

Visions of Nature in Eastern Europe: A Polish Example

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ABSTRACT

Visions of nature are defined as public views on what nature is, what values are carried by nature and what is the appropriate relationship between humans and nature. They were studied in Lubelski region, Poland. With respect to the first, respondents expressed that human influence and naturalness do not exclude each other. One result of the values survey was that respondents acknowledged nature's intrinsic value. The study into the relationship between humans and nature showed that the respondents adhered strongly to a steward type of relationship, and that more ecocentric images were adhered to for a lesser, but substantial degree.

KEYWORDS

Environment, attitudes, values, environmental awareness, Poland

1. INTRODUCTION AND KEY CONCEPTS

1.1 The Concept of Visions of Nature

Western culture, though built on an ideology of nature exploitation since the age of Enlightenment, has sprouted a 'new biophilia', as Van den Born et al. (2001) put it. A wealth of philosophical and empirical studies has been produced to articulate and document this phenomenon, but countries such as those of Eastern Europe are virtually absent there, with Biela's (1984) study of perceived environment quality in three differently polluted regions as one of the few exceptions. The aim of the present paper is to fill in at least some of this gap. Moreover, we will engage to some extent with the theme of (pan-European) universality versus (Polish) specificity of our results. Following Van den Born et al. (2001), we will approach the issue of cultural biophilia in a broad manner, using the 'visions of nature' concept to define the research object. This paper is partly a replication of Dutch (questionnaire and interview) studies, first used by Van den Born et al. (2001) in the Netherlands, in the Polish context. In *Environmental Values*, Van den Born (2008) has recently reported on Dutch visions of nature.

'Visions of nature' is an umbrella concept that aims to capture how humans understand, value and relate to nature. With that, it includes cognitive, ethical (or evaluative) and attitudinal elements. The visions of nature concept is different from the 'valuation approaches' to nature investigated by Van der Windt et al. (2007). In the latter concept, the ecological, ethical and aesthetic elements are fixed together while in the visions of nature concept, the elements are allowed to vary independently of each other.

- 'Images of nature' is the cognitive element under the visions of nature umbrella. It translates into types of more or less natural environments that people distinguish. Using 'nature' as a superordinate category, our research seeks to understand what makes the respondents perceive one instance of nature as more natural than the other.
- 'Values of nature' are the grounds underpinning why natural things are seen as important. After Lockwood (1999), we distinguish between intrinsic and instrumental values.
- 'Images of relationship' refer to how people conceive the appropriate relationship between humans and nature. We understand our images of relationship as do Van den Born et al. (2001), De Groot (1992) and Passmore (1974): the attitudes that affect our perception of nature and our co-existence with and within instances of nature. Table 1 shows the overview of images of relationship found in De Groot (1992), De Groot et al. (2006) and Van den Born (2008).

VISIONS OF NATURE IN EASTERN EUROPE

TABLE 1. Images-of-relationship between humans and nature.

Mastery over nature	The attitude of human supremacy on Earth usually associated with Enlightenment and technological optimism.
Stewardship of nature	Nature is seen as a vulnerable system for which we are responsible. Humans stand above nature; however, this position brings both privileges and duties.
Partnership with nature	Humans and nature carry much of the same value and share the planet in a relationship of physical and maybe even spiritual exchange.
Participation in nature	The most ecocentric image, in which a key aspect of being human is to be part of the great system and process of Nature, physically and spiritually.

Would this classification express Polish culture to a sufficient degree? In order to address this question, it serves to take a look at what is generally regarded as the ‘typical’ Polish culture of nature. The first important factor here is Christian and especially Roman Catholic environmental ethics, since 89 per cent of the 38 million Poles declare themselves Roman Catholics (CSYP, 2008). The Church is still quite influential, for example due to its important role in the downfall of communism. The environmental ethic and official teaching of the Catholic Church strongly adheres to the Stewardship image and the idea of sustainable development, as stated by pope John Paul II (1989: 1): ‘We cannot interfere in one area of the ecosystem without paying due attention both to the consequences of such interference in other areas and to the well-being of future generations.’ Technological and economic progress at the expense of the environment is seen as a moral dilemma and a threat to peaceful society, which can be solved only by respect for nature, safeguarding the integrity of creation and ensuring intergenerational justice (Wróblewski, 2004; 2006).

The histories of state- and civil society-based environmental conservation in Poland are roughly similar to those of Western Europe. Species protection started as early as the end of the tenth century, when hunting of the European beaver was banned except for the King and his retinue. The first tree species, yew, was put under protection at the beginning of the fifteenth century (Oszlányi et al., 2004). Four hundred years later, in 1868, the first modern environmental law act was passed, regarding the protection of animals specific to the Tatra Mountains (the chamois and the alpine marmot) by banning their hunting, poaching, catching and selling (Olaczek, 2000). A broad conservation movement started after the First World War, along with the creation of the Republic of Poland. The government body respon-

sible for environment was established in 1919, with Władysław Szafer as minister. Szafer, who became probably the most important character for the modern Polish environmental protection, started the initiative to recreate and reintroduce the lowland bison (*żubr*) in Poland, and helped to establish the first Polish National Parks (Babiogórski – 1921/1933; Białowiecki and Pieniński – 1932) and many other protected areas. He was also one of the founders of the biggest, still existing Polish environmental NGO, the Nature Conservation League (1928), one of the first members of IUCN (Olaczek, 1996; 2000). The League remains very popular and active especially in schools, since environmental education has been its primary objective from the beginning. Its role in shaping visions of nature cannot be overestimated, since many Polish children take an active part in nature study and nature protection initiatives of the League.

Another trait in Polish culture of nature originated in Romanticism, with its emphasis on the beauty, majesty and idyllic qualities of traditional landscapes. Romanticism has continued to be influential through the Polish national epic, 'Pan Tadeusz'. *Pan Tadeusz, or the Last Foray in Lithuania: a History of the Nobility in the Years 1811 and 1812 in Twelve Books of Verse* by Adam Mickiewicz was first published in Paris in 1834, at the time when the Polish-Lithuanian Commonwealth was under partition and the author, previously involved in the underground resistance, had emigrated to the West. The relatively simple plot of two feuding families of the local gentry is full of patriotic content, high hopes for the country to be free from invaders and is truly romantic in style, with long and picturesque descriptions and praise for local landscapes, representing the long lost home. The epic has been a compulsory reading, with memorisation, in Polish schools for many generations of pupils, and one of the obligatory parts to learn by heart has always been some description of nature. It is also the most widely known and read secular book in the country, and it is common for any respectable Polish household to possess a copy. Thus, the romantic view of nature as a symbol of home, sacred fatherland, and idyllic past has a firm ground in the Polish mind.

Based on this, we designed our questionnaire from an images-of-relationship classification that retains the overall idea of the Visions of Nature tradition (including the Stewardship notion) but also takes in the possibly characteristically Polish elements of nature as primarily something to study and protect as well as the Romantic visions of nature as home and nature as sacred. Table 2 presents the classification.

VISIONS OF NATURE IN EASTERN EUROPE

TABLE 2. Relationship-with-nature classification used to generate questionnaire items.

Humans the conquerors of nature	Higher level of anthropocentrism
Humans the stewards of nature	
Nature studied and protected	
Nature as home	Higher level of ecocentrism
Nature sacred and mystic	

1.2 Visions of Nature – Preceding Studies

Early empirical investigations of visions of nature comprise work of Buijs and Volker (1997) and Buijs and Filius (1998) in the Netherlands. The former authors elicited a typology of nature images such as spontaneous, domesticated and planted nature, and the latter of values-of-nature. An important outcome of their study was that 92 per cent of subjects claimed that ‘intrinsic value of nature’ was significant for them. Buijs and Filius (1998) repeated that study with a small sample (30 subjects), but deepened with open interviews. The results were comparable with previous findings, but the interviews revealed the meaning of natural environment for the subjects, which can be found in answers like: *‘If there were no nature we would lack a reference. (...) I think that humans cannot live without nature’*.

Van den Born et al. (2001) studied the concept’s full three components. Their respondents distinguished between six images of nature, including Arcadian, wild, intrusive (like ‘rats in the barn’), domesticated, utilitarian and ‘rainforest’ which turned out to be a category in itself. The three most important values of nature turned out to be human health, future generations and intrinsic value, while for the images of relationship with nature, the majority of subjects (72 per cent) agreed with the statement that ‘humans are part of nature and hence should bear responsibility for it’, which indicates that the image of responsible Steward was strongly adhered to. The exploration of demographics showed that younger and better-educated subjects had a higher recognition of intrinsic value of nature, which is consistent with other studies on environmental friendliness (Van Liere and Dunlap, 1980; Arcury, 1990; Dietz et al., 1998). New quantitative and qualitative work of Van den Born (2006; 2008) largely confirms the previous findings, e.g. in that lay people in the Netherlands strongly reject the Master over

nature image and strongly adhere to Steward, with the two more ecocentric images following suit.

Relationships with nature similar to our relationship typology can be found in Schultz et al. (2004), who studied the link between environmental concern and feelings of connectedness with nature, assuming a continuum from the person feeling him/herself superior and separated from nature (like Mastery in Table 1) to feeling to be totally equal with animals and plants (somewhat akin to Partnership in Table 1). Schultz et al. (2004) used a form of IAT (Implicit Association Test) which enables measuring implicit connections without bias by the common problem of social desirability. The results confirmed that biospheric environmental concern was related to a high degree of connection with nature, while egoistic environmental concerns were related negatively to connectedness.

Coinciding with the values element in the visions-of-nature umbrella and also using the distinction between intrinsic value versus utilitarian ones, Butler and Acott (2007) provide an assessment of nature's intrinsic value perception and adoption by employees of large land-managing organisations in the U.K. They found that the great majority of respondents recognised intrinsic value of nature but that their organisations largely do not, officially, even if dedicated to conservation objectives.

Landscape preference studies have a long research history in environmental psychology and sometimes also include visions-of-nature elements. One example is De Groot and Van den Born (2003), who found a strong preference (52 per cent of respondents) for wild landscapes, described as places where one may 'experience the greatness and forces of nature'. This preference did not correlate with the respondents' image of relationship with nature. The authors did, however, identify a correlation between landscape preference and image of nature; subjects ascribing a high level of naturalness to wild nature and less to the other (e.g. Arcadian) types of nature strongly preferred wild landscapes. As another example of mixed studies, Van den Berg et al. (2006) investigated landscape preferences and values and images of nature amongst respondents with different educational backgrounds. Biology and psychology students more strongly preferred unmanaged landscapes compared to agriculture students, and these results were related to images and values of nature; a more ecocentric choice of images and values correlated positively with the preference for unmanaged landscapes.

A vast body of research has been produced on environmental attitudes often using the NEP ('New Environmental Paradigm') scale, e.g. Van Liere and Dunlap (1980), Dietz et al. (1998), Arcury (1990), Berenguer et al. (2005), Thompson and Barton (1994), Schultz and Zelezny (1999), Dunlap

VISIONS OF NATURE IN EASTERN EUROPE

and Van Liere (1978), Dunlap et al. (2000). This tradition contains two of the Polish sources; they indicate that environmental friendliness in women was higher than in men, and that the young were generally better environmentally educated and aware than the old (Ryżak, 1992; Nęcki, 2004). The NEP scale covers only a rudimentary part of the visions of nature concept, however, containing just a few items that express the Mastery over nature relation (Van den Born, 2006). We will therefore not review this literature here.

2. RESEARCH QUESTIONS AND METHODS

2.1 Research Area and Questions

This paper describes lay opinions towards the natural environment in Poland, structured through the visions-of-nature concept, with special focus on the Lublin Region. The Lublin region is an area characterised by small towns and a relatively natural agricultural landscape, without heavy industries or large-scale natural elements. The research goal was descriptive and exploratory, but we also attempted some comparisons with the previous findings in the Netherlands. Furthermore, we were interested in underlying experiences with nature and natural places, which influenced the visions of nature of our respondents. In order to obtain a deeper understanding of the concept, in depth interviews were conducted with random participants of different age, gender and background. Therefore the paper addresses the following questions:

- What is the people's image of nature in this region? For instance, are naturalness and human influence understood as oppositions?
- What values (instrumental and intrinsic) do people in this region attach to nature?
- What are the existing images of the appropriate relationship between humans and nature? This question has a qualitative component (do existing classifications of this relationship fit the Polish data?) and a quantitative component (to what degree do people in this region adhere to the images in the classification?).

2.2 Methods

Methods were both qualitative and quantitative. For the quantitative part, a questionnaire was designed to investigate the three elements of visions of nature. The design was tested and adapted in a pilot and a test-retest study,

reported in the Appendix. The questionnaire comprised three scales on four pages, with a total of 52 items. Although the questionnaire's language was Polish, it was originally created in English. It was put to a return translation, by three separate translators, from English to Polish and back, to assure congruency between language versions.

The first scale, images of nature, investigated the meaning of nature exemplified in 11 instances of nature. Since we were interested in cognitive categories we used short descriptions, not photographs, as in previous visions-of-nature studies. Examples of instances were 'birds in the field', 'potted plant', the Tatra Mountains and so on. The full list is in Tables 3 and 4. The scale contained two subscales: the first to assess perceived naturalness and the second for perceived human influence. Each subscale allowed subjects to assess items from 1 ('not at all') to 7 ('very much').

The second part of the survey, dedicated to values of nature, was adapted from the work of Van den Born et al. (2001) and Buijs and Volker (1997). It was a list of 11 items, under the heading 'Nature is important for:', which represented a choice of functional values (for instance: scientific, agricultural and recreational) plus one item for intrinsic value, worded as nature being important for 'its own sake'. The full list is in Table 5. Participants were asked to assess the values from 1 to 7.

The image of the relationship between humans and nature was addressed by the last part of the questionnaire. Like the other parts, it is a Likert scale with items in the form of statements such as 'Nature is our home' or 'Although nature has value of itself, humans stand above it'. Several items were taken over from the earlier research in the Netherlands but the list as a whole represented the classification of Table 2. Participants assessed each statement on a scale from 1 ('strongly disagree') to 5 ('strongly agree'). It consisted of 30 items with 12 translated from the Dutch equivalents and 18 added to express the full generating typology.

Additionally, 26 in-depth interviews were conducted with participants who also filled out the questionnaire. The fully open form of the interview, starting with a question to describe their experience with nature and outdoor natural places, was intended to encourage respondents to talk freely about their visions of nature in their own terms. All interviews were conducted in person and held in a place chosen by participants.

2.3 Sampling

The participants came from different places within the Lublin region, namely Lublin town (300.000 inhabitants), the smaller (industrial) town of Puławy

VISIONS OF NATURE IN EASTERN EUROPE

(53,000), mixed rural-commuter villages in the vicinity of Lublin, and a number of small rural villages along the Vistula River. More than 230 questionnaires were distributed in person (by pollsters), who received 179 valid answers, which is a very high response rate for Poland. Twenty-six interview respondents were chosen among those who provided a valid questionnaire. Table 6 in the Appendix contains the basic demographic data of the total sample. The majority of the rural group had some kind of family farm which supplied an additional source of income, apart from other occupations, which is common for Polish smallholders. Demographic variables of this sample turned out to be representative for the region, with the exception of gender. There were 62 per cent female participants in the sample, compared to the 52 per cent for the region.

2.4 Statistical Analysis

Technical details are in the Appendix. Factor analysis has been a key technique in the treatment of the survey results. Out of a list of items in a questionnaire, a factor analysis forms groups of items that respondents appear to 'keep together'. If, for instance, respondents who agree with item 3 also tend to agree with item 5, and other respondents who disagree with item 3 also tend to disagree with item 5, these two items are identified as representing a single concept (a 'factor'). These factors are then named by the researcher (which is an interpretative act). Often, several solutions are possible, e.g., with three or four factors, which vary in degree of statistical strength but also in degree of theoretical interpretability, so that the researcher has to find the optimum. Through factor analysis therefore, quantitative data yield a qualitative result, namely, an empirically grounded classification.

3. RESULTS

3.1 Images of Nature

Each subscale was analysed separately. The factor analysis of the 'naturalness' scale revealed four factors forming a very clear pattern. Participants distinguished four types of nature, labelled by us as *urban nature*, *cultural (idyllic) landscapes*, *useful nature*, and *wild nature*, see Table 3. The solution explained 71 per cent (cumulatively) of the variance.

The same procedure was repeated for the second subscale, *human influence*. We also obtained a four-factor solution, which explained cumulatively 69 per cent of variance. One of the items ('pigeons on the town square') had

TABLE 3. Survey items and their factor scores on degree of naturalness.

Item	Factor loadings	Perceived degree of naturalness (<i>Mean</i>)	SD
<i>Urban, tamed nature</i>			
City park	.54	3.90	1.65
Potted plant	.93	2.85	1.67
Front yard garden	.64	4.12	1.46
<i>Cultural, idyllic landscapes</i>			
Willows by the field path	.61	4.97	1.53
Meadow by the river	.63	5.92	1.22
Birds in the fields	.64	5.58	1.60
Pigeons on the town square	.52	3.62	1.67
<i>Useful (rural) nature</i>			
Arable fields	.75	3.95	1.82
Cows in the meadows	.78	3.93	1.66
<i>Primeval, wild nature</i>			
Tatra Mountains	.89	6.56	0.96
Białowieża Forest	.70	6.57	0.93

Factor loadings are the degree of fit of the item in the factor. Mean scores represent an average response of participants, on a scale between 1 ('totally unnatural') and 7 ('totally natural'). The last column shows the standard deviation (*SD*).

a factor loading below .45 and was dropped. For the rest, the factors almost fully coincided with those obtained for the naturalness subscale (Table 3), and the most natural categories were also perceived as the least influenced. Naturalness and degree of human influence were not each other's exact opposites, however. Wild nature (Tatra Mountains and Białowieża Forest) and idyllic nature, with scores of almost 7 and 5 on naturalness (Table 3) were at the same time perceived as influenced by humans (scores of 3.5 both). In other words, mild human influence was not perceived as subtracting from naturalness, even when human influence was seen as undesirable, as worded for instance by the following interview respondent: '*I was always taught to respect the mountains, to admire nature and its forces, and to leave it be.*' (Woman, 32). The reverse appears to be true as well. The two categories perceived as under high human influence (scores around 6) still appear to score around 4 on perceived degree of naturalness (Table 3). Rural landscapes, for instance, though highly influenced by humans, were seen to still retain

VISIONS OF NATURE IN EASTERN EUROPE

many natural elements, such as the cornflowers, cockles and skylark in the following quote: *'This interview reminds me of a narrow balk between corn fields. I walked there every summer day because it led to a field where I used to work. I can easily evoke a beautiful, sunny day, and myself going along the field. Ears of wheat surround me, the field is full of blue cornflowers and pink cockles, I can spot a skylark flying.'* (Woman, 54). The same pattern is true for items such as gardens and parks.

Summarising this result, it appears that respondents have a broad and graded perception of nature, categorised in coherent types that largely overlap if viewed from a naturalness or a human influence perspective. Natural landscapes can still be seen as natural even if under a mild degree of human influence, and highly influenced landscapes can still be seen as containing significant naturalness.

3.2 Values of Nature

On the 7-points values-of-nature scale, respondents ranked all items as important or very important (mean scores above 4.0). The value of nature for future generations and health ranked highest, with intrinsic value and relaxation value following closely. Intrinsic value was given a 6 or 7 on the 7-point scale by 76.5 per cent of the respondents. Descriptive statistics are given in Table 4, with exact translations of the items of the questionnaire.

TABLE 4. Values-of-nature – descriptive statistics of answers on a scale between 1 ('not important at all') to 7 ('very important').

Nature is important for:	Mean	SD
Future generations	6.17	1.07
Health	6.12	1.09
Peace of mind and relaxation	6.09	1.20
Its own sake	6.09	1.13
Aesthetic reasons	6.02	1.16
Wildlife	5.63	1.29
Recreation and tourism	5.48	1.50
Medicine and technology	5.37	1.38
Agriculture	5.28	1.33
Earth and mankind history	5.08	1.62
Scientific research	4.75	1.73

The values are ordered in decreasing mean rank. SD is standard deviation.

In the interviews, the discussion was not pre-structured by the formal list of values. The majority of respondents attached the greatest importance to aesthetics, often using words like 'picturesque' and 'beautiful', or simply stating: '*First of all, I liked it because it looked nice*' (Man, 31). The other very important value for respondents is connected to relaxation and peacefulness:

'The area reminds me of lack of problems and relaxing, I like to recollect the peacefulness of nature, the silence of the place.' (Woman, 50), or:

'I enjoy green places, I like when there is a lot of nature around. I have a hideout by the river, which I found by accident – it's different from other places because of nature and silence. If I feel like running away from the daily routine I go there.' (Man, 19).

3.3 Relationship with Nature – Survey Results

Against the five categories of the classification that was used to generate the items of the relationship with nature scale (Table 2), the factor analysis showed that a four-factor classification fitted the data best (explained variance: 40.8 percent). The minimum factor loading was set as .43 and with that, only 17 items were retained for further analysis. The names for the factors were coined according to the previous studies existing in this field. The first factor grouped the items of strongly anthropocentric definition, and was named *Conqueror of nature*. The next factor, named *Steward of nature*, represented the attitude of responsibility for nature. The third grouped the most ecocentric items of the scale and was called *Spiritual participant in nature*. The last factor comprised two items that both related to pet animals only. The factor was called *Humans and companion animals*, and has been dropped here, for lack of interpretative value. Table 5 gives the overview of factor scores. The items are literally those used in the questionnaire.

Taking a look at the levels to which people agreed with the statements, it appears that the Conqueror image is by far the least popular (most scores around 2, i.e. 'disagree'). The Steward, with all its items at more than 4 on the 5-point scale, was strongly adhered to, but closely followed by the ecocentric image of Participation in nature that had all its items at the 4 level. The Stewardship statement of 'Nature was created by God, who made us responsible for His masterpiece' received 44.7 per cent of fours ('agree') and 36.3 per cent of fives ('strongly agree') with only 8.4 per cent of disagreements. Other Stewardship statements that do not refer to religion scored even higher, e.g. 'It is our duty to conserve nature for future generations' to which 36.9 per cent of participants agreed and 59.2 per cent strongly

VISIONS OF NATURE IN EASTERN EUROPE

TABLE 5. Images of the relationship of humans and nature.

Items	Factor load-ings	Level of adherence (mean score)	SD
<i>Humans as conquerors of nature</i>			
We have the right to change nature at will.	.61	1.64	0.81
I agree with the use of artificial fertilisers in any amount, if needed.	.55	2.02	1.00
We can change our environment because we are the most important here on Earth.	.67	1.86	0.96
It is good to use as much pesticides in farming as required for a good harvest.	.62	2.00	0.98
If I were a politician, I would rather spend money on industrial growth than on nature protection.	.52	2.31	1.02
Although nature has value of itself, humans stand above it.	.49	3.07	1.28
Nature should be protected only in special areas meant for that purpose.	.62	1.96	0.91
<i>Humans as stewards of nature</i>			
Nature was created by God, who made us responsible for His masterpiece.	.45	4.06	0.97
Politician should take good care of funds for environmental protection.	.70	4.35	0.74
It is our duty to conserve nature for future generations.	.49	4.53	0.66
We have to take care so that wild plants and animals keep their own places to live.	.71	4.38	0.62
Nature is our home.	.48	4.04	0.81
<i>Humans a spiritual participants in Nature</i>			
The closer to nature one is, the better and wiser he/she becomes.	.52	4.04	0.77
The oldest trees are like wise, old people.	.44	3.94	0.98
Through nature we can see and meet God.	.49	3.99	0.95

The questionnaire items are grouped in three classes. Mean scores represent the average response of respondents (1 – strongly disagree; 2 – disagree; 3 – cannot decide; 4 – agree; 5 – strongly agree). The last column shows the standard deviation (SD) of the mean. The order of items in each factor is the same as in the questionnaire.

agreed. The stewardship factor was also the most consistent one, with the lowest standard deviations of responses. In spite of this clear-cut overall result, the fact that only 15 items formed the final factor solution suggests that the scale requires further development. This is reinforced by that of the 12 items taken from the Dutch scale (e.g. Van den Born, 2006), seven had factor loadings below .30 (meaning that they did not fit well in any factor) and consequently were dropped from the analysis.

3.4 Relationship with Nature – Interview Results

'Nature simply cast a spell on me – the field was the most beautiful place in the whole world: the smell, the sight, the happiness. I think it influenced me to choose to study agriculture. It was a pleasure to learn about plant cultivation and farming. Although I live in a city I love the countryside and I go there as much as I can. Besides, I try to introduce a bit of nature to my everyday life by using a lot of flowers at home.' (Woman, 54)

The above quotation illustrates much of the general thrust in the interviews. Questions about nature and natural places evoke memories of holidays and experiences from childhood, resonating with the 'nature is our home' item in the questionnaire.

'I find nature in Roztoczański National Park. My whole family used to go there, where we had a small cottage. When I was older the area remained the same. We used to go hiking in the forest on the surrounding hills. My favourite area is the Echo Lakes, situated in the park. They lie very picturesquely in the middle of woods, with Koniks [Polish primitive horses] grazing on the shore.' (Man, 26)

'The house where I was born was in the countryside, surrounded by lots of trees. Every year I went there for summer holidays. I most liked lying among the trees of the orchard and reading. Those moments spent in my home village are my very important memories. (...) I am very much connected to my family estate and I regret that I cannot visit it any more.' (Woman, 50)

The stories of respondents supported the former quantitative findings to a substantial degree. The Stewardship image with direct references to God can be found in answers, like in case of this woman (32): *'My mother is a religious person. She admired the mountains as God's untamed and breathtaking creation. I agree, and respect them too.'*

Elements that we previously mentioned as distinctively Polish are prevalent in respondents' stories. Nature described is sometimes referred to as 'second home' and is often accompanied by a romanticised and nostalgic view of a local landscape.

VISIONS OF NATURE IN EASTERN EUROPE

'A forest by my family house was my second home. I spent all my free time there. There is a small clearing in the forest, beautifully bathed in sunlight. In early spring the forest turns into a yellow, white and green carpet of anemones and grass. Everybody had his favourite tree; we carved our names on the trunks. I had a birch, which I liked to hug sometimes. The forest evokes feeling of joy, being carefree and calm, just like when I was a child. I go hiking in my forest every time I visit my family. It is the symbol of my happy childhood.' (Woman, 30).

Respondents find nature in unexpected places, for instance, this man (28) describing his grandmother's garden: *'My granny lived in the mountains, but that did not really matter much to me. But her garden was my jungle when I was a kid. It was very, very big for me. I could hide, run like wild, climb the trees, play and cause a bit of destruction on her vegetable and flower beds. That was as natural as could be for me those days. The time of barefoot freedom.'*

Another respondent (Man, 31) was fascinated with what was called 'penetrative nature', in De Groot and Van den Born (2003): *'My natural place was an old war cemetery [1914–1918]. The narrow path that led there was overgrown and picturesque. I liked its peacefulness, atmosphere and the space for reflection the cemetery provided. I enjoyed going there because it also gave me a feeling of being isolated and sheltered, as if time stood still or did not exist at all. I used the place to rest, retreat from daily life and just be by myself for a while. Nature, the greenery there was intrusive and destructive – the graves of German soldiers were small and simple, neglected and overgrown. The cemetery had a lot of meaning to me. There were men buried there who, by sheer chance, had made it to that place and stayed forever, now to be overcome by grass and weeds.'*

Many respondents mentioned the role of parents and wider family as formative for their vision of nature. This was often done in passing as in preceding quotations, and sometimes quite explicitly, for example: *'My parents were both experienced mountain hikers. They started taking me along on easier trails when I was five. (...) I have never seen or heard of any cruelty towards animals, even pests, from my family. Quite the contrary, they were actively against it. My parents also always have pets at home. My granddad, a cat person, by the way, was a goldmine of plant and animal taxonomy. I think all this contributed a lot to my world view.'* (Woman, 32). Connected to this, several respondents mention efforts to pass on their nature awareness to the next generation, e.g.: *'I teach my child to admire nature as I do myself. We also have a birch planted in the back yard, and we sit there often to read stories and do homework together.'* (Woman, 30).

4. DISCUSSION

Visions of nature have been studied extensively in the Netherlands (see Introduction) and therefore offer good issues for comparison. In the present section, we will first discuss our findings in the light of these preceding studies. The last section contains a reflection on methodology connected to universality versus particularity of findings.

4.1 Images of Nature

How do Poles see nature? The scales of naturalness and human influence showed that respondents have a broad, but graded view of what nature is, organised into coherent types. One of these types represents the traditional and picturesque elements of 'real Polish' landscape. These willows, meadows and birds are attributed high levels of naturalness even though they are seen as moderately influenced by humans. This pattern of non-exclusiveness of naturalness and human influence is visible in the two subscales overall. Human influence always subtracts from naturalness, but degrees of naturalness can go well together with degrees of human influence. These findings show salient similarities with Dutch image-of-nature research. Although we partly based our items on typically Polish types of nature, a similar pattern of factors emerged when naturalness was assessed, with Poles also distinguishing Arcadian from other landscapes, for instance. This appears to reflect the general European landscape with its low prevalence of wilderness and its many landscapes produced by a long history of relatively benign human-nature interactions, and the attachment to those traditional landscapes. In contrast, the American focus on wilderness as the only place where nature can be encountered may be seen as reflecting a much more dichotomous pattern of relatively domineering ('frontier') mentalities producing the agricultural landscape and leaving only wilderness as a refuge for nature (e.g. Ebenreck, 1983).

4.2 Values of Nature

How do Poles value nature? Responses showed that nature is valued highly in general. Interestingly, no prevalence was found for economic and self-centred values, as traditional rational choice theories would suggest. The top of the list is shared by the value of nature for future generations, the value for health, and nature's non-utilitarian ('intrinsic') value, above recreational and agricultural values. This is in stark contrast with Polish environmental

VISIONS OF NATURE IN EASTERN EUROPE

and nature policies, which adhere to strictly utilitarian views on nature. The wide recognition of intrinsic value of by the public at large had been remarked before in the Netherlands and elsewhere (e.g. Van den Born et al., 2001), and the same mismatch between personal and organisational values was strikingly revealed by Butler and Acott (2007) in the UK and by Campagna and Fernández (2007), who have taken stock of the vision and mission statements of international environmental organisations. Both studies found that intrinsic value statements are virtually absent in the institutional statements, as if loving nature for its own sake is something to be ashamed of, even for conservation organisations.

4.3 Images of Relationship

How do Poles conceptualise the appropriate relationship of humans with nature? The factor analysis showed that the classification designed to reflect typically Polish attitudes did not fit the data very well. In fact, the classification generated by the factor analysis lies closer to the more general and philosophy-based typology articulated by Van den Born (2006) that consists of Mastery over nature, Stewardship of nature, Partnership with nature and Participation in nature. Out of this classification, the partnership image did not emerge from our data but that is in fact common for other visions-of-nature studies. In De Groot and Van den Born (2003), for instance, the Partnership-generated items do not return in a separate Partner factor in the factor analysis, but distributed over the Steward and Participant images. In Van den Born (2006), we find a five-factor solution of the factor analysis, where the two ecocentric images of the generative classification (Partner and Participant) return as three factors in the factor analysis. The interviews reported in Van den Born (2008) may have uncovered one reason underlying the difficulty of articulating a set of images of relationship that is truly congruent with the respondents' conceptualisations. Respondents tended to reject the Partnership image not because it would not be a good ideal but because it is unattainable in practice or even dangerous; human nature is too exploitative to cope with the freedom inherent in the Partnership image.

To what degrees do Poles adhere to the three images of relationship? The Master image was by far the least adhered to, with Stewardship on top and Participation following closely. This is remarkable since Mastery over nature is often seen as the dominant ideology of the West, and it certainly was during Poland's 45 years of communist rule. Stewardship of nature, with its roots in Christian doctrines, appears to have survived alive and well in Polish minds and hearts. The adherence to spiritual participation

in nature was unexpected, given its commonly assumed association with deep ecology, 'post-materialist' values and urban circumstances, which are phenomena that do not prevail in the rural and relatively poor economic circumstances of the Eastern Polish fieldwork region. The result is in fact remarkably congruent with the Dutch findings (e.g., Van den Born 2006). It should be kept in mind, however, that the specific items that make the images of relationship do not coincide with those of the Dutch scale, almost all of which turned out to have quite low factor loadings. On a level below the general congruence of concepts and levels of adherence, therefore, regional-cultural differences appear.

A methodological issue connected with these findings whether Dutch or Polish, is that the questionnaires are filled out, and the interviews conducted, with the respondents in a certain context, namely background thoughts about the values of nature and a physical context of being at home. What would have been the results of the same questions with the respondents in a different state of mind, e.g., in a context of work? What, to mention an extreme example, would have been the answers if a respondent would have a job as a bulldozer operator and a question about the value of nature would have been isolated from the others and put to the respondent while on the bulldozer? Or, for that matter, in the ballot box? This question of contextuality requires further research.

4.4 A 'Universalising' Methodology?

The major tendency of our quantitative results is that Polish people are strikingly like the Dutch. The qualitative interviews partly confirm this result but on the other hand also appear to elicit images and feelings that were identified beforehand as more characteristically Polish, especially the strong connections between nature and romanticism, home and family. Could this be a general effect of the methodology? Would quantitative work, working with pre-structured questions or items, tend to bring out the universalities among people, while qualitative research, using open interviews, would tend to elicit the differences between their cultures? Circumstantial evidence suggests that this could be the case indeed. Kahn (2002), using a structured list of questions, found out that poor urban children from Houston in Texas, children from a remote village along the Rio Negro in Amazonia, and children in urban Europe (Lisbon) 'demonstrated remarkably similar environmental moral values and knowledge' and employed similar justifications to explain their reasoning (Kahn, 2002: 101). In opposition to this, a study by De Groot and Zwaal (2007) in Cameroon, based on a very open method (storytelling),

VISIONS OF NATURE IN EASTERN EUROPE

revealed deep differences between the Western and the indigenous views on nature. Nature tended to be seen primarily as a powerful force on which people are dependent (e.g., if it does not rain, famine will result). An idea of stewardship sits very uneasily with such an image of nature – we may hope that nature will care for us rather than the other way around.

If this pattern of methodological influence on the universal versus the particular findings is true indeed, we may conclude that the present study has primarily served to bring out elements of a broad European culture in which for instance the idea of Stewardship is widely adhered to, while also eliciting some notions that may be more typically Polish, such as the idea of nature as home.

5. CONCLUSION

The present study has brought out elements of a broad European culture of nature, characterised by a graded image of nature, a wide acknowledgement of nature's intrinsic value, a rejection of Mastery over nature, a strong adherence to the Stewardship image of relationship, with more ecocentric visions well represented too. Some of the questionnaire results but especially the interviews also elicited a number of more specifically Polish elements, such as the strong connection between nature and romantic feelings and the concept of nature as home. The latter concept supports a Stewardship notion in general since home is something you care for, but in terms that are very different from the rather abstract questionnaire statements.

Visions of nature are not elicited in a context of individual action. They lie rather in the sphere of public culture that finds its practical connections through the public institutions of nature conservation, education, environmental policies, and so on. The results of our study show that institutional action for nature has a sound public basis to work on – much sounder, probably, than individual Poles themselves are inclined to think and certainly much more ecocentric than the public institutions themselves express. This reinforces the call of Butler and Acott (2007) for environmental agencies and organisations to rethink their narrowly utilitarian visions and policies towards nature. They also reinforce the call of Van den Born (2007: 176) for environmental philosophy to be more aware of and actively responding to persistent contradictions, e.g., on intrinsic value, between professional philosophy and lay visions.

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VISIONS OF NATURE IN EASTERN EUROPE

APPENDIX

Demographics

TABLE 6. Demographics of participants (n = 179)

Respondents	Frequency	Percent
Gender		
Female	111	62.0
Male	68	38.0
Residence		
Rural	90	50.3
Urban	89	49.7
Age		
18–25	57	31.8
25–35	68	38.0
<35	54	30.2
Education		
Student	57	31.8
Secondary	83	46.4
Higher	29	16.2
Other	10	5.6

Reliability and validity establishment

Due to the fact that it was the first endeavour of this kind in Poland, a number of validation procedures were carried out (Guilford, 1936). First, a pilot study (fifteen participants, students) was conducted in order to remove or change the items or tasks that were reported as unclear or confusing. As a result, one item from the relationship-with-nature scale was removed. Besides, the values-of-nature scale at first required the ordering of items in descending importance. The pilot study showed that respondents performed badly in this task. Many items were skipped and subjects declared that the task was tedious and confusing. The task was therefore changed to a Likert scale with separate scoring of the items. Finally, contrary to what Rosch and Mervis (1975) or Rosch et al. (1976) would advise, we decided to retain two instances of nature on the images-of-nature scale which named individual instances rather than categories: 'Tatra Mountains' and 'Białowieża Forest'. They are the only members of the 'high mountains' and 'primeval forest' categories in Poland (Białowieża in the whole of Europe), and the respondents of the pilot study found these easier to handle than the abstract categories.

The test-retest method was used for the reliability check. Sixty respondents from the research sample were asked to fill out the questionnaire twice, with a week interval. Correlation coefficients ($p < .01$) between two trials

for the images-of-nature scale (with its two subscales) varied from $r = .36$ to $r = .73$. Two item correlations turned out to be insignificant (at $p = .05$). These were dropped from the scale. The same procedure was repeated for values-of-nature and the images-of-relationship scales. Correlation results ($p < .01$) of the former varied from: $r = .48$ to $r = .88$. No items needed to be dropped. The item correlations of the images-of-relationship scale were acceptably high as well, (from $r = .89$ to $r = .32$, average $r = .59$) and significant ($p < .01$), after we had dropped one item with $r = .21$.

It was impossible to compute internal reliability using Cronbach's alpha coefficient for the whole survey, because of the scales' construction: item scores did not sum up for a global result. However, Cronbach's alpha was computed for the results of the CFA (common factor analysis) of the scale of relationship with nature, and the subscales of images of nature. These are described in detail in the results section. In the CFA of the images-of-nature subscales, four factors were obtained for both the 'naturalness' and 'human influence' subscales. Cronbach's alpha varied from .57 to .85, with the average of .74. For the relationship-with-nature scale we also obtained a four-factor solution, with Cronbach's alpha at .80 for the first factor (7 items), .73 for the second (5 items), .50 for the third (3 items), and .61 for the last (2 items). The reliability was established for the main research sample ($N = 179$), because the sample used for validation ($N = 60$) was relatively small.

Analytical Methods

The SPSS 12.01 program was used for all quantitative analyses. Where factor analysis was employed, it was CFA (common factor analysis, also known as principal axis factoring), and obtained factors were rotated orthogonally using Kaiser's Varimax rotation method (Fabrigar et al., 1999). We chose the number of factors according to scree plot results combined with Kaiser's rule of dropping every factor with eigenvalue below 1.0. For each factor analysis K-M-O sampling adequacy tests were also performed with the results varying from .72 to .80. For the analysis of interviews, we used Kwalitan 5.0, a software package for analysing qualitative data (www.kwalitan.nl).