

# Public support for nature protection: its social and personal dynamics and its role in environmental change

C.S.A. (Kris) van Koppen  
Environmental Policy Group, Wageningen University  
kris.vankoppen@wur.nl

## Abstract

In the Netherlands, among many other countries, concern is growing about the future of public support for nature protection and environmental change. Surveys of public support often focus on scores for environmental beliefs and attitudes, as well as specific behaviours, such as visiting nature areas, membership of environmental organizations, or volunteer activities. Knowledge about the social dynamics behind empirical trends of such variables, however, is limited. An important aspect of these dynamics is development of pro-environmental beliefs and activities in a person's biography. An often-heard argument is that because of a reduction of childhood experiences in nature, future citizens will be less motivated to support environmental protection. This paper explores this argument within the broader context of social and personal foundations of concern for nature. Theories on human concern for nature vary in a broad range between the biophilia hypothesis of Wilson at one end and constructionist accounts of 'contested natures' at the other end. Searching a middle ground between these extremes, the paper argues that there are indeed general patterns of positive response to natural settings with an almost universal standing in history; the character of such responses, however, is clearly mediated by social and cultural contexts, and also by individual childhood experiences. Subsequently, the paper investigates the impact of nature interaction on a broader environmental concern. While it is far too simple to draw a direct causal line between appreciation of nature and engagement in environmental change, I argue that there may be relationships between the two in terms of personal value bases and in terms of consumption patterns. The paper ends with considering what this implies for monitoring and mobilizing public support.

## Introduction

This paper explores the social dynamics of public support for nature protection. Much of the nature protection activities in contemporary societies are planned and managed by governmental bodies or civil society organizations, but it is obvious that neither of the two can fulfil these tasks to an adequate degree if there is not sufficient approval and support of the general public.

Public support for nature has generally increased over the last century, and nature protection has developed from an elitist concern to something favoured by broad categories of society. Nature protection organizations in countries such as UK and Netherlands boast large memberships, and in many other countries they are flourishing as well (Van Koppen & Markham 2007).

Recently however, there are signals that this trend may change.

First, we can see that memberships of many nature protection organizations have stopped growing and, in some cases, are declining. At least in some countries, such as the Netherlands, there appears to be a shift from protection of nature areas to promotion of animal welfare as a main focus of public support (Van Koppen 2007a). In addition, there are indications that the group of volunteers working in nature protection organizations is gradually aging, which may pose a threat to this work on a longer term.

Second, researchers observe a shift away from nature-based recreation. According to Pergams & Zaradic (2008), who report declining numbers of visits to nature parks in USA, Japan and Spain, this has crucial implications for conservation efforts and will probably reduce the value people place on biodiversity conservation. Figures from the Netherlands do not indicate a sharp decline, but also show that the positive trends in the 1970s and 1980s have stopped (Elands & Van Koppen, 2007).

Third, direct contact of children with nature is declining. Accurate data are not available, but estimates in, for instance, the Netherlands (Van den Boorn 2007), suggest that the time children spent in outdoor green environments has halved in the last two decades.

And lastly, notwithstanding the successes of nature protection in preserving areas and species, the pressures on biodiversity are still increasing. To a large extent, this is due to the side effects of ever rising levels of consumption. Apparently, the broad support for nature does not translate in adequate changes of consumption practices, and by consequence, people get accustomed to degraded levels of flora and fauna in their living environments.

Particularly the issue of children's contact with nature has recently caught public imagination, as is for instance shown by the wide resonance of "The Last Child in the Wood", from the American writer and nature-lover Richard Louv (2005). The book signals that children play less and less in natural environments, because of the increasing roles of television and computer in their lives, because of the lack of green spots in their neighbourhood, and because of exaggerated concern for their safety. It argues that this negative trend has significant impacts, not only on mental and physical health, but also on the support base for nature protection.

These signals have not remained unnoticed by nature policy makers and nature protection organizations. Increasing attention is paid to monitoring public opinions on nature and mobilizing public support, including environmental education to children. The Convention on Biological Diversity explicitly calls for promotion of public awareness and education, and in the European programme for coordination of biodiversity monitoring, 'Streamlining European Biodiversity Indicators (SEBI2010)', a headline indicator is included for 'public awareness and participation'.

However, there is not much clarity about the sort of variables that give a reliable indication of public support. Neither is there consensus on causal relationships between, e.g., nature visits and nature protection support, or on the impacts of children's experiences of nature on their future attitudes. Surveys of public support use different sorts of indicators, such as scores for environmental beliefs and attitudes, as well as specific behaviours, such as visiting nature areas, membership of environmental organizations, or volunteer activities, but a broadly accepted scientific underpinning for choosing these indicators is lacking. It is

illustrative, in this respect, that SEBI2010 provides guidelines for most of its headline indicators, but not for public awareness and participation. For this indicator, countries choose variables in a rather arbitrary way (Elands & Van Koppen 2007).

To improve this situation, it is instrumental to explore the social dynamics underlying public support, and identify what sort of values and beliefs, experiences, or social practices are most important to an effectively mobilizing public support. Knowledge in this field is not only of scientific interest, but can also help governmental and civil society organizations to better monitor public support and to better target their efforts to promote it.

The aim of this paper is to contribute to such knowledge, by exploring the links between values and experiences of people and their concern and support for nature protection, on the basis of existing literature and personal research experiences. My central questions are: What makes people appreciate nature and support nature protection? And what does that imply for monitoring and mobilization?

Obviously, these are far-reaching questions, and I certainly do not claim to answer them in this paper in a satisfying way. Rather than that, the paper's purpose is to develop some plausible lines of arguing in contribution to further debate and research.

## **Theorizing concern for nature**

What makes people care for nature? Theoretical answers to that simple question are provided from a broad variety of science perspectives. A complete overview is far beyond the scope of this paper, but in this section, I will review different sets of factors that literature offers, and for each set pick out one or two prominent theoretical approaches.

### *Evolutionary factors: biophilia*

Perhaps the most cited explanation, with a particular appeal to biologists and social scientists working from an evolutionary perspective, is the biophilia hypothesis. This hypothesis, introduced by E.O. Wilson (1984; see also Kellert & Wilson 1993) asserts that positive values attached to the natural world "reflect affinities for nature that presumably have proven adaptive in human evolution" (Kellert 2002: 129). In other words, as epitomized by Kahn (1999: 9) in a critically positive account "there exists a fundamental, genetically based human need and propensity to affiliate with life".

A well-known elaboration of this view is the Savannah hypothesis. Arguing that the genetic repertoire of the human species has largely been established in the African savannahs, it is assumed that it is particularly the savannah landscape that is positively appreciated by humans (Orians & Heerwagen 1992). Research into preference for landscapes and tree forms gives some support to this claim, although the evidence is not fully conclusive. A major problem in testing the Savannah hypothesis is that in fact, very little is known about the life of humans and their predecessors and the origins of their genetic repertoire. Many of the assumptions on landscape preferences are post-hoc, and even then, not all of them are corroborated (Heerwagen & Orians 2002). Another major problem is the apparent diversity of nature perceptions, among different societies (see, e.g., Van Koppen & Markham 2007 for differences between Western countries) and among individual persons.

In the light of these differences, most of the advocates of the biophilia theory recognize that other factors are of influence as well. Kellert for instance, who collaborated with Wilson in theorizing on biophilia, asserts that the expression of these values is shaped by learning, culture and experience and varies greatly across individuals and groups, but "this variability and its healthy expression are . . . biologically limited and bounded" (Kellert 2002: 129).

Signs of positive affiliations with nature can be found all over history, in all societies we know about. They are also clearly manifest among young children. In this light, it is plausible that there is, indeed, some sort of genetic biophilia basis, even if it is difficult to directly prove this. Beyond this assertion, however, it is quite hard to say where the biological limits to variability would lay and what the further implications of this genetic basis for the social and personal development and variability of nature-related values would be. For answers to these questions, we need to turn to other theory perspectives.

#### *Psychological factors: self-transcendence*

There is an increasingly rich body of studies on psychological factors underlying environmental concern. Such factors are related to values, beliefs and knowledge held by individual persons. This paper is not the place for an overview of this body of research, but it is useful to highlight some of the results of research on values, which emerge quite consistently out of recent investigations (e.g. Huddart Kennedy et al. 2009, Thøgersen & Ölander 2002; Hansla et al. 2008). Many of these studies draw on the value theory introduced by Schwartz (1992) and further elaborated for environmental concern by Stern and others (Stern 1992, Stern & Dietz 1994, Schultz 2001, Schultz & Zelezny 1999). Often, adapted versions of Ajzen & Fishbein's theory of planned behaviour are used to relate values and environmentally responsible behaviour.

Stern distinguishes three basic value-orientations: egoistic (oriented to one's own personal well-being and power), social-altruistic (oriented the well-being of the community) and biospheric (oriented to the well-being of non-human beings). Concern for nature typically relates to the biospheric value-orientation. In empirical research, however, it is not always easy to separate clusters of social-altruistic and biospheric values. Both appear to be related with high scores on what Schwartz call 'self-transcendence'. Self-transcendence represents one pole of the main axis in Schwartz's value theory. The opposite pole is 'self-enhancement', which, similar to the egoistic orientation, entails a preference for personal achievement and power.

This is not to say, that only values related to self-transcendence can motivate environmentally responsible behaviour. As Stern and others point out, also egoistic values can motivate certain forms of environmental concern and behaviour. Other psychological factors, such as personal beliefs about the consequences of environmental degradation (..), the feeling that one can make a difference and the knowledge and skills to effectively do that (De Young 2000, Kaplan 2000) can have substantial impacts on environmental behaviour.

Nonetheless, there appears to be a consistent correlation between value-orientation associated with self-transcendence and active concern for nature. This relation was corroborated in a representative survey on public support for nature protection we carried out in the Netherlands (De Bakker et al. 2007).

It should be stressed that value-orientations related to self-transcendence do not imply that persons so to say 'sacrifice' their own interest for that of others. Rather, the interests of the other and the self are believed to be closely related. R. Kaplan and S. Kaplan did research on wilderness appreciation showing that a strong concern for nature protecting went hand-in-hand with the "desire to have such setting's available for one's own joy and peace of mind". It were, indeed, the feelings of 'wholeness' with nature that made wilderness experiences so powerful (Kaplan 2000: 496).

In terms of socio-demographic factors, there is a gender component in self-transcendence value orientations, as well as influence from socio-economic status and education level. All of them may be important when considering the mobilization of support for nature protection, but the impacts are not unambiguous and for now, we will leave them aside.

#### *Cultural factors: the Arcadian tradition*

While it is plausible that biological and psychological factors have a role to play in human concern about nature, it is equally clear - and acknowledged by most researchers on evolutionary processes or psychological values - that culture plays a key role in shaping sentiments toward nature.

Again, it is impossible to do justice to the vast body of available literature, but I hope the concept of Arcadian tradition can serve to illuminate key aspects of the impact of cultural factors on modern appreciation of nature. I have elaborated this conceptual approach in past research (Van Koppen 2000, 2002), drawing on cultural history studies of Worster (1985), Hargrove (1989), Thomas (1993), Schama (1995), and others. The 'Arcadian tradition' approach links individual motives and values regarding nature to the broader social, economic, and cultural trends that characterize highly industrialized and urbanized societies. So, in the history of Western views of nature, this approach points at the aesthetic, moral, and other cultural values that emerged in parallel to the modernization of Western society and were articulated in their modern forms by Romanticism. Landscape painting, natural history, recreation in nature, and care for animals and plants are typical expressions of this tradition, which, since the industrial revolution, has spread from urban elites to broader categories of citizens, propelled by increasing income and leisure opportunities and a growing separation from nature in daily work.

While acknowledging that positive attitudes to nature can be found in all societies of past and present, the Arcadian tradition concept postulates that in modern Western society - and in highly industrialized societies more generally - nature appreciation has specific characteristics, articulated in a cultural tradition that in many ways is complementary to the increased efficiency in the use of nature as a resource for production. Nature, therefore, is regarded as a domain free from technology and production, and its non-use - that is: moral, spiritual, cultural-historical, aesthetical - values are central stage.

The Arcadian tradition hypothesis helps to explain why nature protection has assumed such a central and persistent place in Western societies and why the cultural views of nature modelled in Western societies easily find their way to newly industrializing countries. It also postulates differences in nature appreciation between social categories that are directly depending on nature for their livelihood and those that have urban and industrial jobs.

An interesting issue in this respect is the comparison of urban and rural dwellers in modern societies. Several studies find pronounced differences in nature perception, in line with the Arcadian tradition hypothesis. For instance they demonstrate that urban dwellers have higher preference for wilderness, while rural dwellers prefer more cultivated landscapes (e.g. Van den Berg 1999).

*Sociological factors: contexts and practices of dealing with nature*

Many of the sociological explanations of concern for nature and nature-oriented activities emphasize social context factors as an underlying dynamic. McNaghten & Urry, for example speak not of nature but of 'contested natures' (1998), to indicate that the meanings of nature and the motivations to protect it are contingent on the diverse social contexts in which people act. Taken in a radical sense, this view is difficult to maintain against the remarkable persistence and stability, as well as the striking similarities in space and time, of the values and cultural views that people hold with regard to nature.

On the other hand, however, it is quite clear that there is not a one-to-one relationship between values or cultural traditions and the way persons deal with nature. The way we view and act upon nature is mediated by multitude of factors, which loosely may be called social context factors. They may range from a government promoting wilderness protection as a means of establishing power over an area or a religious authority using nature in defence of its moral creeds, to someone joining a nature group as a way to meet friends, or house owners lobbying for conservation to increase the value of their property.

Doubtlessly, such factors play an important role in the way people deal with nature, and it is very useful to take them into account in mobilizing people for nature protection, as it is much easier - though not always better - to go with the flows of the social context than to go against it. However, as such factors are not directly related to nature, and extremely diverse in character, they fall out of the scope of this exploration of the general dynamics of concern for nature.

A somewhat related approach in current sociology, but of more interest to this paper, focuses on the concept of social practices, and poses this concept as a promising frame to analyze social action (e.g. Schatzky 2002). In consumer research this approach is, among others, promoted by Warde (2005) and Spaargaren (2003). Rather than analyzing consumer behaviour in terms of planned behaviour (from beliefs through consumer decisions to consumptive actions), consumption practices themselves, as a whole of doings and sayings, are taken as the starting point of analysis. I think this approach can fruitfully be applied to practices of dealing with nature: hiking, bird watching, nature conservation activities, amateur naturalist study, but also swimming, sun bathing, gardening, keeping pets, farming, fishing, eating products of nature, and so on (many of which are, in fact, consumption practices) (see also Van Koppen 2007b).

In the perspective of a social practices approach, concern for nature is an outcome, rather than a cause of human interaction with nature. When persons, for whatever reasons, engage in nature practices, this influences the ways they value and conceptualize nature. The practices approach is compatible with research findings on attitudes and behaviour showing that causal lines not only go from values and beliefs to behaviour, but also the other way around. It also helps understand why people manifest diverging value priorities in different practices (e.g. when buying meat in a supermarket or when taking care for a pet). Research into nature perception shows that views on nature are "contextualized by

people's experiences of actual places and environments in their lives" and suggests that people "feel more connected to nature the greater the amount of time they spend in what they conceive to be natural environments" (Vining 2008: 8).

In a practices-oriented approach, mobilizing concern is not so much an issue of changing values, but rather a challenge of improving the provisions for nature-friendly practices and of changing nature-unfriendly routines. With an eye to the booming of computerized media, an issue of further investigation and debate is to what extent virtual experiences of nature can substitute for direct sensual contact with nature in generating long-term appreciation and concern.

#### *Biographical factors: parents and others*

Biographical factors, as the term is used in this paper, relate to the ways in which concern for nature evolves during the lifecycle of a person. These factors, therefore, are not separate from the ones discussed before. All abovementioned clusters of factors have their own biographical dimension.

For the biophilia hypothesis, concern for nature is embedded in our genes - with perhaps certain genetic differences between individuals. When they grow up under adequate circumstances, this inborn disposition will manifest itself in persons.

Values, according to Schwartz and many others, are "acquired both through socialisation to dominating group values and through the unique learning experiences of individuals" (Thøgersen & Ölander 2002).

Cultural views can also be transmitted by socialisation and learning. Vygotsky, one of the most famous theorists on learning, emphasizes that learning is unique in the sense that the individual itself constructs his or her knowledge, but that the individual does so in a social context of shared words and ideas, and the knowledge constructed thus reflects the cultural history that the person takes part of.

In a social practices approach, a lifecycle means that actors go through series of practices, by virtue of societal influences - e.g. which practices are available to a social category, which practices are inescapable - and personal choice. Each of these practices will then leave traces of experiences, identities, acting capacities, and preferences in a person's lifestyle.

With regard to the biographical dynamics of concern for nature, there is much literature devoted to children. Childhood is by many considered as a crucial period in building affection and interest for nature, and several studies point at parents or other nearby role-models as the most important source of influence in this period (e.g. Chawla 1999, 2001; Smit et al. 2006). Among other important sources of impact, school, and for older children, also peer groups are prominent in literature. In a recent statistical research on the long-term impact of primary school environmental education on the environmental attitudes at a later age (up to 27), we found a small but significant influence of school education and a much larger influence of nature visits with their parents (Smit et al. 2006).

That parents exert strong influence is, in fact, compatible with any of the biographical factors highlighted above: parents provide the genetic material of children, are main actors in early socialization processes and in the transfer of cultural views, and moreover have a

strong influence on the range of practices a child has access to. However, our understanding of the strength and character of parental influence in comparison with other social impacts is very much dependent on how we conceptualize biographical factors more specifically.

Worth mentioning in this respect is the research on Significant Life Experiences (SLEs), by Chawla (1999, 2001) and others. In several studies Chawla interviewed environmentally committed adults - often actively engaged in nature protection - and asked them what sort of significant experiences in their youth made them become committed. A large majority of respondents pointed at experiences in nature, prevailing experiences in neighbourhood natural areas or in remote nature areas, and often in the company of parent or another personal role model of care for nature. There are still many questions surrounding the role of SLEs. Does the fact that experiences are vividly recalled imply that they have indeed been influential on someone's value orientation? Can an SLE be interpreted as 'top of the iceberg', that is, as an indicator for a larger set of similar experiences which in memory are so to say aggregated into one? To what extent are the findings for environmental activists, for whom nature is part of their personal identity, applicable to other, less concerned persons? Nonetheless, research into SLEs presents a consistent biographical pattern, and interestingly brings together personal value transfer and experiences in nature-related practices as a way to mobilize engagement with nature. While Chawla mostly points at out-of-school experiences, we found in the abovementioned research on long-term impacts of environmental education that practical experiences during school field trips were well remembered by a majority of former pupils (Smit et al. 2006).

Another idea worth mentioning in this, admittedly fragmentary, section is Kahn's concept of "environmental generational amnesia". Kahn, who has done many studies child development and human-nature relationships, assumes that in childhood people construct a standard, a baseline, for what is the "normal" condition of nature, and they use that baseline to assess environmental degradations later in their life. As a consequence, a new generation may have difficulty understanding in a direct, experiential way that the nature as experienced in its childhood was already environmentally degraded. This is what he calls amnesia. Cultural images of nature, however, such as landscape pictures and stories of older people, can provide a reference of more unspoiled landscapes, and in this help preserving the cultural memory of a social group (Kahn 1999: 183-184). This latter interpretation echoes in some respects the conceptual approach of the Arcadian tradition, which considers the interaction of idealized images of wilderness and concrete experiences practices of enjoying and caring for nature as the main dynamics underlying modern attitudes to nature.

### **Taking stock: some observations**

Within available theories and evidence, fragments of which were reviewed above, we find sufficient ground for assuming that there are indeed general patterns of positive response to natural settings with an almost universal standing in history. The strength and character of such responses, however, is clearly mediated by social and cultural contexts, and also by individual experiences. With respect to the latter, childhood experiences are of particular influence.

We can also observe that there is convergence between psychological and sociological approaches, in the sense that both tend to acknowledge the reciprocal and multi-causal relationships between values, beliefs, experiences and behaviour. Values and beliefs affect behaviour and thus experiences, but beliefs, behaviour, and experiences are also strongly affected by social practices. Social practices, in turn, may to some extent be the result of planned behaviour, but are often better understood from other social factors such as routines, access to facilities, competences, and social networks, to name a few.

With regard to nature, this implies that access to and participation in practices of dealing with nature, where such practices can generate positive experiences of nature, may very well be a key variable in creating a positive appreciation of nature. This in turn, may increase a person's support for nature conservation. In other words, the worries of those that fear that a decline in nature visits may impact future support for nature protection are non unwarranted.

While it is acknowledged that values are often the result of action rather than the cause, they cannot be dismissed as a factor in building concern for nature. Because of the relative stability of values, value-building is important mechanism in generating enduring changes in people's support for nature. Moreover, generic values constitute a way in which someone's nature orientation in one specific practice (e.g. hiking in nature) can transfer (or spill-over, as it is also called) to other practices (e.g. voting at elections). The more generic the values and beliefs with respect to nature and nature conservation are, the more widely these values and beliefs can influence other behaviours. However, by the same token, they also become more distant to specific behaviours.

Transfer of value orientations from one practice to another, therefore, cannot be taken as self-evident. As was observed, people are very capable of applying quite diverging value orientations in different practices. With regard to nature, according to the Arcadian tradition approach, a split in value orientations is even part of the cultural make-up of industrial society: in the domain of production, people tend to see nature as a resource to be used, in the domain of their private life, they see nature as something nice and beautiful to be enjoyed and cared for. Such a bifurcation of values makes it easier to separate the way we deal with industrial products from the way we deal with natural landscapes and non-food animals.

Though less self-evident than proponents of planned behaviour models were inclined to think, still, there are clearly impacts from more generic value-orientations to behaviour. Many (though not all) of the studies in value-behaviour relationships find correlations between values, beliefs and behaviours, even if they are usually not very strong. This not only applies to the approaches mentioned in the overview, but also for the widely used New Ecological Paradigm scale for environmental concern (e.g. Dunlap et al. 2000). Also in studies on consumer choice, such impacts of nature-related values and beliefs are found (e.g. Thøgersen & Ölander 2002).

In summing up, it should be stressed that socialization and education by parents and other care-takers, at home and in primary school, probably constitutes the most important way in which people build values and beliefs on nature and nature protection. This may be commonplace, but we do not have indications that it is untrue. However, in addition and in connection with this role of parents and educators, the overview suggest that positive experiences of nature, gained in nature oriented practices, may help create a positive value-

orientation to nature that can, in specific conditions and to a certain extent, spill over to other practices. Childhood experiences are in this respect of particular importance. This means that facilitating access of children to nature may well be one of the more effective ways of mobilizing long-term public support.

## **Linking love for nature with broader environmental concern**

In discussing the monitoring and mobilization of public support for nature, it is important to note that nature protection today can not be seen as a single-issue concern. Nature protection is no longer a matter of setting aside and managing a few parks and reserves, and other pockets of green. It is now closely intertwined with issues of environmental pollution and resource depletion, with urban and rural development issues, such as urbanization and urban sprawl, and with issues of transport and mobility. Moreover, the underlying threats to nature are, at least in the North, increasingly caused by unsustainable consumption.

Effective support for nature protection not only means having knowledge and affinity with regard to nature, visiting nature for study and pleasure, or being member or volunteer in nature organizations. It also implies supporting environmental protection in a broader sense of for instance measures against climate change, voting for environment-oriented policies, and changing consumption habits. There is no direct causal line between appreciation of and concern for nature and these wider forms of political and consumerist engagement in environmental change, as is ironically demonstrated by those who spend loads of kerosene to visit the nature areas they admire so much; or by those who love residing in the countryside and thus need new highways for commuting to their city offices.

For a useful answer to the question how people's values and experiences are related to public support, we have to take into account the linking of nature concern to broader environmental change. As is clear from available evidence, this is not just a matter of providing people with information about the negative impacts of industrial policies and consumer life styles on nature. Knowledge is just one, and usually not the most important factor in shaping practices. Values and routines are of greater importance.

At the end of this paper, we can only tentatively touch on this issue. Not much research is available that can help us clarify it. On the basis of scientific evidence and personal experience, I can see at least two considerations that might serve as starting point for further investigation. The first consideration is related to findings on environmental values. If it is correct that biospheric and social-altruistic values are closely related and part of the self-transcendence dimension of values; and if it is possible that positive experiences in nature feed into one's value-orientation and can make it shift it towards a greater appreciation and concern for nature; then such nature experiences potentially, can contribute to more generic value changes that, according to research, are positively correlated with a wider set of environmental concerns and behaviours.

A second consideration is related to consumer practices. Although enjoyment of nature, as a consumption practice, can have severe impacts on the environment because of the conditions under which it occurs (transport to and in reserves, disturbance of fauna and flora) the activity in itself is non-destructive and moreover, lacks some of the self-propelling features of other types of consumption, such as status competition and a

continuous need for more and new stimuli). Fundamentally, being in nature, like some other types of aesthetic-expressive behaviour such as engagement in literature, music and particular other arts and crafts, is intrinsically rewarding and restoring. Some authors (e.g. Kaplan & Kaplan 2005) argue that being in nature has this property *par excellence*. If this is the case, such experiences may help people to build competences and routines for other non-destructive and intrinsically rewarding consumption practices, as well which, eventually, may help to change consumption in more sustainable directions.

Clearly, these considerations are assumptions that would need further research for confirmation. Many other sorts of links between appreciation for nature and effective public support are possible and would deserve further elaboration and research. For this paper, however, I have to leave it to this.

## **Implications for monitoring and mobilization**

What are the implications of all this for monitoring public support for nature? Since so many factors are potentially of importance and there is insufficient scientific basis for selecting those few indicators that are most influential, we should preferably use a broad set of indicators. In our recent Dutch survey (De Bakker et al. 2007) we measured a wide range variables, including people's normative and cognitive beliefs on nature, value-orientations related to Schwartz, nature recreation and other nature-related consumption practices, as well as political voting and participation in decision making.

Also, it is important to further investigate the relationships between such variables and test assumptions from different scientific approaches. In doing so, it would be important to combine the different approaches listed in this paper, because it is plausible that each of them highlights components that cannot be missed for a good understanding.

Preferably, survey indicators should be better harmonized among countries, thus enabling better comparative research. In addition to surveys, qualitative studies, with 'thick' descriptions of motives and behaviours could help us understanding relationships in more empirical detail.

With regard to mobilization of support, the evidence of this paper shows that there are many different angles that can be chosen. Political engagement, working for nature protection organizations, nature-friendly consumption, information on the impacts of production and consumption on biodiversity degradation, and facilitating nature recreation are all activities that can help mobilizing support. Perhaps the most important issue in mobilizing support is the phenomenon of decreasing first-hand experiences of nature among children. In the light of this phenomenon, attention to outdoor nature education for children is increasing in several countries, including the Netherlands. What sort of experiences are needed, and what would be 'healthy' amount of them is far from clear. Another interesting question, in the perspective of this paper, is whether these experiences of, e.g. playing in nature, can help building the value orientations related to self-transcendence or other long-term changes in values, beliefs and competences.

## Literature

- Chawla, L. (1999). Life Paths Into Effective Environmental Action. *Journal of Environmental Education*, 31(1), 15-26.
- Chawla, L. (2001). Significant Life Experiences Revisited Once Again: response to Vol. 5(4) 'Five Critical Commentaries on Significant Life Experience Research in Environmental Education'. *Environmental Education Research*, 7(4), 451-461.
- De Bakker, H. C. M., Van Koppen, C. S. A., & Vader, J. (2007). *Het groene hart van burgers. Het maatschappelijke draagvlak voor natuur en natuurbeleid*. (Vol. Rapport 47). Wageningen: Wettelijke Onderzoekstaken Natuur & Milieu.
- De Young, R. (2000). Expanding en evaluating motives for environmentally responsible behaviour. *Journal of Social Issues*, 56(3), 509-526.
- 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. *Journal of Social Issues*, 56, 425-442.
- Elands, B. H. M., & Van Koppen, C. S. A. (2007). *Indicators for the 'Convention on Biodiversity 2010'. Public awareness and participation*. Wageningen: WOt Natuur & Milieu.
- Hansla, A., Gamble, A., Juliusson, A., & Gärling, T. (2008). The relationships between awareness of consequences, environmental concern, and value orientations. *Journal of Environmental Psychology*, 28, 1-9.
- Hargrove, E. C. (1989). *Foundations of environmental ethics*. Englewood Cliffs NJ: Prentice-Hall.
- Huddart Kennedy, E., Beckley, T. M., McFarlane, B. L., & Nadeau, S. (2009). Why we don't "walk the talk": Understanding the environmental values/behaviour gap in Canada. *Research in Human Ecology*, 16(2), 151-160
- Kahn, P. H. (1999). *The human relationship with nature. Development and culture*. Cambridge MA: MIT Press.
- Kaplan, S. (2000). Human nature and environmentally responsible behaviour. *Journal of Social Issues*, 56(3), 491-508.
- Kaplan, R., & Kaplan, S. (2005). Preference, restoration, and meaningful action in the context of nearby nature. In P. F. Barlett (Ed.), *Urban place. Reconnecting with the natural world* (pp. 271-298). Cambridge MA: The MIT Press.
- Kellert, S. R., & Wilson, E. O. (Eds.). (1993). *The biophilia hypothesis*. Washington DC: Island Press.
- Kellert, S. R. (2002). Experiencing nature: affective, cognitive and evaluative development in children. In P. H. Kahn & S. R. Kellert (Eds.), *Children and nature. Psychological, sociocultural, and evolutionary investigations* (pp. 117-151). Cambridge MA: The MIT Press.
- Louv, R. (2005). *Last child in the woods. Saving our children from nature-deficit disorder*. Chapel Hill: Algonquin Books of Chapel Hill.
- MacNaghten, P., & Urry, J. (1998). *Contested natures*. London: Sage.
- Orians, G. H., & Heerwagen, J. H. (1992). Evolved responses to landscapes. In J. H. Barkow, L. Cosmides & J. Tooby (Eds.), *The adapted mind: evolutionary psychology and the generation of culture* (pp. 555-579). New York: Oxford Univ. Press
- Pergams, O. R. W., & Zaradic, P. A. (2008). Evidence for a fundamental and pervasive shift away from nature-based recreation. *PNAS*, 105(7), 2295-2300.
- Schatzki, T. R. (2002). *The site of the social*. University Park PA: The Pennsylvania State University Press.

- Schama, S. (1995). *Landscape and memory*. London: HarperCollins.
- Schultz, P. W. (2001). The structure of environmental concern: concern for self, other people, and the biosphere. *Journal of Environmental Psychology, 21*, 327-339..
- Schultz, P. W., & Zelezny, L. C. (1999). Values as predictors of environmental attitudes: evidence for consistency across 14 countries. *Journal of Environmental Psychology, 19*, 255-265.
- Schwartz, S. H. (1992). Universals in the content and structure of values: theoretical advances and empirical tests in 20 countries. *Advances in Experimental Social Psychology, 25*, 1-65.
- Spaargaren, G. (2003). Sustainable consumption: a theoretical and environmental policy perspective. *Society and Natural Resources, 16*(8), 687-701.
- Stern, P. (1992). *Psychological dimensions of global environmental change*: Annual Review of Psychology 43: 269-302.
- Smit, W., Jansen, P., van Koppen, C. S. A., Bulten, M., Damen, M. L., & Custers, C. (2006). Hoe duurzaam is NME? Een explorerend kwantitatief onderzoek naar langetermijneffecten van Natuur en Milieueducatie op basisscholen. Apeldoorn: Stichting Veldwerk.
- Stern, P.C., Dietz, T. (1994) The value basis of environmental concern. *Journal of Social Issues. 50* (1), 65-84.
- Thøgersen, J. T., & Ölander, F. (2002). Human values and the emergence of a sustainable consumption pattern: A panel study. *Journal of Economic Psychology, 23*, 605-630.
- Thomas, K. (1984). *Man and the natural world: changing attitudes in England 1500-1800*. London: Penguin Books.
- Van den Berg, A. E. (1999). *Individual differences in the aesthetic evaluation of natural landscapes*. Groningen: Proefschrift R.U.G.
- Van den Boorn, C. (2007). *Boomhut of chatroom? Een onderzoek naar de natuurinteresse van Nederlandse kinderen in 2006 en 20 jaar eerder*. Amsterdam: Doctoraalscriptie Vrije Universiteit Amsterdam.
- 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 sociaatheoretisch onderzoek naar natuurwaardering en natuurbescherming in de moderne samenleving*. Wageningen: Dissertatie Wageningen Universiteit.
- Van Koppen, C. S. A. (2007a). Dutch nature protection between policy and public. In C. S. A. Van Koppen & W. T. Markham (Eds.), *Protecting nature. Organizations and networks in Europe and the USA*. (pp. 140-164). Cheltenham: Edward Elgar.
- Van Koppen, C. S. A. (2007n). Social learning for sustainability in a consumerist society. In A. E. J. Wals (Ed.), *Social learning towards a sustainable world* (pp. 369-382). Wageningen: Wageningen Academic Publishers.
- Van Koppen, C. S. A., & Markham, W. T. (Eds.). (2007). *Protecting nature. Organizations and networks in Europe and the USA*. Cheltenham: Edward Elgar.
- Vining, J., Merrick, M. S., & Price, E. A. (2008). The distinction between humans and nature: human perceptions of connectedness to nature and elements of the natural and unnatural. *Research in Human Ecology, 15*(1), 2-11.
- Warde, A. (2005). Consumption and Theories of Practice. *Journal of Consumer Culture, 5*(2), 131-153.
- Wilson, E. O. (1984). *Biophilia*. Cambridge: Harvard University Press.

Worster, D. (1985). *Nature's Economy: a history of ecological ideas*. Cambridge: Cambridge University Press.