therefore, while scientific knowledge is very valuable to reach ecological sustainability, finding common ground with public representations of nature is essential to maintain the cultural sustainability of protected areas.

# Samenvatting



## Samenvatting

Het Nederlandse natuurbeleid staat voor de uitdaging om de aansluiting bij de wensen van burgers verder te verbeteren. De eenzijdige nadruk op de ecologische aspecten van het beleid is de afgelopen jaren verbreed en het belang van natuur voor de mens heeft meer aandacht gekregen. Maar dit gaat niet zonder slag of stoot. Ook de samenleving rondom het natuurbeleid verandert en de wensen, activiteiten, en reacties van burgers zijn steeds meer gedifferentieerd geworden. Burgers zijn daarnaast mondiger geworden en de bevolkingssamenstelling van het landelijk gebied is veranderd, waardoor steeds meer met een stadse blik naar de natuurlijke omgeving wordt gekeken. Als gevolg hiervan worden beleidsmakers en natuurbeheerders steeds vaker geconfronteerd met afwijkende visies. Niet alleen tussen deskundigen en burgers, maar ook steeds vaker tussen burgers onderling.

Eén van de doelen van dit proefschrift is om meer inzicht te verschaffen in de verschillen tussen burgers onderling en tussen burgers en deskundigen. Dit doe ik door vijf praktijkstudies te presenteren over de verhouding tussen burgers, de natuur en het natuurbeheer (hoofdstuk 4 t/m 8). Dit proefschrift heeft ook tot doel het onderzoek naar de verhouding tussen de mens en zijn natuurlijke omgeving theoretisch verder te brengen. Dit doe ik door het begrip natuurbeelden theoretisch uit te werken aan de hand van de sociale representatie theorie (hoofdstuk 2 en 3).

In Hoofdstuk 2 van dit proefschrift beschrijf ik allereerst enkele belangrijke benaderingen in het huidige onderzoek. Benaderingen vanuit de omgevingspsychologie richten zich vaak op individuele waarden en landschapsvoorkeuren om de mening van burgers over het natuurbeheer en hun recreatiegedrag te begrijpen. Historische en milieufilosofische benaderingen richten zich vooral op de diversiteit aan waardesystemen en de veranderingen daarin door de tijd. Sociaal constructivistische benaderingen benadrukken dat de betekenissen van natuur geconstrueerd worden in communicatie (“discoursen”) tussen mensen. Gebaseerd op een kritische reflectie op deze benaderingen besluit ik het hoofdstuk met het formuleren van enkele criteria waaraan een bruikbare theorie in mijn ogen moet voldoen.

Om tegemoet te komen aan deze criteria beschrijf ik in hoofdstuk 3 het begrip natuurbeelden en introduceer de theorie over *sociale representaties* om dit begrip theoretisch uit te werken. Natuurbeelden zijn een soort common-sense kennis over de natuur: Met welke blik kijken mensen naar de natuur, welke concepten hanteren ze daarbij en welke waarden en overtuigingen hanteren ze? Natuurbeelden bestaan uit een aantal onderling samenhangende onderdelen, zoals de waarden die mensen

hechten aan de natuur, hun visies op het natuurbeheer, hun definities van natuur en hun overtuigingen over natuurlijke processen. Belangrijk uitgangspunt hierbij is dat natuurbeelden niet door ieder individu afzonderlijk worden ontwikkeld, maar door onderlinge communicatie en door onderlinge uitwisseling van ervaringen en ideeën. Ook bijvoorbeeld films en documentaires spelen hierbij een grote rol. Verschillende groepen zullen daarom ook verschillende natuurbeelden ontwikkelen. Natuurbeelden fungeren als hulpbron om ervaringen in de natuur betekenis te geven. Daarnaast verwijzing actoren in discussies rondom natuurbeheer vaak naar een specifiek natuurbeeld. Deze verwijzing wordt dan gebruikt als één van de argumenten in de “framing” van conflicten rondom natuurbeheer.

In hoofdstuk 4 beschrijf ik de belangrijkste natuurbeelden van de Nederlandse bevolking. Ik onderscheid hierbij vier dominante beelden:

- het wildernis natuurbeeld,
- het brede natuurbeeld,
- het esthetische natuurbeeld,
- functionele natuurbeeld.

Elk van deze natuurbeelden leidt tot verschillende visies op het natuurbeheer. Het wildernis beeld is gebaseerd op de ecocentrische waarde van de natuur, oftewel de holistische interpretatie van de intrinsieke waarde van natuur. Daarnaast is in dit natuurbeeld de onafhankelijkheid van de natuur en de afwezigheid van zichtbare menselijke aanwezigheid belangrijk. Het brede natuurbeeld is ook gebaseerd op de intrinsieke waarde van de natuur, maar in tegenstelling tot het wildernis beeld wordt deze waarde gericht op individuele dieren en planten. De nadruk ligt niet op het beschermen van abstracte ecosystemen, maar op het beschermen van de kwaliteit van het leven van individuele dieren en planten. Het esthetische natuurbeeld is een zwak antropocentrisch natuurbeeld, waarbij de nadruk ligt op aantrekkelijke en gevarieerde landschappen. Het natuurlijk evenwicht wordt belangrijk gevonden, maar ook het evenwicht tussen natuur en cultuur verdient aandacht. Het functionele beeld tenslotte richt zich op de antropocentrische waarde van de natuur en met veel aandacht voor natuur als hulpbron. In tegenstelling tot de meeste andere natuurbeelden wordt de natuur hierbij gezien als sterk en flexibel, en in staat zich aan te passen aan veranderende omstandigheden. In deze eerste studie wordt ook nog een vijfde beeld, het autonomie beeld, onderscheiden. Dit beeld blijkt in latere studies echter onvoldoende onderscheidend van het wildernis natuurbeeld, en wordt daarom verder buiten beschouwing gelaten.

Hoofdstuk 5 behandelt de verschillen in natuurbeelden tussen allochtone en autochtone Nederlanders. Gebaseerd op de observatie dat ondanks de toenemende

immigratie natuurrecreatie nog steeds een erg “witte” activiteit is, onderzoek ik de landschapsvoorkeuren van nieuwe Nederlanders. Er blijken grote verschillen in natuurbeelden te bestaan tussen allochtone en autochtone Nederlanders. Nieuwe Nederlanders hangen veel vaker het functionele natuurbeeld aan en zijn juist geen voorstander van het wildernis natuurbeeld. Ik laat daarna zien dat deze verschillen in natuurbeelden ook samenhangen met verschillende landschapsvoorkeuren. Hoewel nieuwe Nederlanders minder positief zijn over *alle* typisch Nederlandse landschappen, houden ze vooral niet van ruige landschappen en van natuurontwikkeling. Natuurbeelden blijken hierbij een grotere invloed op landschapsvoorkeuren te hebben dan allerlei sociaaldemografische verschillen, zoals opleiding of leeftijd.

Hoofdstuk 6 behandelt de beelden die burgers van drie Europese landen hebben over biodiversiteit. Hierin laat ik zien dat verzet tegen biodiversiteitbeleid niet voortkomt uit een gebrek aan kennis over biodiversiteit. Burgers gebruiken een rijke schakering van betekenissen gebruiken om het begrip biodiversiteit te begrijpen en er een mening over te vormen. Deze betekenissen zijn vaak gebaseerd op hun persoonlijke ervaringen, kennis en interpretaties van de natuur. Wetenschappelijke begrippen spelen ook een rol, maar meestal ondergeschikt aan de eigen ervaringen.

De belangrijkste betekenissen die mensen koppelen aan biodiversiteit zijn: i) nut en noodzaak van biodiversiteit, ii) kenmerken en waarden van de natuur, iii) de visie op de relatie tussen de mens en de natuur. Op basis hiervan ontwikkelen mensen specifieke visies op natuurbeheer en biodiversiteitbeleid, die op hun beurt weer de mening over concrete beschermingsmaatregelen beïnvloeden.

Hoofdstuk 7 beschrijft de framing van natuurontwikkeling in drie uiterwaarden. Deze studie laat zien dat zelfs als burgers in meerderheid positief zijn over de effecten van natuurontwikkeling, toch protest kan ontstaan tegen veiligheidsmaatregelen en natuurontwikkeling in de uiterwaarden. De mate van protest blijkt nauw samen te hangen met de “frames”, oftewel met de “verhalen”, die in de lokale gemeenschap ontstaat rondom dergelijke maatregelen. Door actieve beïnvloeding van dergelijke verhalen (“framing”), zijn actiegroepen in staat protest te mobiliseren. Natuurbeheerders blijken minder effectief in het vertellen en beïnvloeden van een positieve en breed gedragen verhaallijn over het beheer. Hun natuurbeelden sluiten ook duidelijk minder goed aan bij de dominante beelden onder de bevolking.

Omwonenden gebruiken drie verschillende frames om ingrepen in de uiterwaarden betekenis te geven: i) een verbondenheidsframe, gericht op emotionele verbondenheid en de cultuurgeschiedenis van het gebied, ii) een aantrekkelijke natuur-frame, gericht op het genieten van een groene en natuurlijke woonomgeving en iii) een plattelandsframe, gericht op landbouw en andere rurale waarden. Verzet tegen de plannen komt vooral vanuit het verbondenheidsframe en het aantrekkelijke natuur-

frame. Deze studie laat ook zien dat de nadruk die initiatiefnemers van dergelijke projecten leggen op veiligheid en biodiversiteit weinig weerklank oproept bij de meerderheid van de bevolking.

Hoofdstuk 8 richt zich op het gebruik van natuurbeelden in de framing van het beheer van Nationaal Park het Drents Friese Wold. Deze studie is gebaseerd op de analyse van een hoog opgelopen conflict tussen de natuurbeheerders van het park (o.a. Staatsbosbeheer) en de lokale actiegroep *De Woudreus*. Ik beschrijf hierin hoe De Woudreus in zijn argumentatie succesvol gebruik maakt van het belang van het brede en het esthetische natuurbeeld voor de lokale bevolking. Ze gebruiken deze beelden als onderbouwing van hun kritiek op het beheer van het park. De natuurbeheerders verwijzen vooral naar het wildernis natuurbeeld, een beeld dat slechts door een deel van de bevolking wordt gesteund. Dit hoofdstuk laat ook zien dat naast de verschillen in natuurbeelden, ook het besluitvormingsproces en de relatie tussen de verschillende partijen van grote invloed is op de framing van het conflict. Gebrek aan burgerparticipatie maakt de natuurbeschermers kwetsbaar voor verwijten van arrogantie en het negeren van de betrokkenheid van lokale bewoners bij het gebied. Daarnaast blijkt de grote nadruk op de wetenschappelijke en beleidsmatige argumenten weinig gehoor te vinden onder de bevolking, die meer vanuit algemene natuurbescherming en de esthetische kwaliteiten van het landschap redeneren.

In het concluderende hoofdstuk 9 beantwoord ik de onderzoeksvragen uit hoofdstuk 3. Allereerst vat ik de vier dominante natuurbeelden samen: het wildernis natuurbeeld, het brede natuurbeeld, het esthetische natuurbeeld en het functionele natuurbeeld (zie tabel 9.1). Daarna vergelijk ik deze natuurbeelden van burgers met de dominante natuurbeelden van deskundigen. Ik laat daarbij zien dat burgers veel meer nadruk leggen op de expressieve elementen van hun natuurbeeld, zoals de beleving van het landschap en de emotionele verbondenheid met specifieke plekken in de natuur. Deskundigen leggen echter vooral de nadruk op de cognitieve elementen van natuurbeelden, gebaseerd op ecologische kennis en politiek/beleidsmatig vastgelegde richtlijnen (zoals Natura 2000). De normatieve aspecten van de natuur zijn voor beide groepen van belang. Ze delen daarbij het grote belang van de bescherming van natuur, maar verschillen soms in de concrete uitwerking van deze bescherming. Vooral het verschil tussen ecocentrische en biocentrische waarden is daarbij relevant. Ik beargumenteer dat het concept natuurbeelden kan gebruikt worden om meer zicht te krijgen op de verschillen tussen deskundigen en burgers en tussen burgers onderling. Op basis van deze verschillen pleit ik voor meer differentiatie in het natuurbeleid en een expliciete en integrale afweging van niet alleen de ecologische, maar ook de sociale belangen van elk natuurgebied. Een Europees schaalniveau is hierbij wenselijk. Niet elk Natura2000 gebied in Nederland is uniek in Europa. Natuurlijk moeten de

Oostvaardersplassen optimaal beschermd worden. Maar in sommige gebieden zijn in mijn ogen de sociale waarden van natuurbeleving en verbondenheid groter dan de ecologische waarden. Helaas ontbreekt momenteel een integraal afwegingskader voor dergelijke sociale waarden van natuurgebieden. Het is mijn overtuiging dat op de lange termijn de ecologische duurzaamheid alleen behouden kan worden door de culturele duurzaamheid van natuurgebieden te vergroten. Een nauwere betrokkenheid van burgers bij beleid en beheer is daarbij cruciaal.