

Timo P. Karjalainen

THE ENVIRONMENT
IN CONTEXTS:
ENVIRONMENTAL
CONCERN IN THE KOMI
REPUBLIC (RUSSIA)

FACULTY OF EDUCATION,
DEPARTMENT OF EDUCATIONAL SCIENCES AND TEACHER EDUCATION,
UNIVERSITY OF OULU

E

SCIENTIAE RERUM
SOCIALIUM



ACTA UNIVERSITATIS OULUENSIS
E Scientiae Rerum Socialium 85

TIMO P. KARJALAINEN

**THE ENVIRONMENT IN CONTEXTS:
ENVIRONMENTAL CONCERN
IN THE KOMI REPUBLIC (RUSSIA)**

Academic dissertation to be presented, with the assent of
the Faculty of Education of the University of Oulu, for
public defence in Keckmaninsali (Auditorium HU 106),
Linnanmaa, on November 17th, 2006, at 12 noon

OULUN YLIOPISTO, OULU 2006

Copyright © 2006
Acta Univ. Oul. E 85, 2006

Supervised by
Professor Timo Järvikoski

Reviewed by
Professor Markku Kivinen
Professor Ilmo Massa

ISBN 951-42-8249-3 (Paperback)
ISBN 951-42-8250-7 (PDF) <http://herkules.oulu.fi/isbn9514282507/>
ISSN 0355-323X (Printed)
ISSN 1796-2242 (Online) <http://herkules.oulu.fi/issn0355323X/>

Cover design
Raimo Ahonen

OULU UNIVERSITY PRESS
OULU 2006

Karjalainen, Timo P., The environment in contexts: Environmental concern in the Komi Republic (Russia)

Faculty of Education, Department of Educational Sciences and Teacher Education, University of Oulu, P.O.Box 2000, FI-90014 University of Oulu, Finland

Acta Univ. Oul. E 85, 2006

Oulu, Finland

Abstract

This study analyses environmental concern in the Komi Republic from the contextual perspective. The main research data consisted of thematic interviews of industrial workers (n = 114), teachers (n = 30), administration staff (n = 33) in the towns of Usinsk and Vorkuta in the Northern Komi Republic. In addition, the in-depth thematic interviews of state administrators, scientists and NGO actors are analysed as well as the survey study conducted in several regions in the republic. As a broad theoretical frame the study uses the context model, in which environmental concern in everyday life is interpreted at five closely connected levels. The study consists of four previously published articles, one submitted manuscript and a concluding chapter.

As the major theoretical and methodological idea the study presents two different environments: a life-world of the individual, where environmental changes are perceived and experienced in a framework of everyday life, and secondly, global environmentalism's Environment, which is nowadays in Western discourses viewed as a globe. This study focuses on the life-world perspective, and asks how these two environments communicate with each other in the particular contexts of the Komi Republic.

In general, environmental issues hold a low profile compared with other social problems in the Komi Republic. However, the citizens of the Komi Republic are concerned about so-called 'brown' environmental issues; that is issues of pollution and waste disposal in their immediate environs. The public's environmental concerns are mostly about 'ecological risks' – the health and well-being implications of environmental degradation. Environmental problems are regarded as part societal transformation. This 'brown' environmentalism is understandable in Russia since approximately 60 million Russians now live in zones with adverse environmental situations. Green or global issues are not much discussed among the public of Russia.

The findings stress that engagement with the surrounding environment, local conditions and socio-political contexts shape perceptions and framings of environmental change. Local perceptions and local knowledge are still a crucial basis for concern.

Keywords: context, environmental concern, environmental politics, environmental sociology, life-world, local knowledge, perception, Russia, the Komi Republic

Karjalainen, Timo P., Ympäristö konteksteissa: Ympäristöhuoli ja -tietoisuus Komin tasavallassa (Venäjä)

Kasvatustieteiden tiedekunta, Kasvatustieteiden ja opettajankoulutuksen yksikkö, Oulun yliopisto, PL 2000, 90014 Oulun yliopisto
Acta Univ. Oul. E 85, 2006
Oulu

Tiivistelmä

Tutkimuksessa tarkastellaan ympäristötietoisuutta ja -huolta Komin tasavallassa kontekstuaalisesta näkökulmasta. Tärkein osa tutkimusaineistosta koostuu teollisuustyöntekijöiden (n = 114), opettajien (n = 30) ja yritys- ja julkisen hallinnon edustajien (n = 33) teemahaastatteluista Usinskin ja Vorkutan kaupungeissa tasavallan pohjoisosassa. Lisäksi työssä on analysoitu valtion virkamiesten, tutkijoiden sekä kansalaisjärjestöjen toimijoiden teemahaastatteluja sekä tasavallan eri alueilla tehdyn kyselytutkimuksen tuloksia. Tutkimuksessa hyödynnetään kontekstimallia, jossa ympäristötietoisuutta tarkastellaan viiden toisiinsa limittyvän tason kautta. Tutkimus koostuu neljästä julkaistusta artikkelista, yhdestä käsikirjoituksesta ja yhteenvetoluvusta.

Tutkimuksen tärkein teoreettinen ja metodologinen idea jakaa ympäristön kahtia: ensimmäinen on yksilön elämämaailma, missä ympäristömuutokset havaitaan ja koetaan arkielämän kehystämänä, ja toinen, globaalinen environmentalismin ympäristö, minkä nykyisin ajatellaan käsittävän koko maapallon. Tämä tutkimus keskittyy elämämaailmanäkökulmaan ja kysyy, kuinka nämä kaksi ympäristöä kommunikoivat toistensa kanssa eri konteksteissa.

Yleisellä tasolla tarkasteltuna ympäristöongelmat ovat taustalla kansalaisten elämässä verrattuna muihin sosiaalisiin ongelmiin. Komin tasavallan asukkaat ovat kuitenkin huolissaan niin kutsutuista 'ruskeista' ympäristökysymyksistä eli lähinnä saastumiseen ja erilaisiin jätteisiin liittyvistä ongelmista. Kansalaisten ympäristöhuoli kytkeytyy ennen kaikkea ekologisiin riskeihin – ympäristön pilaantumisen terveydellisiin ja hyvinvointiin liittyviin seuraamuksiin. Näin ympäristöongelmat limittyvät muiden sosiaalisten ongelmien kanssa ja koetaan osaksi yhteiskunnallista muutosta. Tämä 'ruskea' ympäristöhuoli on ymmärrettävä ilmiö Venäjällä, missä noin 60 miljoonaa kansalaista asuu terveydelle haitallisissa ympäristöoloissa. 'Vihreitä' tai globaaleja ympäristökysymyksiä ei juurikaan käsitellä Venäjän julkisessa keskustelussa.

Tutkimuksen tulokset painottavat lähiympäristöön sitoutumisen ja elämämaailman merkitystä ympäristömuutosten havainnoinnissa sekä yhteiskunnallisten kontekstien vaikutusta ympäristökysymysten kehystämiseen. Paikallisella havainnoinnilla ja tiedolla on edelleen suuri rooli ympäristötietoisuuden muotoutumisessa.

Asiasanat: elämämaailma, havaitseminen, Komin tasavalta, konteksti, paikallinen tieto, Venäjä, ympäristöpolitiikka, ympäristösosiologia, ympäristötietoisuus

Acknowledgements

The research for this thesis was carried out at the Faculty of Education of the University of Oulu during the years 1999–2005. Professor Timo Järvikoski, the father of our environmental sociology group, my supervisor and co-author, deserves my deepest gratitude for his support and inspiration, and for being easy to approach whenever I needed comments on the manuscripts. Professor Järvikoski hired me in 1998 to work as a research assistant for the sociological part of the TUNDRA (“Tundra Degradation in the Russian Arctic”) project, which was an interdisciplinary global change research project supported by the EC Environment and Climate Research Programme (contract nr. ENV4-CT97-0522, climate and natural hazards). In that way he started this PhD project and guided me to fields of sociological and environmental studies.

I would like to thank all TUNDRA project partners for the help in the fieldwork, enthusiastic discussions during the project meetings and co-authoring. Especially I would like to thank anthropologist Joachim Otto Habeck for sharing his excellent fieldwork experience from different parts of Russia and intellectual spirit, as well as hard work periods of writing our joint article. I also wish to thank PhD Tony Walker for the hard work done as the leading author of our final joint article. Professor Peter Kuhry is warmly thanked for coordination of the whole project. I am also sincerely grateful to the staff of the Komi Science Centre for helping and organising the fieldwork periods in the Komi Republic. My special thanks go to Vasili Ponomarev, the Institute of Biology, and especially to Aleksandr Maksimov, the Institute of Social, Economic and Power problems of the North, whose assistance in organising and conducting the interviews was essential.

In addition to the TUNDRA project this doctoral research was supported by the Finnish Graduate School for Russian and East European Studies (coordinated by Aleksanteri Institute, University of Helsinki), Academy of Finland, the Kone Foundation, the Multidisciplinary environmental graduate Net school of the University of Oulu, and Oulu University Scholarship Foundation, all of which are gratefully acknowledged.

I am also grateful to Professor Seppo Pöntinen who offered me working facilities at the Department of Sociology of the University of Turku in 2000–2002. Many warm thanks to my colleague and friend Timo Peuhkuri. Long-lasting and inspiring discussions with him in Turku have been fruitful and constructive in many phases of my studies and life.

Kalle Reinikainen, my friend, co-worker and sociological mentor, is especially and warmly thanked for help, support and inspiration he is always willing to offer in research, fishing and sailing. The other members of our excellent environmental sociology team, Päivi Haapasaari, Eila Louhimaa, Pentti Luoma and Tommi Sulkala, have also had an essential role in my research and deserve my heartfelt thanks.

Finally, I owe my dearest thanks to my small family, my wife Susanna and my son Aarni. You are above everything else, my beloved.

Oulu, October 2006

Timo P. Karjalainen

List of original papers

This thesis is based on the following papers, which are referred to in the text by their Roman numerals:

- I Karjalainen TP & Järvikoski T (2000) Natur och miljöproblem i stadbornas liv i Rysslands tundra – En fallstudie från Komi republiken. *Nordisk Östforum* 14: 57–71.
- II Karjalainen TP (2001) Institutional framing of environmental issues in the Komi Republic. In: Massa I & Tynkkynen V-P (Eds) *The Struggle for Russian Environmental policy*. Kikumora Publications, Series B: 17. Helsinki, 77–106.
- III Karjalainen, TP & Habeck OT (2004) When ‘the Environment’ comes to visit: local environmental knowledge in the far north of Russia. *Environmental Values* 13: 167–86.
- IV Karjalainen TP, Järvikoski T & Luoma P, Glocalization of environmental change – Perceptions of climate change in the Komi Republic (Russia). Manuscript, submitted for publication.
- V Walker TR , Habeck, J O, Karjalainen TP, Virtanen T, Solovieva N, Jones V, Kuhry P, Ponomarev V I, Mikkola K, Nikula A, Patova E, Crittenden P D , Young S & Ingold T (2006) Perceived and measured levels of environmental pollution: interdisciplinary research in the Arctic lowland of north-eastern European Russia. *Ambio* 35: 220–228.

List of figures

Fig. 1.	The research sites: The Komi Republic as part of Russia and two towns of thematic interviewing in 1998.....	22
Fig. 2.	Two views of the environment: (A) as a globe; (B) as a life-world.....	30
Fig. 3.	A contextual model for analysing environmental concern. A modification from Brand <i>et al</i> 's model.....	43

Contents

Abstract	
Tiivistelmä	
Acknowledgements	
List of original papers	
List of figures	
Contents	
1 Introduction	15
1.1 Prologue	15
1.2 The objectives of the study	19
1.3 The outline of the articles	19
2 Research process	21
2.1 TUNDRA project	21
2.2 Research materials and methods	23
3 Approach	28
3.1 The Environment and the environment	28
3.2 The life-world	32
3.3 The perception of the environment	33
3.4 Environmental concern	35
3.5 Contextual model of environmental concern	43
4 Results	46
4.1 The legacy of the USSR and resource based industrialism	46
4.2 Environmental discourses and politics	49
4.3 Milieu-specific life-worlds	50
4.4 Group specific features	53
4.5 The bounded situation and behaviour of individuals	55
5 Discussion and conclusions	58
References	
Appendices	

1 Introduction

1.1 Prologue

In my first fieldwork trip in 1998 from Syktyvkar, the capital of the Komi Republic, to the coal town of Vorkuta, I was astonished by the tidiness of railroad carriages and the energy of railway guards taking care of the well-being of passengers during the train journey. But also I was amazed when I saw a female railway guard very skilfully throwing the garbage from the train into a hole in the railway yard close to a little railway station. It seemed that this is the way of getting rid of waste here. In Finland no official would dispose of waste in this way.

This little episode captured my sociological imagination about the Russian people's environmental thinking and concern. It was also boosted by a quite common view held in the West which believes that Russians do not care much about the environment. I think that this is largely a kind of myth, based on the media's framing of environmental issues about Russia. This 'myth' is not something true or untrue, nor does it have some special, symbolic truth, but its truth is treated as a dogma which does not need any proof. Following Norbert Elias' idea that sociologists should see themselves as 'myth hunters' (Elias 1987), my task in this book is to dispel this myth, translate it into questions and look at what is left after answering these questions. Do Russians and more specifically the citizens of the Komi Republic care (or not care) about the same 'environment' as we do, for example, in Finland? What environmental issues are people in Komi concerned about if at all, and what kind of environmental concern and conceptions of nature do different social groups in the Komi Republic have?

Western scholars have actually little knowledge about ordinary Russians' environmental thinking and concern (Weiner 2000). According to Brand (1997, 213), "(i)n Western countries, nearly 30 years of public environmental debate have thus led to the emergence of specific normative standards of 'adequate' problems' perception and environmental behaviour". One may ask if there are those kinds of 'adequate' problems and behaviour in Russia? In the Soviet Union and Russia environmental discourse (and politics) has been different from that in the West. It arose from the nature protection debate until the 1960's (e.g., the protection of Lake Baikal) and became heated by the end

of Perestroika, when the critique by the environmental movement was an essential part of the opposition directed against the Soviet regime (Miroyatskaja 1998, Weiner 1999). After the collapse of the Soviet Union, environmental issues were in the public agenda for a couple of years but since then public environmental discourses have not prevailed in the political agenda or public debates. When the State Committee for Environmental Protection (Goskomekologiya) was abolished in May 2000, and its functions were delegated to the Ministry of Natural Resources, it became obvious that environmental issues and concern are weakly institutionalized in the structure of public policies, and evidently in cognitive and normative structures of the high level power elites (Massa & Tynkkynen 2001).

One of the main purposes of this thesis is to find out explanations for this weak institutionalization of environmental issues in Russia. This is done through the research materials gathered from the Komi Republic in the EU-funded project TUNDRA ("Tundra Degradation in the Russian Arctic"). The project, which was undertaken between 1998 and 2001, was an interdisciplinary research project launched to study climate change, industrial pollution and social perception of environmental degradation. The basic social-scientific aim (with anthropologists from the University of Aberdeen) within the lines of the TUNDRA project was to compare and contrast the forms of environmental awareness among the indigenous peoples of the Usa Basin (Komi and Nenets) with those of the "newcomer" population (Russians, Ukrainians, Tatars and others). In the sociological part of the study we investigated through a qualitative interview framework environmental concern among town dwellers of Usinsk and Vorkuta, and later on we widened our scope through the survey framework to the whole republic.

While Russian environmentalism and its environmental movement have been studied quite extensively by Russian (e.g., Yanitsky 2000) and foreign scholars (e.g., Pickvance 1998), public concern for environmental quality and issues has not been adequately researched. In Western countries the extensive research of public environmental concern stems from an assumption that the views of citizens have an important influence on environmental policy-making (Sairinen 2001). In the case of Russia, scholars may implicitly assume that since the country only has a recent history of democratic development, citizens' influence on policy-making is minor, and thus, environmental concern is not worth studying. One of the reasons for the lack of interest to study environmental concern in Russia might also be understood through Inglehart's theory of post-material values which explains the emergence of environmentalism in Europe and North America. This theory, however, has received much theoretical and also empirical critique (e.g., Lowe & Rudig 1986, Brechin & Kempton 1994). From this 'affluence hypothesis' perspective Russians' values are at present more economically or survival oriented than environmentally.

In previous studies Russians' environmental concern is studied using rather fragmentary pieces of global surveys (e.g., DeBardeleben and Heuckworth 2001), and in order to advance knowledge about *the nature of environmental concern among Russians*, we need at the moment to particularize first, instead of generalize. In other words, we must do ethnography on environmental concern and locate the research in some contexts since Russia is geographically a vast country with different social, economic, cultural and ecological contexts. One might say that opinion polls and surveys are *remote sensing* of environmental concern, but now we need *intimate sensing*. There are certainly some

common features of environmental concern in Russia across regional contexts, but even then, the following questions are needed: In what kind of situations and under which conditions do people find environmental changes threatening? How do people perceive and frame environmental changes and issues in their dwelling context, but also in the larger framework of (socio-cultural and economical transformations) Russia?

My approach – which I call the contextual approach – connects the dwelling perspective formulated by Tim Ingold (2000) and Karl-Werner Brand's contextual model for analyzing environmental concern. Firstly, I claim that an individual's perception of the environment is not culturally constructed (constructivism). In other words, not everything that exists in people's minds is 'constructed', and perception is the creation of knowledge through action and experience (Ingold 2000). This means that the direct perception of the environment has a crucial meaning for the understanding and studying of environmental concern and this is not fully understood in the previous studies. Secondly, I argue that not all concerns are individual, and thus, environmental concern could rather be understood as a concept of collective or interpersonal level which is shaped by cultural models and other structural features of a given society (Eder 1996). Environmental concern in its wider meaning *as the totality of knowledge, attitudes and behavioural intentions or action* is a very complex concept and chapter 3 is devoted to opening and justifying my approach.

Although I emphasise context-sensitivity in studying environmental concern, I shall ask a wider question: is environmental discourse as a moral project and 'a counter-movement' weak in Russia and are environmental issues political in Russia? Is there any 'cultural critique' of dominant values in environmental debates or discourses in the Komi Republic? In this way, my study of Komi is relevant to the wider context of Russia. This study focuses more on environmental concern in lived-in environments and social institutions than among individuals or in an individual's head (as in the individualist tradition of an attitudinal research postulate), and although it looks at the contexts of people's everyday lives the research is based mainly on face to face interviews of individuals. If we are to understand institutionalisation of environmental issues it is not sufficient to focus on 'individual minds' (attitude theories and methodological individualism) but rather look at *practises* and *discourses* (as shared meanings) about the environment and different *modes* and *cultures* of environmentalism.

My point is that "the environment" and environmental matters are always part of other social practices, ways of thinking, interests and values, and are not simply accounts of "the environment" as a unified or global entity (Birmingham and O'Brien 1994). Debates on pollution or environmental degradation are always also debates about preferred social orders (Hajer 1995), and in this way environmental sociology examines the central questions of social organisation, social identity, and political economy.

In the time of globalisation and global environmental change, we should not forget that a human being is living in his/her environment – "that which surrounds" (Ingold 2000), not in the global Environment. In the Western 'world' environmental discourse is characterized by a high degree of globalisation, and thus, environmental problems are represented as global in their extent and consequences. However, a life-world of an individual cannot easily reach global levels when he or she discusses experiences or perceptions of environmental change. Accordingly, there seem to be at least two 'environments'. The first is the life-world of an individual (environment with a lower-case 'e') or a lived-in

environment, where environmental changes are perceived in a framework of everyday action, and through direct experience of other people and the non-human world. The second is the Environment as a globe ('The Environment' with an upper-case 'E') framed by global environmentalism and discourses.

This conceptual divide is crucial to notice for the study of environmental concern since it has ontological (e.g., separations of nature and society or culture and nature), epistemological and methodological (whose and which/what environment we are studying and in which methods) and policy (what kind of and whose knowledge is relevant within the realm of environmental policy) dimensions. Referring to Haila (2001), it is important to acknowledge that one of the main problems of environmental research and thinking is how to reconcile two environments: individuals' and groups' specific lived-in environments and humankind's common, scientifically assessed Environment. This issue is discussed in the Chapter 3.1

Accordingly, in spite of globalisation, we are living in a certain local context our lives and thinking are rounded and structured within different contextual levels from everyday life and milieu-specific life-worlds of professional work to the structural and cultural setting of a given society (e.g., degree of industrialisation, political order and cultural traditions). Indeed, it seems that the relationship between different contexts, life-worlds and environmental concern is far more complicated than usually portrayed. The outlook of global surveys often neglects the importance of cultural contexts, and global discourses tend to emphasise that we now have a 'common environment' as a unified or global entity. In this book I put the environment in the contexts and take a close look at how the environment and the Environment 'resonate' in the Northeastern Russia, the Komi Republic.

As a broad analytical frame for studying environmental concern I make use of Karl-Werner Brand's (1997) context model in which environmental concern in everyday life is interpreted with five, filtered levels. This model allows for societal characteristics, cultural and social contexts as well as local engagements, individual characteristics and preferences. And within the framework the model can take advantage of several theoretical angles.

The first level of Brand's formulated model consists of (1) the structural and cultural features of the society under investigation. These macrostructural factors influence the ways of living. The other level is (2) the public environmental discourse, in which environmental problems are constructed and collective actors have their struggles over how to define environmental problems. The third level is (3) the milieu-specific life world, which supplies various "answers" to environmental problems, to questions about health and illness, about nature, social values etc. On the fourth level we find (4) individual mentalities concerning the environment. These mentalities are connected with the prevailing interpretations of reality in different life circles and also to routinized patterns of action. Finally, everyday life is connected with several kinds of (5) situations where people have various roles which create different expectations, rationalities, wishes and arguments. In this final, fifth level, the various forms of environmental behaviour are constituted. (Brand 1997, 212–213.) This kind of perspective equally represents the socio-ecological settings and contexts (system elements) that provide the environment of people's lives (or life-worlds). These are at the same time partly autonomous from each other and, on the other hand, inseparable and mutually intertwined.

My research here focuses especially on the third level (the results section, chapter 4.) milieu-specific life world since my approach and research materials support this level of analysis, but I will discuss all these levels in order to follow my research objectives and answer my research questions.

1.2 The objectives of the study

In brief, the objectives of the study are:

1. to clarify the relationship between the concepts of the perception, environmental knowledge, and environmental concern
2. to study environmental concern from the contextual perspective in the Komi Republic

These research objectives can be summarized in the following three questions:

1. What is the role of environmental perception and local knowledge in the formation of environmental concern?
2. How do the citizens of the Komi Republic perceive and frame environmental changes and issues in their dwelling context, and in the larger framework of socio-economic transformations in Russia?
3. Is environmental discourse as a moral project weak in the Komi Republic?

1.3 The outline of the articles

The first two articles can be viewed as introductory papers for the latter two ones. Their scope is more general, and by reading them, one may get an impression of the research area and people living there. However, these two articles have their own specific value as a part of this thesis. The first article reveals the concepts of nature among town dwellers and the relationship between local environments and local citizens in a more detailed fashion than the other articles, and the second one discusses environmental politics and policy in the Komi Republic as a region of Russia. The latter articles have more specialised scopes. The third article aims at clarifying the concept ‘local environmental knowledge’ and the fourth article examines perception and concern about climate change among the citizens of the Komi Republic and compares this to international data. The fifth article is a joint article with the researcher participating in the TUNDRA project comparing local inhabitants’ perceptions of environmental problems with chemical and remote sensing signatures of environmental pollution and their local impacts.

The first article, written with Timo Järviöskö, entitled *Natur och miljöproblem i stadbornas liv i Rysslands tundra – En fallstudie från Komi republiken* (Nature and environmental problems among the city dwellers in Russian tundra – A case study from the Republic of Komi), presents how local citizens of tundra towns perceive their living environments and more broadly frame ‘northern nature’. It is based on the fieldwork and interviews among citizens of Vorkuta and Usinsk. This paper gives an impression of town dwellers’ life-worlds and everyday life and thinking about nature, the Russian north and

environmental changes as well as the transformational societal conditions of the resource towns in the Russian Arctic.

The second article, *Institutional framing of environmental issues in the Komi Republic*, explores the framing of environmental issues among the institutional actors of environmental policy in the Komi Republic (Russia). It takes advantage of institutional analysis combined with a framing perspective. The analysis based on in-depth interviews deals with the discursive framing of actors participating in the environmental policy field: the different sectors of state administration, enterprise managers, scientists and NGO actors. The paper investigates the institutional dimensions and rules that define the relevant actors and their action space in the field of environmental policy in the Komi Republic. This article also evaluates how environmental issues and concern are institutionalised in social practises and in unwritten social norms.

In the third article, written with Joachim Otto Habeck, we discuss the interrelations of environmental perception and environmental knowledge. The initial point of our argument is the distinction between environmental perception and environmental knowledge. Environmental perception refers to the environment as “that which surrounds”; in this sense, environmental changes are perceived in a framework of everyday action, and through direct experience of other people and the non-human world. In contrast, environmental knowledge is part of the environmental concern or environmentalism, and stems mainly from media, science, education and other forms of communication. The interplay of these two levels gives rise to what we call *local environmental knowledge*, a kind of knowledge which has its own moral and symbolic dimension within the social, cultural and political setting.

In the fourth article (written with Timo Järvikoski and Pentti Luoma) the perception, knowledge, and views about the risks of climate changes in the everyday contexts of local inhabitants living in the different parts of the Komi Republic are examined. This article presents results of two studies, one qualitative interview study and the other a quantitative survey. Through comparing findings in the Komi Republic with the results of global surveys and qualitative studies in different countries it is suggested that the perception and knowledge of climate change should be studied within a certain local context in order to give climate change a meaningful frame of reference within the complexity of daily existence.

The last article is the result of interdisciplinary research conducted in the TUNDRA project. This study aims to compare different social perceptions of environmental degradation with the measured levels of pollution as revealed by different scientific disciplines within the TUNDRA project. Here, natural and social scientists examined environmental changes and potential threats through field measurements and interviews with local inhabitants. The main outcome of this interdisciplinary paper and research is a discrepancy between the records of local dwellers perceptions and the scientifically measured signals of environmental pollution, and this is discussed within the article.

2 Research process

2.1 TUNDRA project

This thesis consists of five articles and a summary section, in which I try to clarify and summarise the results of the articles. My PhD dissertation is based on work done in the TUNDRA (“Tundra Degradation in the Russian Arctic”) project, which was an interdisciplinary global change research project supported by the EC Environment and Climate Research Programme (contract nr. ENV4-CT97-0522, climate and natural hazards). The project lasted over four years (1998-2001) and it aimed to study climate change, industrial pollution and social perception of environmental degradation. The research area encompassed the catchment area of the river Usa, a tributary of the Pechora, in the northeast of the European part of Russia.

The Usa Basin comprises parts of the Komi Republic and the Nenets Autonomous District, which is sparsely populated despite the existence of a few industrial towns. As in many other parts of the Russian subarctic and Arctic, the region is characterized by a long history of renewable resource use such as reindeer herding, fishing and hunting, and a comparatively short history of non-renewable resource use such as coal mining and oil and gas extraction. While many parts of the Russian Arctic can be considered ecologically intact, some of its areas are heavily polluted and have been classified as ‘industrial deserts’, e.g., the areas around the metallurgical plants of Norilsk in the western Siberia and Monchegorsk on the Kola Peninsula. By comparison, northeast European Russia is in better condition, although some locations also bear the signs of severe environmental degradation. The exploitation of the coal fields started in the late 1930s; it gradually intensified until its decline in the early 1990s, owing to rapidly increasing transportation costs and comparatively poor combustion qualities of the coal. The city of Vorkuta, with a population of 168 900, is the center of the coal-mining industry in the region with six mines (population data for 2001). However, the area also boasts a booming oil and gas industry north of Usinsk (population 59 700) in the Bolshemelskaya tundra, with Usinsk (founded in 1970) as the industrial center. In recent years, Russia has seen considerable economic growth, owing to its role as a source of global oil and gas, and the expansion of this industry brings increased risks of pollution.

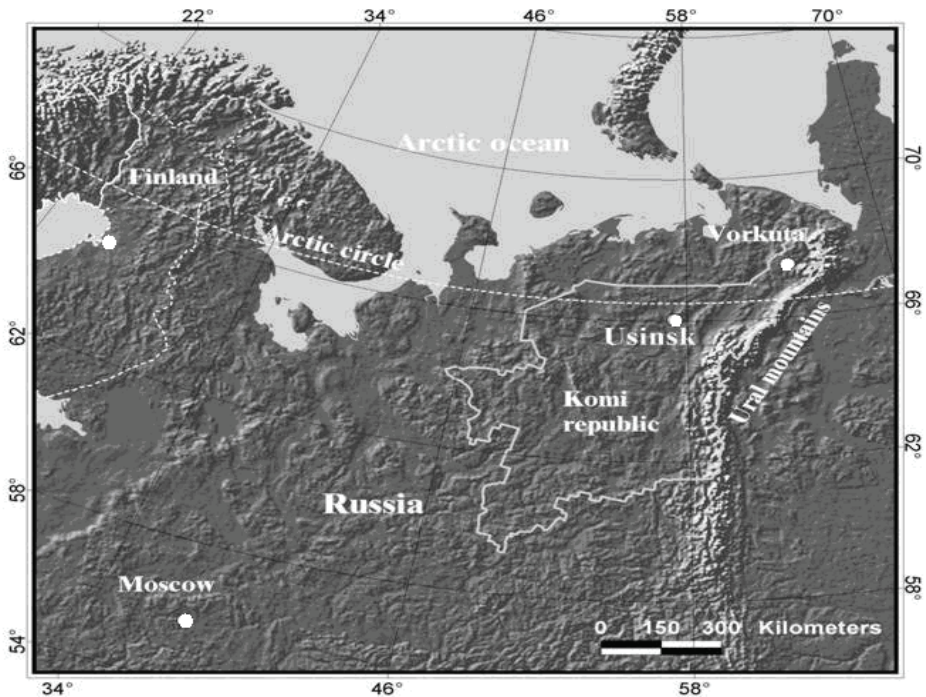


Fig. 1. The research sites: The Komi Republic as part of Russia and two towns of thematic interviewing in 1998 (Vorkuta & Usinsk).

The aim of the TUNDRA project was to improve understanding of the key role that the Arctic will play in the future global climate change. The idea was to assess the Arctic's role from a holistic standpoint, through an integrated analysis of environmental change at a catchment level, taking into account climatic and socio-economic factors. The Usa Basin with its extensive area of lowland tundra and permafrost was the most ideal site to assess possible feedback from Arctic land-based ecosystems to global change within continental Europe. The research was divided in three components: 1) climate change and the carbon cycle, 2) climate change and the hydrological cycle, and 3) industrial pollution and social awareness.

The main social-science contribution to the project dealt with people's perceptions, observations about, and concerns towards, environmental change and degradation, and their actions that might either induce or mitigate such changes. The major social scientific aim in the TUNDRA project was to compare and contrast the forms of environmental awareness (or concern) among the indigenous people (participant observation and interviews by the anthropologists of the University of Aberdeen, UK) of the Usa Basin (Komi and Nenets) with those of the "newcomer" (interviews by the sociologists of the University of Oulu, Finland) population (Russians, Ukrainians, Tatars and others). In the sociological part of the study we first investigated environmental concern among the town dwellers of Usinsk and Vorkuta. Because environmental changes and issues are closely connected with other socio-economic issues we examined rather extensively people's living conditions and their ways of thinking. In addition, we tried to find out how regional

environmental policy in the Komi Republic originates and what the institutional dimensions and rules are that define the relevant actors and their action space in the field of environmental policy. At the end of the project, we enlarged our geographical scope and conducted a survey study in other parts of the republic.

2.2 Research materials and methods

The collection of research material can be divided into three parts. The first part, the collection of thematic interview data (arrangements, interviewing and transliteration of interviews) and other material in the towns of Usinsk and Vorkuta lasted from the beginning of 1998 to February 1999. The second part, the collection of material (documents, interviews, statistics) for the environmental policy part started at the beginning of 1999 and lasted to the end of the year. The preparation of the third part, the survey study, started in the summer 2000 and the collection of this data ended at the beginning of 2002.

The research materials were gathered in close cooperation with Komi Science Centre. Aleksander Maksimov, a research fellow working at the Institute of Social, Economic and Power Problems of the North, organised all the invitations and the permissions, picked the support interviewer, Mihail Kolegov, a student from the Syktyvkar State University. Together with Maksimov, we modified and translated the interview questions from English into Russian, tested the thematic interview (in the summer 1998) and survey interview (in the summer 2001) forms in Syktyvkar and in its surrounding regions.

In the first part of the study, environmental awareness/concern was examined in three occupational groups: managers/administrators, teachers and industrial workers. The focus on occupational groups was based on findings of some studies in Western Europe indicating that there are differences between occupational groups on environmental concern (Sairinen 1996, Järvikoski & Kemppainen 1991). While in some German studies (Brand 1997) no relevant differences have been found, we reasoned that Russia might be in a case of its own (e.g., Pickvance 1998, Yanitsky 1997). The target groups of this investigation were chosen because of certain strategic positions. Corporate and public administration representatives have an important position – especially in Russia (Pickvance 1998, Yanitsky 1999) – in many solutions pertaining to the environment; teachers are largely responsible for environmental education; and industrial workers, as the largest group, have much to say about many questions – as the part Vorkuta's miners have played in the democratic movement has shown (Burawoy & Krotov 1994, Clarke *et al.* 1993).

The research material of the first part of the study was gathered in each town from August to October 1998 by interviewing (face-to-face thematic interviews, which also included a one-page structured questionnaire). This intensive fieldwork was carried out by myself, Maksimov and Kolegov. The base group of interviewees in Vorkuta (n=88) and Usinsk (89) totalled 177, of which 64% were laborers (n=114), administration staff (n=33, both in enterprises and state administrations) 19% and teachers 17% (n=30). In addition, we interviewed so-called 'key persons', who were responsible for the cities'

environmental research and education, as well as a few reporters and healthcare workers. Men comprised 69 % of those interviewed, and 31 % were women.

Non-random sampling methods were employed, and the interviewees were selected using judgment sampling since the research object was limited to a certain group of people and the studied phenomena were relatively limited. In the field, sampling was followed by taking into consideration each town's major industrial sectors and the number of workers in these sectors. In Vorkuta most of the selected workers were employed in coal mines or in the supporting sectors of coal mining, and in Usinsk the largest proportion of our interviewees were working in the oil drilling and refining industry.

In qualitative social-scientific research such a large volume of interviews is unusual. In general, representativeness in qualitative research is not an issue of quantity, but in our case working in the foreign context, we wanted to assure that nothing of importance has been left out. We were careful during the fieldwork periods to ensure that the so-called "saturation point" had been reached; in other words, that there were no more new variations found from the discussions with interviewees relating to environmental issues. On the other hand, semi-structured questions made it possible to create some generalisations within the selected occupational groups. We also wanted to quantify some parts of our qualitative interview data.

Our open-ended questions (see the list of themes in appendix 1) dealt with the course of life, work, hobbies and meanings concerning the surrounding environment; evaluation of perceived socio-economic problems and changes in the state of environment; and, lastly, knowledge about and concern towards environmental issues, and possible solutions for environmental problems. The length of the interviews ranged from 25 to 105 minutes. The three interviewers (Maksimov and Kolegov and myself) divided into two working cells: I participated in the interviewing in turn with Maksimov or Kolegov. In that way, we had a native Russian speaker in one cell continuously with me and, on the other hand, I was able to ensure that our research questions were asked in the same way by different interviewers.

The transcriptions of recordings were made during and immediately after the fieldwork period by the interviewers. In the joint article (article III) Joachim Otto Habeck's anthropological fieldwork material from six villages and reindeer herders' camps in the northern areas of Komi Republic is used in the analysis.

When preparing the fieldwork in the capital of the republic, Syktykvar, our Russian colleagues pointed out that it would be hard to discuss environmental issues with city dwellers because of the severe socio-economical situation in the northern part of Komi. And using a tape recorder would be difficult because of the Soviet history of spying on its citizens. However, most of the people in Usinsk and Vorkuta were quite receptive and willingly agreed to be interviewed. In Usinsk we cooperated with Lera S. Sobolevskaya, a sociologist working in administration of Usinsk, and she was extremely effective in organizing interviews at workplaces in oil companies and factories. Her relations and contacts helped to organize an interview, especially in getting permission for the use of a tape recorder. The notions of Russian colleagues could be explained through the history of sociology in Russia: in the Soviet time the task of sociology was not study people's standpoints but rather to do statistical analysis whose objectives were set up by the Communist party organs (Kivinen 2002, Hanhinen 2001, 83). Besides, ideas of qualitative social research were at that time (1998) just becoming familiar in the northern

parts of Russia (see Burawoy & Krotov 1994). In addition, a couple of interviewees mentioned after the interview that it was important for them that somebody was interested their views in the midst of Russian transformations, which many of them called 'bardak' (chaos). This could in part explain the quite easy acceptance.

In Vorkuta we had more difficulties in interviewing, although overall the reception was good. Partly this took place because we worked without a good local coordinator. It was sometimes difficult to convince the miners that it is very important to hear their own opinions about environmental issues. They were exasperated with the moneyless situation and not so enthusiastic about being interviewed. On 14th September 1998 we attempted to go to Vorgashor (the biggest mine of the town) but we found ourselves in the middle of a demonstration organized by miners and miners' wives. A barricade was built to block the road and demonstrators demanded their salaries which had not been paid for about 11 months.

The essential part of the research process and analysis was direct observation in different situations, as the first paragraph of the introduction indicates. As an 'outsider' in Russia I was able to see social phenomena which were taken for granted in the current local context, but which from my Finnish or Western perspective seemed peculiar. It could be asked if I really understood these 'anomalies' from the outsider's perspective when I had not the insider's understanding of the cultural and collective meanings of these phenomena. I would argue that by taking a certain approach and methods (interviewing and observation) and with the help of Russian colleagues I was able to interpret particular phenomena and collective meanings which were important for my research.

Although we concentrated in our interview study on the region of Northern Komi (Ura Basin) written into the research plan, we were convinced that it would be necessary to obtain some complementary research material from other regions also. Therefore, a survey study was conducted in three towns and several rural settlements (in the central, western and eastern parts of the republic), together for 520 respondents, in 2001. This was needed basically for comparisons with our material gathered in Usinsk and Vorkuta, in order to find out what environmental issues and problems can be considered specific to these northern towns and areas. This survey also provided an opportunity to obtain a wider picture of environmental concern in the republic. The questionnaire was formulated mainly on the basis of themes, which arose in thematic interviews in Northern Komi, but we focused particularly on climate change questions used in global environmental surveys in order to make comparisons (see article IV).

The questions in our survey are, to some extent, the same as in Dunlap's (1998; data from the world wide Health of the Planet survey) comparative study dealing with the concern and understanding of climate change. This enabled some comparisons of the Komi data with the international data presented by Dunlap. However, our study is not based on a random sample like Dunlap's (1998, p. 476), and some key occupational groups (like the managers and teachers) are over-represented in our data. This is because the original aim was to compare environmental concern of these groups.

In the environmental policy part of the research, institutional dimensions and implementation issues were studied by analysing documentary materials of the environmental policy field and in-depth thematic interviews of state administrators, scientists and NGO actors, which were conducted in the capital of the Republic, Syktyvkar, in October and

November 1999. The interviews dealt with how environmental problems and sustainable development are defined in the Komi Republic, the system of environmental governance and how various actors are involved in this and the priorities in the field of environmental policy. The managers and officials of enterprises (in oil and coal-mining companies) were interviewed in the towns of Usinsk and Vorkuta in the autumn of 1998. In addition, official documents (mainly administrative reports regarding natural resource and environmental policy) were examined. (see article II.)

In order to analyse all the research material, I intended to use a pure ‘grounded theory’ approach based on the constant comparison of emergent themes and an exploration of deviant cases (Glaser & Strauss 1967). However, in this study I did not follow systematically open-minded principles of a ‘clean-slate’ in the analysis of data. This was logical since we used pre-existing theorising in our research framework and semi-structured questions in our interview procedure. Under the circumstances, I have drawn my methodological rules from Derek Layder’s (1998) ideas of *adaptive theory*. By using adaptive theory the researcher can use pre-existing theory and theory generated from data analysis in the formulation and actual conduct of empirical research. This approach can be used to generate new theory as well as to develop existing theory in conjunction with empirical research. This kind of research strategy was well suited to our case since it suggests (as being ‘adaptive’) some elements of relevant theory exists prior to, and in tandem with, the collection and analysis of research data.

Adaptive theory make good use of different approaches, paradigms and epistemological positions in social research (critical theory, general theory, grounded theory, middle-range theory) but is not reducible to any of these (Layder 1998). However, adaptive theory is ‘middle-range’ concerning its immediate focus which is on “a set of activities (or events) and the social relations and organisation which constitute its immediate environment” (Layder 1998, 148). It focuses the multiplicity of forms or interconnections between life-worlds (or social agency) and social structure (or system elements). Within the approach “the researcher is encouraged to examine the nature and interconnections between life-world and system elements – rather than to hold them apart methodologically – while involved in particular research projects” (Layder 1998, 143). This idea is important in this thesis which examines environmental concern within the milieu-specific life-worlds in the towns and regions of the Komi Republic but also contextualises environmental concern and life-worlds by taking account of systemic features of structural and cultural settings.

In management, coding and analysis were facilitated qualitative data analysis software (QSR NUD*IST 4.0 and QSR NVivo) and in the quantitative part statistical analysis software SPSS. The interviews of town dwellers of Usinsk and Vorkuta were analysed with the help of QSR NUD*IST 4.0 (later N6) and the subsequent materials (interviews, documents etc.) with the assistance of QSR NVivo.

Analysis has been ongoing from the start of the project. Every recorded interview was transcribed as soon as possible after the interviewing, and coding of the interview data with software started immediately. Starting with the interviews done in Usinsk and Vorkuta, the first task was to get to know, read through and group the extensive interview material under the major themes (nature and living environments, threats and problems, and solving environmental problems). At the same time *descriptive coding* (gender, age and so on) was performed. The next step was to ‘open’ the data with *topic coding*. This

stage is crucial for tapping emerging 'topics', themes and ideas from the data and linking them. This is used to identify all material on a topic for later retrieval and description, categorization, and it can be fairly descriptive. It is the first step to more interpretive and analytic coding. When topic coding becomes more analytic, it can be called *analytic coding* which helps to develop themes or categories or concepts. At this stage the data is analysed in order to find new ideas developing in the new codes. (Morse & Richards 2002).

3 Approach

3.1 The Environment and the environment

It has been claimed that the contemporary debate about the environment is being framed through an astronaut's perspective (Ingold 2000, Haila 1999). Nowadays it is common to talk about 'the planet', 'the Earth', 'the globe' and 'the global environment' and a lot of news and debates which can be labelled under the umbrella concept of 'global environmental change' (GEC) can be found in the media. At the beginning of the 1990's it was defined from the natural scientific point of view by the US National Research council: "alterations in natural (e.g., physical or biological) systems whose impacts are not and cannot be localised" (Stern *et al.* 1992, 25). Today, new editors of Global Environmental Change give a more sophisticated definition which a social scientist can agree with: "global environmental change is best understood as processes that are manifest in localities, but with causes and consequences at multiple spatial, temporal and socio-political scales" (Adger *et al.* 2005, 2). There are several environmental problems that come under the umbrella of GEC, and in the current scientific view the major issues are climate change, depletion of the stratospheric ozone layer, pollution of the troposphere and the loss of biodiversity.

Satellite images of the Earth from the 1960's have played an important role in making us aware of our 'fragile spaceship' floating somewhere in space. Scientists involved in 'planetary sciences' (including e.g., global modelling and satellite observation) have been key actors in representing the planet Earth and its biosphere as an all-embracing ecosystem (Sachs 1999, Haila 1999). In that way, images of the 'shrinking Earth' have opened the floodgates to global environmentalism and the idea that the whole planet needs to be saved.

Accordingly, it has been typical of environmentalism since its rise in the 1960's and 1970's to emphasize the international or global character of environmental problems. Today it is even more so, as global issues such as climate change and biodiversity largely dominate environmental discourses, and the focus of problems has shifted towards the 'global biosphere'. Several important international environmental agreements were established, particularly in the 1990's. In the circumstances, the relationship between

policy and environmental science as well as the nature of environmental concerns on the level of policy-making has changed dramatically in the last two or three decades (see Rayner 2006). Added to this, surveys and opinion polls in Western countries have suggested that public concern has also shifted towards global environmental issues from more local environmental problems (Dunlap 1998).

In this way global environmental change has become a problem area which is largely approached by using a shared, common framework. This globalization of the environment can be seen as a part of the process of globalization, which refers according to Robertson (1992: 8) “both to the compression of the world and the intensification of consciousness of the world as a whole”. In Arthur Mol’s view, “since it is the Western industrialized societies that are leading the way in creating, designing and governing global environmental institutions and in determining environmental-induced transformations in all kinds of social practices and institutions, this institutionalisation of the environment is causing increasing homogenisation rather than increasing heterogenization” (Mol 2001, 222–223). As Brundtland’s committee’s report put it in the lines of sustainable development, we are supposed to have ‘the common future’ (of ‘our’ world), and if accepting the Western environmentalist discourse, we are sharing the global environment (Yearley 1996).

While it is obvious that the world is becoming compressed in cultural and economic terms, this is not to say that people’s experiences are inevitable becoming more similar. As Hajer and Fischer state, “*global turn in environmental politics is in fact a reduction of the complexity of the problem. This new awareness...has led to a reappraisal of the many local particularities. Global environmental discourse has suggested much more unity and shared understanding than legitimately assumed.*” (Hajer & Fischer 1999, 9)

The results from different parts of the world indicate that concern over environmental issues is far more complicated than generally profiled. While global environmentalism is mainly a product of the Western countries, there seems to be an evolution of different worlds of environmentalism which develop in specific socio-cultural and ecological conditions. Furthermore, global discourses of the environment take shape in each country and in different locations in connection with local and socio-political contexts (Eder 1996, Burningham & O’Brien 1994). One would say that what is actually going on is ‘glocalization’ of the environment which means rather heterogeneity than homogeneity. (see article IV). Therefore, the dichotomy between global and local understandings of environmental change has been challenged.

The crucial question for the study of environmental perception and concern which arises with the notions of global environmentalism is : when the environment is applied in the global sense, is it something too big, detached from the domain of lived experience? As Tim Ingold (2000) remarks, seeing or viewing the Earth as one whole from afar suggests alienation from the Earth. And, indeed, could we talk about a globe or global environment as *our environment* if taking the environment literally as something “that which surrounds, and can exist, therefore only in relation to what is surrounded” (Ingold 2000, 209)? If there is just one big environment, each citizen’s environmental awareness or concern is supposed to extend everywhere, “from the street corner to the stratosphere” (Cooper 1992, 167). If so, we would say, following Ingold, “the global environment is not a life-world, it is a world apart from life” (2000, 210).

Consequently, there seem to be two ‘environments’: a *life-world* of the individual (environment with lower-case ‘e’), where environmental changes are perceived in a framework of everyday life, and through direct experience of other people and the non-human world, and secondly, global environmentalism’s the Environment, which is nowadays in the Western discourses viewed as a globe (‘The Environment’ with an upper-case ‘E’). (see figure 2) We must admit that these two are not separated from each other, on the contrary, in a local context, these two interrelate and intermingle (see article III). This kind of separation or division is analytic, but it has both methodological and also policy outcomes.

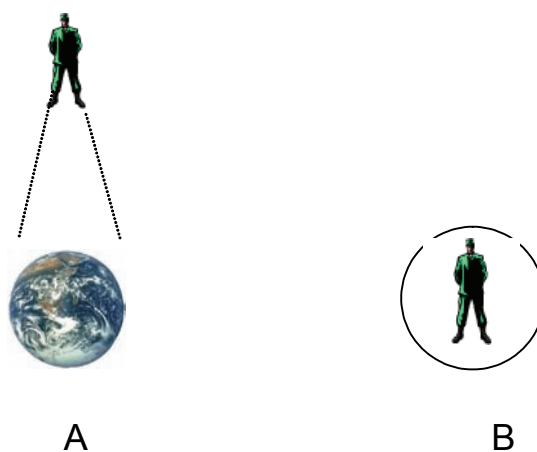


Fig. 2. Two views of the environment: (A) as a globe; (B) as a life-world (Ingold 2000, 209).

If the Environment is regarded as a whole peoples’ and communities’ experiences (and their knowledge) are readily ignored. This is a danger, especially in the global change research in which global environmental problems are defined by natural scientific terms. However, one might ask if it is possible at all to compare and evaluate lived-in environments and people’s environmental concerns when taking the life-world view, the lower case ‘e’ environment, perspective? Do these environments differ so much that commensurate criteria for comparisons are impossible? What are the criteria for negative environmental change and environmental concern?

I would argue following Yrjö Haila’s (2001) reasoning that although we have several ‘environments’ and the environment is not the same in different times and different places, we should have common assessments tools for our evaluations. Several factors integrate the diversity of lived-in environments, and some physical environmental changes affect in the same way large areas and groups of people in that region. However, certain societal processes change some people’s environments towards an undesirable direction but some people benefit from these changes. Life-worlds should be explained mainly in terms of an actor’s meanings, but when looking at the contexts in which these life-worlds are embedded, we need a more systemic viewpoint in order to understand how social activity is conditioned and shaped in this particular case by systemic phenomena

(i.e. ideology and power) and, simultaneously, how activity itself serves to reproduce, sustain or transform these social-systemic features and social arrangements.

I suggest that when most researchers focus on the Environment (as scientifically given pollution problems etc.) in their attitude studies of environmental concerns (especially in the global comparative surveys), the people under study frame environmental issues from their contextual life-world perspective which are bound up with other social and personal issues. Therefore, pollution or climate change are not considered by people as ‘facts’ about pollutants or climate records but rather as experiences in practices of everyday life in particular environments (Bickerstaff & Walker 2001, see also articles IV and V). This is one reason why there exist different kinds of ‘gaps’, such as a gap between knowledge on a particular issue and intended or actual personal behaviour considered to mitigate harmful impacts (see e.g., Brand 1997).

From my critical vantage point I am not trying to deny the existence of these new environmental problems which tend to be more international, or global, in scope, and which have become societal problems through complex social processes. They also reflect the growing interconnectedness of the world’s economic activity and difficulties in keeping that activity under any kind of meaningful social control at a national, or sub-national, level. And in addition, I argue that contemporary environmentalism in every part of the world needs the notion or category of the Environment since it was the foundation of the environmental awakening in the 1960’s and 1970’s (Jamison 2001). It was actually ‘human environments’ in the 60’s which were seen to be in danger when protecting the environment became a matter of public concern and in phase with the emerging counter-cultural critique of ‘technocratic society’. As McCormick points out,

“if nature protection had been a moral crusade centred on the non-human environment, and conservation a utilitarian movement based on rational management of natural resources, New Environmentalism addressed the entire human environment. For protectionists, the issue was wildlife and habitats; for conservationist, the issue was natural resources; for the New Environmentalists, human survival itself was at stake” (1995, 56.)

In the process of changing the concept ‘nature’ to the ‘environment’ – from nature conservation towards environmental protection – depicting the outer world of humans was the notion that human activities are affecting ecosystems all over the world through air pollution (long-range transboundary pollution), for example. We may say, following Jamison, that this “has helped make us aware of the disappearance of a separate realm of non-human nature” (2001, 21). However, I would argue that in recent years we have lost ‘human environments’ because the big Environment focus on global environment where lived-in-environments have a minor role when environmental problems are mainly scientifically defined.

This led us to define these two environments by the object of concern and at the same time the substantive topics of the research: in the first case, the environment, concern founded in the research is often about *environmental quality* and *risks* (people’s health and well-being living in the particular contexts and places), and in the latter form, the Environment, concern for *environmental problematique* as a scientific, a moral or a political issue (global problems, the critique of consumer society etc.). As discussed above, within contemporary environmentalism the entire globe is seen as under threat and “through this oneness with nature which is viewed as a moral source” (Macnaghten &

Urry 1998, 23). This division is close to Pakulski's and Crook's classification of Australian environmentalism as 'brown' and 'green'. Brown environmentalism focuses on the issues of pollution, soil erosion and waste disposal which have been the Australian public's concerns about 'ecological risks' – the health and well-being implications of environmental degradation. By contrast, green environmentalism, activists of environmental groups, has been much more concerned about conservation issues (logging native forests) and overall the despoiling 'human impact on nature' (Pakulski & Tranter 2004). This division has been seen also in terms of local ('brown') and global ('green') concerns (McAllister & Studlar 1999).

This kind of classification is justified or distinguishing between approaches or strategies of the research: one is to investigate "top-down" people's knowledge or attitudes about environmental problems (defined by global environmental discourses) via surveys, whereas the other strategy is to take the local context and an individual's life-world within it as a reference point of changes. And this fact should be noticed in the study of environmental concern because the research is often implicitly bound to a moral stance towards environmentalism (see figure 2.).

I would argue that most of people's concerns over some issue(s) either start within a life-world, in the environment which surrounds (e.g., experience of air pollution as a bad smell) or they are selectively restated and interpreted within a life-world (e.g., global warming or climate change in the Arctic communities or in urban agglomerations).

3.2 The life-world

I shall next clarify the major concepts. My approach takes advantage of Tim Ingold's (2000) *dwelling perspective* and in the formulation of the concept life-world I combine it with the phenomenological approach of a people-environment relationship presented by Carl Graumann (2002). In his approach Ingold merges ecological psychology (Gibson: perception) with Heidegger's and Merleau-Ponty's phenomenology (life-world, embodied experience) and also Bourdieu's ideas (theory of praxis, habitus). The central concepts here are: *life-world and the perception of the environment*. The latter one I call hereafter also *environmental perception*.

First, by taking the phenomenological attitude we should "focus away from the individual per se and his or her inner (mental or conscious) life toward the *situated person*, that is, the embodied individual in her or his lived context of a spatial, social-communicative, and temporal-historical environment" (Graumann 2002, 105). The *life-world* is the world as it is lived and experienced in which humans perceive and act and of which they are constitutive parts. In this world "persons are to be understood as intending, that is, sensing or meaning-giving agents and their environment is, in principle, experienced (e.g., perceived, felt, judged, remembered) as meaningful" (Graumann 2002, 98). Therefore, the life-world is studied as it is experienced by its inhabitants or dwellers.

The life-world is a preinterpreted world, and thus, phenomenologically oriented researchers try to get an understanding of the life-world through its inhabitants' views and interpretations. Although these views are 'subjective', "they yield the world as it is experienced *from the perspective of the other one*" Graumann 1994, 285; emphasis

original). I would add that a researcher could classify these ‘subjective’ life-worlds in the particular context if it is needed for the study, for example, in order to assess impacts of environmental changes on projected plans. In this way, we can classify by type different kinds of milieu-specific life-worlds and evaluate projected impacts on specific groups.

Phenomenology emphasises the person’s *bodily* nature since a person’s meaning of environmental objects and events is contingent upon a subject’s bodily condition. Phenomenologists stress that behaviour as intentional activity actually ‘takes place’ which also implies the notion of *making place*. This means creating place for human existence in motion and rest: walking, reaching and grasping etc. Accordingly, favourite topics in the phenomenologically or hermeneutically informed people-environment studies relate place attachment, spatiality, space, home and dwelling. The comprehensive phenomenological term is also *situatedness*. (Graumann 2002.)

3.3 The perception of the environment

The conventional explanation for why we perceive the world differently comes from so-called *perceptual relativism* which says that culture either ‘colours’ (weak) or determines (strong) our perception of ‘nature’ or what is nowadays more often called ‘the environment’ (Ingold 2000, 15). In other words, since our perception of the environment is conditioned by culture, our understanding must be founded in our conceptualisation of the world, and hence, it must relate to cognitions or language (Milton 1996).

Tim Ingold argues against the mainstream of anthropology that “culture is not a framework for *perceiving* the world, but for *interpreting* it to oneself and others” (1992, 53). For Ingold culture consists of means for making knowledge explicit, both to oneself and to others. Ingold clearly resists the cognitivist view that a “person can neither know nor act upon their environments directly, but only indirectly through the medium of cultural representations” (ibid, 40). Ingold says that perception should be viewed as a different kind of phenomenon from interpretation. Humans do not construct reality in order to perceive it, but rather perceive it directly through active engagement or involvement in it. An individual discovers the meanings of his/her environment in action and interaction and through the direct experience of other people and the non-human world. Ingold takes much of his theoretical framework from Gibsonian ecological psychology, which states that

“[I]f perception is a mode of action, then what we perceive must be a direct function of how we act. Depending on the kind of activity in which we are engaged, we will be attuned to picking up particular kinds of information. The knowledge obtained through direct perception is thus practical, it is knowledge about what an environment offers for the pursuance of the action in which the perceiver is currently engaged. In other words, to perceive an object or event is to perceive what it *affords*. (...) [O]ne learns to perceive in the manner appropriate to a culture, not by acquiring programmes or conceptual schemata for organising sensory data into higher-order representations, but by ‘hands-on’ training in everyday tasks whose successful fulfilment requires a practised ability to notice and to respond fluently to salient aspects of the environment. In short, learning is not a transmission of information – but in Gibson’s (1979:254) words – an ‘education of attention’. As such, it is inse-

parable from a person's life in the world, and indeed continues as long as he or she lives.' (Ingold 2000, 166–167, original emphasis)

Perception is the key to local expertise, which is often non-verbal and bounded with context and practice. It refers to the way one obtains knowledge within one's environment. However, I interpret Ingold (2000) to mean that knowledge is already communicated and the crucial part or in many cases the basis of it is 'tacit' knowledge obtained through perception. When the perception (of the environment) is understood as a matter of sensory attunement and a result of action, activity in process, it is not taken as a (picture-like) representation which is recorded somewhere within the neural network. A significant part of people's knowledge of the environment is tacit, in other words, experienced or perceived but not actively interpreted. It is often hard to communicate so-called local knowledge in written and spoken forms, especially if taken outside of the context of action (e.g., how to drive a snowmobile in the middle of a forest). This is the main reason why 'local knowledge' is not easy to pick up from surveys or even in face-to-face interviews. And that is why Ingold's theoretical perspective underpins the contextual approach which tries to situate ecology and culture within a common framework ('monism' versus 'dualism').

Culture is not context for Ingold; rather he utilises the term context closely linked with 'praxis theory' and its negation of the separation of action and meaning (Bourdieu 1990). Therefore, processes such as thinking, perceiving, remembering and learning need to be studied within the ecological contexts of people's interrelations with their environments. Ingold's perspective is clearly a holistic standpoint towards a more emphatic, contextual and praxis-oriented approach which Ingold terms "new ecology" (2000, 173).

In contrast, from the standpoint of the big Environment and the cognitivist perspective all knowledge is constituted and constructed in the interface between world and mind, sensation and cognition. To know the world, then, is a matter of cognitive reconstruction. "And such knowledge is acquired not by engaging directly, in a practical way, with the objects in one's surrounding, but rather by learning to represent them, in the mind, in the form of a map" (Ingold 2000, 213).

In the dwelling perspective the world we inhabit surrounds us; it is a world *within* which we dwell and it can be called *corporeal* since my body – which is the human organism given in the movement – is the *subject* of perception. In the cognitive view of the Environment, planet Earth, *on* which we dwell, confronts us since between the world and us (our minds) is a conceptual (cultural) system. As a point of departure, in the dwelling perspective an individual is the agent-in-an-environment rather than the isolated and self-contained individual, which is the implicit view of methodological individualism.

I argue that Ingold's theorising has major consequences for the study of environmental concern and environmental policies. It is rather common that in the background of many global change research projects and national environmental policies stands a science-centred 'information deficit' model (see e.g., Blake 1999). This model presumes that in order to promote environmentally benign behaviour and action, individuals and local communities have to be given more scientific facts – which is to say that people do not know the 'real' state of the environment and thus 'more and better science' is needed to overcome public ignorance and inertia (Hobson 2003). And environmental policy makers

should have more appropriate methods of social engineering (the domain of social scientists) in order to contribute to a change of attitudes via scientific knowledge (the domain of natural scientists).

If we took Ingold's perspective, within the lines of the 'information deficit' model people are educated, giving them new cognitions which are usually far way from people's perceptions and this new information can not be attached to or engaged with their life-worlds. However justified this model's expectation may be it often remains unfulfilled in practice if scientific information does not validate or engage with people's own experience within their life-worlds (see Bickerstaff & Walker 2001). Although new information interacts with individuals' knowledge it usually does it only *discursively* (e.g., people might remember this new information when asked) and thus, it will not automatically change their behaviour.

To connect Ingold's perspective into my theme, environmental concern, we might say using Giddens'(1984) language that perception is at the level of practical consciousness (tacit knowledge) and knowledge with which individuals think and talk is at the level of discursive consciousness. By adopting this division I emphasise that we should think again about 'nature' (practical) and 'culture' (discursive) separately; this is needed for analytical and empirical purposes. To connect this to life-world and environmental change and issues, we could say that the immediate surroundings of people are part of the life-world that is normally taken for granted but is sometimes a potential source of alarm.

In the Russian sub-Arctic oil town people can be accustomed up to a certain point to oil spills as a normal part of living in the local context (although their private attitudes could be against the means of production), but if a big oil leak happened, it could arouse public anger and make the environment political (the Environment comes in, see III article). This is not to say that environmental activism directly emerges or follows from environmental damage. An extreme occasion along with the attention of the media may provide a key event to which everyone refers and which gives rise to certain issues being taken collectively as 'environmental'. This happened in Komi after the large oil leak in 1994. It changed discourses and 'raised' discursive consciousness, although in practice changes were not so obvious.

3.4 Environmental concern

The terms "environmental awareness", "environmental concern" and environmental consciousness" have been used in environmental sociology and education since the 1970s. In the following, I first survey different conceptual and operational definitions of environmental concern and secondly present and discuss the evident problems in the research about environmental concern, especially a critique towards the standard survey-psychometric approach and so called attitude behaviour -model. Finally I determine my conceptualisation of environmental concern.

I shall shortly explain why I prefer the term environmental concern instead of environmental consciousness or awareness. First, I think that for sociological analysis the term "environmental consciousness" is too psychological (cf. Järvillehto 2000). It refers to an individual's implicit vector of knowing, and it is mostly out of sociological interest.

Instead “awareness” refers to an explicit understanding (...) which makes awareness social, rather than individual, since explicating something, if only to oneself, of necessity involves particular cultural schemes and values” (Hastrup 1995, 183). Thus, in my conceptualisation, environmental awareness refers to explicit knowledge of environmental issues. We can notice that within the lines of this formulation, environmental perception would be close to environmental consciousness which could then be seen as part of environmental awareness. Finally, environmental concern should be understood more as a collective phenomenon than an individual feature. Environmental concern (to be concerned) refers to (the possible) action, and that makes it especially suitable for sociological analysis. For the uses of empirical research environmental concern can be broken down into components of *knowledge*, *attitudes*, *behavioural intentions* and *action*.

In many empirical studies the meaning of environmental concern (consciousness or awareness) has been almost identical to environmental attitudes. However, different disciplines define the concept of *attitude* in various ways. In the social-psychological attitude-theory studies, environmental concern is taken to be equivalent to ‘environmental attitude’, comprising cognitive, affective and conative (and/ or behavioural) dimensions or expressions of environmental concern (Dunlap and Jones 2002). In environmental sociology, environmental concern (awareness and consciousness are also used) has usually been defined widely, as the totality of knowledge, attitudes and action (*e.g.*, Kortelainen & Kotilainen 1994, Rannikko 1996). Rannikko explicitly comments that environmental consciousness should be differentiated from environmental values and attitudes. Values are commonly viewed in sociology as tendencies concerning general, long-lasting objectives, whereas attitudes are often superficial, representing “a tendency to react positively or negatively to certain situations, events, persons or objects”. The rapid change in attitudes does not automatically transform human behaviour. Therefore, in Rannikko’s formulation environmental attitudes are one part of environmental consciousness which is also comprised of knowledge of environmental problems and pro-environmental behaviour (Rannikko 1996, 58–59).

As earlier stated, the environment as a new category or new interpretative framework emerged in Western countries during the 1960’s and 1970’s giving symbolic and political significance, for example, to pollution and natural resource issues. As a part of the counter-cultural critique towards the dominant ‘technocratic society’ and values of consumer culture, “environmentalism emerged as a new political cause, a new historical project” (Jamison 2001, 16). Since then the protection of the environment has been a matter of public concern in Western countries and an expanding public-policy sector.

“Thirty years later, the politics of the environment – both the talk and the action, the rhetoric and the reality, the theory and practise – has changed in fundamental ways. Throughout the world, the general emphasis among politicians and policy-makers – as well as for most of the experts who advice them and the activists who goad them on – has tended to shift from the protection of an external realm of non-human nature to the *greening* of our own human societies. An ecological consciousness, we might say, is in the process of being internalized in our cultures and our personalities. And while we are all invited to take part in the greening of the world, the diverse processes of greening, and of green knowledge-making, are filled with ambiguities.”(Jamison 2001, 17.)

The shift from the counter-cultural critique of environmentalism to the present idea of integrating an environmental concern into all aspect of socio-economic life, often referred as sustainable development, can be seen as radical. On the other hand, 'green talk' has become a part of the mainstream, and as one of the master frames in public discussion it is no longer only circulated among a small number of activists and experts. Thus environmentalism is now a part of "consensus culture", it has lost its power of counter-cultural critique (Eder 1996).

When the master frame of environmentalism is "everywhere" also called 'widespread greening', it seems that the concept of environmental concern or consciousness is so obvious and general in Western discourses that scholars do not see the need to define it. One of the main problems is that the concept of environmental concern is used widely in the emerging environmental agenda among politicians and policy-makers as a linear conception of progress: people become more environmentally concerned or consciousness when they are more affluent and educated. These ideas reflect the still popular thesis of 'post materialist values' (Inglehart 1977, 1985) which seems to be very resistant to time and devastating critiques. The thesis says that environmental concern follows only when more basic goals and needs have been satisfied (such as food, shelter and economic survival). On the other hand, people with a higher lifestyle and quality of life living mainly in wealthy industrialised societies are usually more educated and thus, it is assumed, they have more scientific knowledge which implies that should be more concerned since they know more exactly what environmental problems are.

This has serious implications on how policy-oriented comparative surveys, which nowadays deal mostly with the global environment, are interpreted: people in Western countries (and more specifically younger, liberal, well-educated adults) are more environmental concerned just because they know what is meant by global issues, such as global warming or depletion of the ozone layer. However, it is clearly evident that the influence of environmental knowledge on environmental behaviour is small. Even a high level of environmental knowledge does not necessarily imply environmentally benign behaviour and what people in general think about an environmental issue is not highly correlated to the science surrounding that issue. (Brand 1997, 206, see also Blake 1999).

Russia differs substantially from Western Europe because of its currently low standard of living. On the basis of the post-materialism thesis (Inglehart 1977, 1985) we might expect that Russian people are prone to lean to "materialist" values (economic and social security), and not to "post-materialist" (self-expression and the quality of life and environmental concern were not included in the basic versions of post-materialist index) ones. Empirically the thesis of value change seems to hold, more or less, in modernized Western countries, although it has received much theoretical and also empirical critique (e.g., Lowe and Rüdig 1986). In international comparisons, however, the correlation of postmaterialist (environmental) values and GNP per capita is not at all so strong as the theory would have us to expect (e.g., Brechin & Kempton 1994, Dunlap & Mertig 1995). Brechin & Kempton (1994, p. 247) conclude that "the environmental values cannot simply be a product of postmaterialism", "because the causes of environmental values are far more complex and varied than satisfaction of economic security across generations".

Many studies have confirmed that if a person had positive attitudes (e.g. beliefs or intentions) towards environmental protection expressed discursively this does not mean he or she will change his/her everyday habits or lifestyle to more environmental friendly

ways of doing and living (Brand 1997, Massa & Haverinen 2001). In the time of 'widespread greening' no one actually wants to be ignorant and insensitive about the Environment. It has been observed that surveys overstate respondent concern (Sterngold *et al.* 1994), and environmental issues especially are topics which generate 'socially desirable' responses (Bord *et al.* 1998). Thus, it is not very simple to study environmental concern in its wider meaning, because attitudes and actions seem often to be in some kind of contradiction. For instance, in most studies in the 1980s and 1990s, the Finns had very positive attitudes towards environmental protection, but when speaking about concrete action and personal sacrifices they became rather reserved (Sairinen 1996). This has been depicted as the 'value-action gap' (Blake 1999).

The nature and complexity of the concept is reflected in a baffling variety of operational definitions of environmental concern found in studies. Differentiated uses of different 'objects of concern' and various 'expressions of concern' have resulted in hundreds of studies of environmental concern without explicit framework for comparisons. However, this is not surprising given the fact that the environment connotes different matters to different peoples living in different contexts. Dunlap and Jones (2002) note that there have been two lines in the survey-psychometric oriented (and mostly North American) research of environmental concern: the theoretical approach using the terminology of attitude theory and the policy-oriented approach studying policy-relevant aspects of environmental concern. This includes opinions about the major causes of particular problems and who (individuals, industry or government) should have primary responsibility for solving them.

Environmental concern is multifaceted and multidimensional concept, as Dunlap and Jones (2002) state. In the very first division of this multifaceted concept, there is 'the environment' part, and it can be understood broadly, as the previous chapter shows, as a globe or as a life-world or as the immediate surroundings, or it could be divided by social shared properties such as rural or urban environment, wilderness, etc. Taking the environment as the substantive content of the concept or 'objects of concern' we are dealing with a variety of environmental topics ranging from the particular issue, for example nuclear waste or ozone depletion, to a more broad set of issues like pollution or natural resources. In addition, the universe of environmental-concern research is continuously evolving and expanding in phase with societal recognition of new environmental problems. Secondly, with regards to environmental concern, the researcher explores within the principles of attitude theories different social-psychological expressions of environmental concern: cognitions, attitudes, actions, behaviours. (Dunlap & Jones 2002.)

Cognitive expressions of environmental concern usually have to do with the individual's knowledge and beliefs about the nature of an environmental problem, its causes and possible solutions. For Dunlap and Jones (2002, 490) the cognitive dimension (or facet) is "a multidimensional construct (environmental cognition) that can be inferred from people's expressed knowledge and beliefs about environmental issues". The *affective* dimension includes an emotive and evaluative element, and *affective expressions* are often defined to be synonymous with environmental attitudes. These comprise personal evaluations or feelings about environmental situations or issues from specific problems like recycling to very broad issues, such as climate change and its mitigation (Dunlap & Jones (2002, 490–491).

The conative expression of concern can be labelled as environmental intentions and commitments. These expressions reveal “a readiness to perform, or a commitment to support, a variety of actions that can potentially impact environmental quality” (Dunlap & Jones 2002, 491). These can include personal commitment to protect environmental quality (specific individual actions like using public transport) or stated support of a specific public policy proposal or general public policy proposals (indicators of public commitment). Finally, behavioural expressions of concern can be viewed as either “personal environmental behaviour” which is about an individual’s actual or reported actions of their private life (recycling cans, taking a bus instead of private car etc.) or “public environmental behaviour” or “environmental activism” which focuses on their support for environmental organisations, programs or policies (being an active member of an environmental organisation, writing letters to politicians or public officers) (Dunlap & Jones 2002, 491).

Dunlap and Jones classify studies of environmental concern as broad-coverage studies of environmental concern which focus on all or nearly all four dimensions of environmental concern or narrow-coverage studies which examine only one facet of concern, for example, cognitive expressions of environmental concern. At the end of the article they ask “is it appropriate to consider environmental concern as a single construct, or it is inherently multidimensional?” (Dunlap & Jones 2002, 511). I think this question could be directed only at researchers working with the standard survey-psychometric approaches.

From the more sociological oriented point of view, the concept of environmental concern is clearly multidimensional, which makes talking about the rise and fall of concern problematic. One of the most controversial presumptions of the survey-psychometric approaches is that individuals’ attitudes towards environmental issues remain largely stable and consistent over significant periods of time (Macnaghten & Urry 1998, 87–88). This is to say that these attitudes form consistent, integrated and self-contained wholes which can be called the ‘environmental worldview’ (Dunlap’s and his colleagues’ New Environmental Paradigm). deHaven-Smith (1991, 97) argues that “researchers should abandon survey designs and statistical techniques that presuppose the existence of a generalised concern for the environment” since peoples’ views of environmental issues are so dependent on the particular issue involved and the context in which it evolves (cited in Dunlap & Jones 2002, 512).

However, we cannot ignore the ‘widespread greening’ of Western societies which is manifested through omnipresent ‘green talk’ in the public sphere. This has resulted in some kind of attitudinal sensitivity towards environmental issues which occurs in the discursive level found in survey studies as well as in the more qualitatively-oriented research. Nevertheless, I think we should not assume, as NEP-type measures do, that citizens’ answers to survey questions can be seen as a rationally formed set of beliefs, a kind of factual foundation from which attitudes (and behaviour) can be rationally constructed as a single construct of environmental concern (see Shanahan *et al.* 1999). This is an overly simplistic model of human thinking and acting. These expressed attitudes should be not be seen as (only) personal views but rather as positions whose meaning is realised when located within wider societal debates – which are indeed controversial (see Billig 1995). In this way, environmental concern is not a quality of an individual (having a stable ‘environmental worldview’) but more a public sentiment or a

societal frame between other sentiments or frames within a specific historical and societal context (see Eder *et al.* 1995).

Critics also point out that survey researchers often assume that the objects of concern, 'the environment' and environmental issues (e.g. pollution or forest conservation) are rather static in their nature, even when the dimensions are compared in different ecological, national, cultural and social contexts. For example, the meaning of 'forests' is embedded in the 'socio-ecological' contexts (practical use of different forest types) and political context (who owns the forests) and it differs even within one country, such as Finland, depending upon which social groups are being surveyed (see Rannikko 1996). When all findings obtained through global surveys suggest a movement towards globally growing sensitization to environmental concerns, Karl-Werner Brand (1997, 205) comments that data from these comparative surveys have to be interpreted with caution because "results are highly dependent on the wordings of questions and the cultural context of interviewees". It is then people's cultural context which is the best factor or element which can explain different perceptions of environmental issues (Brand 1997, 205).

The sociological (from the point of the qualitatively-oriented research) criticisms of the survey-psychometric approach can be summed up by citing Magnaghten and Urry (1998, 75):

"we suggest that such polling techniques are not sufficiently powerful to capture the hugely complex and deeply ambivalent ways in which people do in fact engage with what have come to be recognised as environmental issues and behaviours."

I think this is to say that surveys cannot reach people's life-worlds. Magnaghten and Urry list three problems with the standard survey framework if considered as the basis of policy. The first one is the notion that the environment is viewed as the object or experience like any other object. At a time of 'polling culture' people are seen as consumers, and thus, the environment is consumed in a similar manner to sweets. This indicates that "the assessment of policies is subject to short-term criteria and is not directed to their long-term impacts" (Magnaghten & Urry 1998, 77). The second aspect of their criticisms is that survey questions do not capture diverse, multi-faceted and complex forms in which the environment is sensed. Survey questions inherently miss the sheer density of feeling attached to dwelling in particular environments, and therefore, the ambivalence of how people respond towards environmental threats. And finally, the standard survey approach treats the responses of people to environmental issues "in a somewhat linear fashion, as though environmental issues can be set out as 'objects' to which people have particular views and opinions, separate from the social practices in which they are routinely engaged". The human subject is modelled in an overly simple and inappropriate way (Magnaghten & Urry 1998, 78).

Here the authors explicitly criticise so-called methodological individualism which sees people acting as discrete independent beings whose actions are isolated from the turbulent, complex and often contradictory practices and discourses which criss-cross contemporary societies. "Such a methodological individualism abstracts human subjects out of their spatially embedded practices and the complex interconnections between 'human' and 'non-human' actants which happen to combine together to realise diverse ways of being in and of the apparently 'natural' world." (Magnaghten & Urry 1998, 88.)

This is why surveys cannot report peoples' actual environmental behaviour (see also Spaargaren 1997).

Given these facts, one may ask whether the concept of environmental concern is a meaningful construct for empirical research. I would say yes, if we took into consideration the contexts of environmental concern. This is needed because of the non-linear dynamics of environmental issues as well as concerns towards them. Environmental concern should be seen as a *process* within or between other social and cultural processes. It is not a linear and static process which we could gloss as "people are becoming more environmentally concerned" all over the world in the course of time (more knowledge → change in attitudes → altered behaviours). This is actually the simple view of modernisation. On the contrary, we can now clearly find different 'environmentalisms' which are not merely an outcome of post-materialist values of the middle classes of the industrialised north (Milton 1996).

The results of the 24-nation "Health of the Planet Survey" (HOP) revealed that levels of concern for environmental quality were often higher among citizens of the poorer, Southern Hemisphere nations than among citizens of the wealthy, mainly Northern Hemisphere nations (Dunlap & Mertig 1995). These results clearly challenged social science theorizing, particularly theories of post-material values, and also conventional wisdom regarding environmental concern. The findings also suggest that environmental concerns might take very different forms and affect people's life-world and livelihoods more directly in poorer countries. This supports the idea that environmental concerns are mostly framed in a livelihood context and can be considered 'brown' environmentalism rather than green environmentalism. Although the HOP results show a general pattern according to which remote environmental problems are seen as more serious than those close-by (with Russia as an exception), the level of poverty correlates with the perceived severity of local and national environmental problems. However, the HOP results have generated some scepticism and a more conventional approach still claims that environmental concern is a luxury good: the higher per capita GPD, the higher the environmental concern (see Franzen 2003).

Karl-Werner Brand (1997, 208) sums up the empirical findings of the research on environmental concern and states that in Western societies, "there is no longer a distinct sociodemographic group promoting the cause of environmentalism". This is to say that sociostructural features of group classification (e.g. occupation and age) as such do not homogenize and structure environmental concern. However, studies have shown that different societal groups have their own way of interpreting environmental information, frames and symbols via mass media, expert views and controversial political debates. (Brand 1997, 208.) Therefore, scholars have tried to find out answers from lifestyle analysis, and the few existing results between lifestyle and environmental concern "refer to various mixed relationship of ecological orientations with material or post-material values in single lifestyles" which contradicts Inglehart's thesis of value change (Brand 1997, 210). Instead of lifestyles, Brand and his colleagues (Pofern *et al.* 1997, Brand *et al.* 2003) have been interested in environmental mentalities (as socially shared interpretations of realities) which arise out of many factors (e.g. broad patterns of political culture, individual and collective responsibilities) having specific contours in different countries. This kind of study "calls for a more context-related, cultural analysis of environmental consciousness and behaviour" Brand 1997, 211).

It stands to reason that environmental concern may have many different forms, which cannot be ranked without problems. However, we can conclude that environmental concern *is a certain kind of sensitivity in realising problems connected to (the state of) the environment and humans' relationship with their environs*. In other words, it is *sensitivity in defining environmental issues as (societal) problems and reacting to them*. This is close to Dunlap's and Jones's (2002, 485) definition of *environmental concern*, which "refers to the degree to which people are aware of problems regarding the environment and support efforts to solve them and/or indicate a willingness to contribute personally to their solution. I think that for empirical research we also need the components or dimensions mentioned earlier: cognitions, attitudes, behavioural intentions and action; but I add that environmental perception should be also included.

In Western countries, this sensitivity has not only reflected changes in the physical environment, but it has also been connected to broad societal and cultural changes. The rise and role of the middle classes, known as service classes, whose work is not related to basic production (agriculture and industry), in Western environmentalism has been particularly emphasised. Klaus Eder (1996) says that environmentalism is a new field of struggle against the 'self-defeating process of modernisation'.

Nevertheless, I claim that rather than taking environmentalism as some kind of universal ethics (as is implied by cross-national studies), we need to study "an evolution of different worlds of environmentalism", which develops in specific cultural, political and socio-ecological conditions (see Eder 1996, 163). Environmental attitudes cannot be separated from the social practices in which people are engaged. Likewise, environmental attitudes and actions constitute a mutual relation; the actors influence each other's attitudes, although attitudes do not influence actions in a straight or direct way. This support the thesis that "the assumed objects of such attitudes should be viewed as more interactively and contextually shaped than is usually recognised" (Macnaghten & Urry 1998: 94).

This means that the dimensions and forms of environmental concern become extremely important research topics, and it is very interesting, for example, to find out whether the forms of environmental concern are different in social groups in different national and cultural contexts, and if so, how – and why – they do differ (Järvikoski 2001). Evidently there are many factors which influence environmental concern, from social structure and cultural traditions to public debate and everyday practices. It seems, for example, that the interpretation of global environmental problems is done through political, social and cultural contexts (Burningham & O'Brien 1994). By comparing different locations in the same country but also in different countries we should find out what the context-specific features are and what constitutes the features tied to broader patterns of political culture (like individual and collective responsibilities) and environmental discourse in a particular country. However, we need a comparative framework for this kind of analysis. With this in mind I will now present my version from Karl-Werner's model (1997).

3.5 Contextual model of environmental concern

I use here Brand's model as a general framework for analysing environmental concern in the Komi Republic and a tool for summarising the results of the enclosed article. However, I reform and decode this model slightly since I have introduced the perception of the environment and my analysis of environmental focus mainly on a milieu-specific life-world level, and thus I am not studying environmental mentalities.

Within the model the environmental concern in everyday life is interpreted with five, connected filters. As Brand (1997) emphasises, the model should be understood as filter systems that are fused together in practise but for analytical reasons they have to be illustrated separately. This model aims to allow for societal characteristics, cultural and social contexts as well as local engagements, individual characteristics and preferences. And within the framework of that model several theoretical angles can be taken advantage of (see figure 2.).

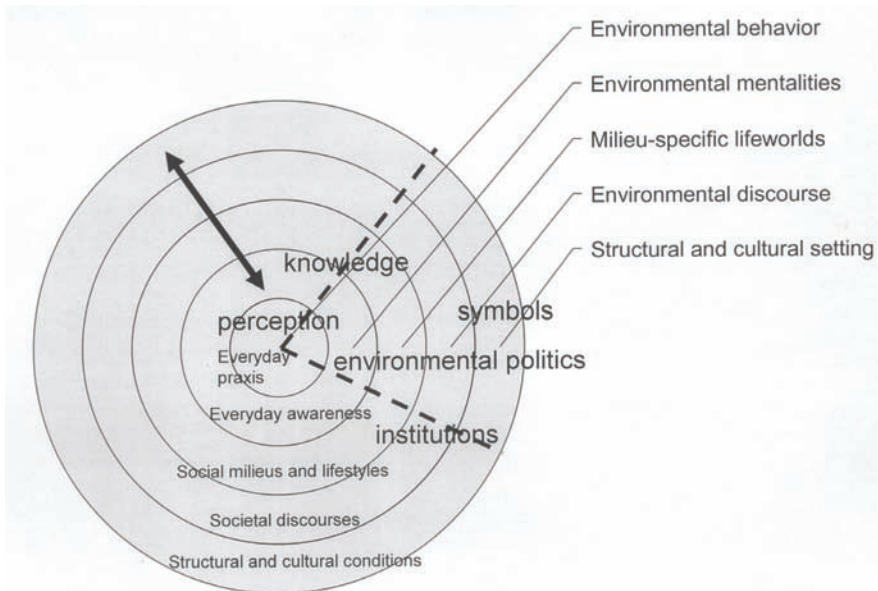


Fig. 3. A contextual model for analysing environmental concern. A modification from Brand *et al's* model (2003, 22).

The first filter or level of the model consists of the (1) *structural and cultural setting* of the society under investigation. This most general context comprises, for example, degree of industrialisation, cultural traditions and political order. These macro-structural features influence the ways of living and this level should be seen as a kind background (rear-view) 'mirror' which has to be taken into account when we are comparing different countries.

The second filter is (2) the public *environmental discourse*, in which environmental problems are constructed and collective actors have their struggles over how to define environmental problems. This level is crucial for studying environmental concern in a comparative framework since it should reveal the country-specific logic of public

environmental discourse which is bound to cultural resonances of environmental problems and the institutional framework for collective actors of the state, economy and civil society. Here it should be noticed that environmental discourse occurs between and within other public debates (see figure 3.). The research in this level informs the study at the group or the individual level, i.e. how public environmental discourses (story-lines) 'resonate' the talk or stories of interviewees. In this way public environmental discourse is an arena for environmental politics over definitions of environmental problems between collective actors as well as between peoples' environments and experts' Environments, knowledge and definitions of which are regarded as significant in the making of environmental policies. In this study, the second article focuses at this level, asking: how are environmental problems defined and framed by the main institutional actors in the Komi Republic?

The third level is (3) the milieu-specific life world, which supplies various "answers" to environmental problems, to questions about health and illness, about nature, social values etc. Public environmental debate is selectively restated here in everyday life contexts (the environment). As I earlier noted my research is the basic research, "ethnography", on environmental concern in the milieu-specific life worlds in the towns and regions of Usinsk and Vorkuta: How do environmental changes, social conditions, positions and practices influence people's perceptions, knowledge, attitudes and action? In what kinds of situations and under which conditions do people find environmental changes threatening? How do people frame 'the environment', environmental changes and issues in their dwelling context, but also in the larger framework of the socio-cultural and economical transformations of Russia (I, III, IV and V articles)? This level of analysis is needed to understand conditions for environmental action and behaviour in everyday life. The individuals' everyday practices (e.g. occupational activities and skills) and the history and socio-economic function of a given place give an individual specific frames and "local logic" in environmental and other discourses (see article III).

In the fourth level we find (4) environmental mentalities concerning the environment. These mentalities are connected with the prevailing interpretations of reality in different life circles and also with routinized patterns of action. Despite a widely recorded public consensus of environmentalism in Western countries, we should not ignore the group-specific differences in environmental awareness: different societal groups have their own way of interpreting environmental issues. In the German context Pofertl *et al.* (1997) interviewed the middle strata of people (traditional 'petit bourgeois') and found five typical patterns of dealing with environmental issues in everyday life. These patterns can be understood as mentalities – "socially shared interpretations of realities which we acquired, reproduced and changed within practices of everyday life" (Brand 1997, 210). If environmental discourses are situated at the broad cultural and societal level, environmental mentalities are group-specific. However, mentalities are embedded within cultural settings and they cannot be rigidly separated from environmental discourse or frames of environmental issues. The five mentalities Pofertl *et al.* (1997) found were: the personal development project, environmental protection as civic duty, system or state orientation, indifference, and business as usual. Logren (2002) found in her master's thesis from Yaroslavl the following environmental mentalities: indifference, concerned hesitant, elitist, authoritarian, and activist.

As Brand notes, ‘these mentalities are also tied to broader patterns of political culture and perceptions of individual and collective responsibilities, and of one’s own role in politics (Brand 1997, 211). Environmental mentalities, as well as environmental discourses, have their own country-specific features. For example, in Germany *civic duty* and *system or state orientation* are anchored deeply in German political culture of order and state orientation. In Russia "state orientation" also seems to prevail. Instead of mentalities we have compared and contrasted within the research framework of the TUNDRA project the forms of environmental perception or concern among the indigenous people of the Usa Basin (Komi and Nenets) with those of the “newcomer” population (Russians, Ukrainians, Tatars and others) (Article III).

Finally, everyday life is connected with several kinds of (5) *situations* where people have various roles (professional work, housework and leisure time) which create different expectations, rationalities, wishes and arguments. In this final, fifth level, the various forms of environmental behaviour are constituted. (Brand 1997, 212–213.)

4 Results

4.1 The legacy of the USSR and resource based industrialism

Russian tradition regards Siberia and the northern regions as a huge reservoir of resources, and this can also be seen in the economic policies of the Soviet Union and in practice as a rather inefficient use of resources. For much of the Soviet period, the notion of conquering nature played a central part in the official ideology. According to the Stalinist version of Marxism, natural resources were without value until developed by human labour. It followed, therefore, that in the Soviet Union all land, water, forest, mineral and other natural resources were allocated to users free of charge. The treatment of natural resources as free goods has been inimical to their rational utilization and conservation. For example, within the lines of traditional Stalinist fashion, all efforts were made to increase the supply of water rather than reducing the use of water which was, for example, high in agriculture. And at the same time when research was focused on planning for the big river diversion project, little was done to deal with water pollution problems (see Åhlander 1994).

Furthermore, when all rewards for the separate central ministries and their planning organisations (with their own organisational norms and priorities – so called departmentalism) in the planned economy were tied to the maximum exploitation of natural resources and their derivatives in production, no one worried about the broader impacts of their actions on the general well-fare and environmental quality (see Ziegler 1987).

There have been two distinct aspects in the development of the environmental situation in the Soviet Union and Russia which are important especially with regards to the northern and eastern regions of the country. The first one is the regional specialisation within the natural resources of industrialism, i.e. environmental deterioration and waste in relation to the exploitation of natural resources, and the second one is connected to environmental pollution caused by industrial production and other human activities.

The first one is related to the so-called Leninist principles of socialist location of production¹ and its later modifications, the Stalinist industrialisation strategy and territorial production complexes (TPC), which emphasised this vast land's endless natural

resources as the basis of industrialisation and for specialised economic regions. The regional specialisation was actually needed to increase the political unity of this heterogenic country: if specialised regions were dependent on each other, they were not prone to separatism. (article I, see also Eronen 1999)

The northern regions were to concentrate mainly on the energy sector (mineral and hydrocarbon extraction) as well as the forest industry: the Komi Republic was to produce wood and paper, the northern parts of Komi coal mining (first through the GULAG system of forced-labour camps in the Stalin era system from the 1930's: Vorkuta and Inta) and later on through implementation of the TPC concept of oil and gas production (Timano-Pechora area: Usinsk from 1970's). This policy of specialisation developed single-industry, single-livelihood and one-company towns which can be called *resource towns* or *resource communities* which are crucially dependent on the utilisation of natural resource, typically one particular resource. (Vorkuta: coal, Usinsk: oil and gas) (Article I, see also Rautio 2003.)

This regional specialisation and natural-resource based industrialism required huge investments in the transportation infrastructure, especially in railways and later on, since the 1960s, pipelines. In addition it required enormous demand for labour. The Gulag (prisoner camp) system provided cheap labour for logging camps and mining communities (e.g., Vorkuta), but after Stalin's death economic incentives had to be introduced in order to attract people to remote regions. Thus, the opening up of northern regions demanded subsidizing caused by enormous distances (all transport fares had to be subsidized) and building of new settlements in these arctic conditions (paying higher salaries, the creation of new social infrastructure and delivering goods). Giant towns serving one large enterprise (Vorkuta) were created at locations which would have been unprofitable and inconceivable in a market economy. (I and III articles, see also Eronen 1999, Rautio 2003.)

This development generated potential risks for local environments and ecosystems: heating systems and pipeline constructions in these harsh climate conditions are more vulnerable to accidents than in more temperate regions. In addition, the general mismanagement of natural resources (wastage and destruction of resources on extraction) was a common feature of the Soviet system.

The second aspect in the development of the environmental quality and people's well-being living in these resource towns is connected to more technical matters. When environmental technology was of a poor standard and the quality of purification was low, the consequences of industrial production for local environments were evident (see article V). Against the backcloth of a comparatively pristine natural environment, the oil production zone of Usinsk and the coal mining area around Vorkuta stand out, both in scientific observations – by the peaks in emissions of methane, carbon oxides and sulphur oxides – and in the visual perception of local people – by the oil derricks, pit-heads and smoke stacks. Around Vorkuta as well as around Usinsk, indications of environmental pollution can be seen with the naked eye: layers of soot in the accumulated snow, dead forest around old oil wells. (Articles III and V).

1. According to Eronen (1999, 202) these are: “the more even distribution of productive forces, the creation of industrial bases in the Eastern part of the country, the cultural development of all regions, the creation of new towns, and considerations of the defense potential of the country”

However, the state of the ecosystems in north-eastern Russia and also the Komi Republic can be seen as bipolar. There are large industrial agglomerations taking large environmental risks ('industrial deserts' or 'hot spots', e.g., the areas around the metallurgical plants of Monchegorsk on the Kola Peninsula) located sparsely hither and thither, and between them can be found almost 'pristine' (if we ignore the long-range transboundary pollution) areas with 'high biodiversity'. While reductions in industrial emissions of pollutants are linked almost exclusively to falls in production, successful measures for reducing emissions are being taken in the new facilities (articles II and V).

The Komi Republic coped fairly well economically, at least by Russian standards, during the crises of the 1990s, but the economic development within the republic has been unequal in the various districts and industries. The crisis of the 1990's has been less severe due to the profitable mining sectors and the production of raw materials for export (oil, gas, wood and some minerals), while its relatively strong autonomy has helped to retain a large proportion of profits within the Republic. The adjustment of the coal mining industry to the new market conditions has been difficult. The low level of processing and technology as well as the rise of transportation charges have made many of Vorkuta's coal mines unprofitable.

Pavel Krotov (1998) has depicted the situation in Komi as a good example of the so-called "Dutch disease". This means that the relationship among and the significance of "a tradable natural resource sector, a tradable manufacturing sector and a non-tradable sector" changes within the national economy. This has happened in Komi: the economy of the Republic now depends more on the export of natural raw materials, mainly oil, than before the reforms, while the manufacturing industrial sector has lost its significance measured by its contribution to the regional budget. The fuel and energy sector in the year of 2000 consisted of over 70% of total industrial production in the Republic, and oil and gas products account for almost 80% of total exports. The Republic's share of total Russian production was (in 2000) 7.1% for coal, 7.0% for wood, 13.8% for paper and 3.2% for oil. The 'Dutch disease' also means that the influence of the leading sector on the region's economic policy and politics is growing, which could further this concentration of the region's economy. (see II article).

After the disintegration of the Soviet Union, the 'path dependency' of the production lines has created distinct futures for different places and people. While the coal industry and its emissions has declined within the market conditions, the area boasts a booming oil and gas industry, based around Usinsk, and this creates increased risks of environmental damage. As the history and socio-economic function of a given place determines up to a certain point its environmental history and future, these aspects could give local dwellers distinct local frameworks and 'local logic' in environmental and other issues (see article I and III). The features are discussed in more detail in chapter 4.3. We can also notice 'path dependency' in wider environmental discourses within the Republic and this is the topic of next section.

4.2 Environmental discourses and politics

This section is devoted to a summary of the results of article II, *Institutional framing of environmental issues in the Komi Republic*. The key words here are *institutions, discourses and frames* and this part examines what kind of *story lines* or *frames* about environmental issues are generated within societal discourses among and between environmental policy actors in the Komi Republic. In this part I focus on how environmental issues and concerns are institutionalised in social practises and in unwritten social norms in policy-making and what are different actors' possibilities of making claims. I also ask why environmental issues are weakly institutionalised in Russia. Is there any 'cultural critique' of dominant values in environmental debates or discourses in the Komi Republic?

The process of politicising the environment, and also other issues, requires that some actor or actors have capacities to frame environmental issues in a new way that also challenges the authority and legitimacy of established governance. What is called environmental politics is, then, this struggle over the environmental policy agenda. In the Komi Republic this struggle is not very evident. In some occasional cases non-governmental environmental organizations have succeeded in voicing their claims and in getting more publicity for some issues (for example, oil spills in Usinsk in 1994). Because the distribution of power between federal and regional politics and administration is still evolving, joint responsibilities (e.g., legislation, and land and natural-resource ownership and use) produce conflicts. NGOs also have the opportunity to use these controversies, and build up issue networks to influence policy processes.

The dominant position of economic interests in a region producing raw materials should be seen as a characteristic of the socio-economic basis of the Republic, inherited from the Soviet era. The lack of participation culture and mechanism in any public-policy field and the polarizing pattern of the political world into 'us' (correct line) and 'them' (enemies) – inherited also from the Soviet time – block processes of politicising the environment. On the other hand, in Komi resources for environmental mobilisation and movements are quite limited. In comparison with Western European countries, the opportunities for environmental activists to promote environmentalism and create new 'alternative identities' in Komi is also limited in the current context. The 'social space' for new 'projects of identity' and individualism – which have been related to the values of the middle classes in Western countries – is marginal in the Republic's mono-functional resource towns'. In addition, environmental activists hardly receive regional 'media resonance' for their activities and alternative discourses (as new symbolic codes), because of prevailing 'hegemonic' socio-economic discourses (see below), which in turn partly stems from the fact that strong economic and politico-administrative actors have control over the media. However, it is hardly possible to define non-governmental environmental organisations and groups rooted in the Republic as new social movements, as identity-oriented movements.

In Komi and throughout Russia active interest groups and organizations that pursue their own claims in their own way are not easily tolerated. The weakness of civil-society institutions is noticeable in the field of environmental policy in which non-governmental organisations are approved of as supporters and legitimators of the activities of

governmental environmental administration, but not as independent and active interest organisations.

I found that the dominant frame in environmental policy discourse, which I identified as *Resource area*, is grounded in the official discourse. It emphasises industrialism, and here the regional economy is seen within the framework of an “economy based on natural-resource extraction”, and industrial and economic growth based on resource extraction are therefore seen as priorities (see article II, 92). The definition of the problems alludes to ‘hot spots’, which means that the republic’s area are relatively clean compared with the central regions of Russia, and there are specific problems in certain regions and fields of production. The basic assumptions in this frame are the following. The Republic’s resources are almost unlimited, and it is necessary for development to utilise these resources as much as possible. Komi (and Russia) need strong economic growth based on resource extraction. Every kind of production causes environmental damage, and therefore (environmental) sacrifices at this stage of development are unavoidable. Solutions and remedies are basically technological, and federal support and new solutions for environmental investments are needed. This frame actually unites the workers in the main industrial branches with politico-administrative actors and enterprise managers, because the local communities and the regional economy are dependent on only a couple of industries.

The second frame is called *living space*, which can be seen as an alternative to the dominant one in some cases, but I shall point out that frames exist side by side. Living space is mainly represented by NGO members, some scientists and some officials. Komi is first of all a living space for local societies and cultures. It is also a unique territory with a diversity of natural phenomena (taiga and tundra) and cultures with limited natural resources. The problems include the decreasing amount of natural resources and their degradation (mainly biological) and the pollution of the air, water and land, all of which are linked together as failures in a production system that exploits natural resources in an unsustainable way. A narrow administrative approach to natural resources and an indifferent attitude towards local people and the environment in enterprises are the indicators of this unsustainable way of thinking. Ecological sustainability is seen as a prerequisite for the (permanent) local people and sources of livelihood (welfare). Within the lines of this frame, sustainability presumes limited resources, and sustainable development means changing the priority from non-renewable resources to the renewable, above all by developing forestry, but also by focusing on fishing, hunting and gathering, reindeer herding and outdoor tourism. Within the lines of this frame we can notice ideas of ‘green’ environmentalism which impugns the prevailing production system and parts of the social organization.

4.3 Milieu-specific life-worlds

In this part the major question is how the Environment ‘resonates’ with people’s life-worlds (the environment). In what kind of situations and under which conditions do people find environmental changes threatening? How do people perceive and frame

environmental changes and issues in their dwelling context, but also in the larger framework of the socio-cultural and economical transformations of Russia?

In general, environmental issues hold a low profile compared with other social problems among townspeople of Usinsk and Vorkuta, and in general in the Komi Republic during the period of fieldwork (1998–2001) (articles I, III, IV). Under ‘transformational’ circumstances income level and employment were clearly more important to people than environmental issues.

For the newcomers of the Russian north, environmental threats are – or at least were during the period 1998–2001 – clearly connected with questions about the future of the local industry, employment, incomes and housing, and attached to anxiety over the whole ‘disarray’ in Russia. Perceived environmental changes were experienced as part of the unstable societal situation and social change processes. In many people’s thinking, the deterioration of the environment reflected the prevailing ‘disorder’ (bardak) of Russia: dirt, litter in the streets and other forms of pollution are seen as signs of disorder. The collapse of the old practical and symbolic world has caused a strong feeling of insecurity, especially in the heavily subsidised northern cities.

First of all, environmental problems for and among the citizens of the Komi Republic are mostly issues of the life-world (the environment) and questions of health and wellbeing. For the people of Usinsk, Vorkuta and their surroundings, air and water pollution (‘brown’ issues) are perceived first and foremost through their own senses and experiences in the context of everyday life. People were concerned about health risks associated with the quality of their drinking water, and with activities such as fishing and swimming. In Vorkuta, air pollution was perceived to be the primary environmental threat, the principal sources being coal combustion from power and heating plants, coal mines and a cement factory. Here, local inhabitants evaluated air pollution by direct observations and personal experiences, such as contamination of washed clothes left out to dry, discolouration of snow, and respiratory problems, whereas scientific knowledge played a minor role in shaping their opinions (articles I, III, IV and V). In Southern and rural parts of the Komi Republic local people are also concerned illegal cutting of forests and decrease of forest resources (article IV).

Even climate change(s) in the Komi Republic is more a personal concern of daily existence (health and well-being) than an environmental, a societal or a global issue. However, it is a ‘background issue’ connected to other societal and environmental changes, and thus, not actively manifested in daily life. When climate change is interpreted as changes in the seasons (cooler summers and warmer winters) and the high and quick variability of the air temperature, it is perceived as a problem of personal health and well-being, especially for the newcomers in the harsh northern conditions where societal changes have been radical over the last ten years. People here view the deterioration of the environment mainly in terms of the threats to their own and their children’s health, and climate change is one aspect of this deterioration. Overall, health issues seem to have a very special meaning in the northern conditions and arguments about severe conditions were used to legitimate the special status of these towns with high salaries and benefits (articles I and IV).

A social ‘space’ for green or global (the Environment) environmental issues and discourses in these resource towns is limited. Vorkuta especially is a true frontier town where man struggles against a harsh and hostile natural environment in order to secure

coal for the sake of the national economy. Vorkuta was ‘a true Soviet city’ with coal mines and miners (‘élite workers’ in one of the key industries), and received major subsidies from the central government. On the other hand, it has anticommunist, radical political traditions of underground activity, which have remained from its former role in the GULAG, although the political radicalism of the miners derives primarily from the fact that their economic conditions have persistently been much worse than those of miners elsewhere (articles I and III).

During the 1990s, the city dwellers of Vorkuta underwent a crisis that affected the local economy as well as their self-identification. On the practical level, the work provided by the mines could no longer provide the same kind of social safety net as previously when the mining company provided everything from housing to medical services. Savings were devastated by inflation, and the government withdrew many privileges that were meant to compensate for the “hard living conditions of the north”. On the symbolic level, Vorkuta and its workers lost their prestige and the dispensations they had been enjoying as ‘élite workers’ in one of the Soviet Union’s key industries. In comparison to Vorkuta, Usinsk is affluent because the oil industry brings in revenues. The institutional change has been much quicker in Usinsk, which is largely because of a more lucrative oil industry, but also because of ‘cultural’ features. Vorkuta has positioned itself to defend the coal mining industry, and along with it, the old structures and ‘bodies of mind’. In this way we may say that in Vorkuta the Soviet *habitus* is still more alive.

Scientific measurements indicated higher levels of environmental pollution in the area around Vorkuta than at Usinsk, whereas inhabitants of Usinsk engaged more intensively in debates about pollution and environmental protection than those of Vorkuta. In the Usinskians’ experiences of the major oil spill in 1994, its wide media profile and the visits of environmentalists created a special discursive space for environmental affairs. This generated a greater eagerness to discuss environmental issues, thereby also laying the grounds for environmental concern. In this way, ‘The Environment’ – environmental concern from outside the local context – came to visit Usinsk and merged with the inhabitants’ environmental perception. This key event in Usinsk gave rise to waste issues (of oil drilling) being taken collectively as ‘environmental’ (articles III and V).

It is quite certain that the working people of northern tundra cities during the Soviet period had a fairly unanimous industrial frame (close to *Resource area* frame), in which industrialization meant material well-being, from which necessarily follows at least some environmental spoiling (“industrial progress – more pollution”). This frame was strengthened by the northern frontier discourse, which emphasized the stark conditions and the bravery of the workers, especially the miners, and that the north ‘fed’ Soviet industry. In addition, this view was strengthened by the state’s official ‘nature conquering ideology’, which had its strongest expression in arctic regions. The north was – and still is for the most part – a reserve storage (*Resource area*) which should be used.

Now, in the 1990’s, along with social change, the environmental question has caused a rift in this frame, especially in Usinsk: since the effects on the local environment – water, air and land – of drilling and transporting oil and mining coal have become more and more clear through observation and the media attention, and because these have been discussed publicly in Usinsk, inhabitants have noticed the need for change in the chosen methods of benefiting from these reserves. No longer does benefiting from the natural reserves need to lead to pollution of the environment, if such environmentally friendly

technologies as the new oil companies have brought into the Russian tundra could be used.

Thus environmental orientation on the level of attitudes has strengthened. Pollution is not taken for granted within the life-worlds when it is discussed in public. The workers', but especially the teachers' 'northern nature' has become vulnerable and more limited in its reserves. Among government officials the *Resource area* frame is stronger. In them can be found the idea of a 'fight with northern nature', which more easily denies the effects of their own actions, such as environmental problems.

4.4 Group specific features

Our research questions in the TUNDRA project were boosted by recent work in ecological anthropology which has shown how people's perception of the environment depends upon the kinds of practical activity in which they are engaged. Our expectation was, then, that people with very different backgrounds and experience of inhabiting a region ('newcomers' and indigenous groups) will also develop radically contrasting forms of environmental awareness and concern. We researched whether indigenous groups living in the region perceive the natural world as continuous with the domain of human social life, or whether they perceive it as standing apart from this domain as the so-called Western view does. Furthermore, do immigrants to the north from urban-industrial backgrounds, by contrast, tend to see nature as an alien domain whose appropriation involves struggle, suffering and conquest?

We found that it is not possible to make a clear-cut distinction between these two groups, nor would this distinction coincide with the one between rural and urban communities (Komi do not live only in villages, nor do newcomers only live in towns). We rather want to emphasise differences in livelihoods and land-use strategies characteristic of the various communities. In the villages of the research region, inhabitants live by fishing, small-scale agriculture, berry-picking, hunting and partly reindeer herding.

The relationship to nature of the inhabitants of Russia's northern regions who have come to the area along with its industrialization has been influenced strongly by the assumed temporary nature of the work in the mining and oil industries. During the time of the Soviet Union, an individual having worked for 10 to 15 years in the north might move to the south, and obtain a nice apartment and compensation for those years spent in the north. The majority of those interviewed in Vorkuta or Usinsk, or their parents, had come into the northern industrial cities to work and earn a good living. Although the romanticized north's 'aroma of the tundra' ("za sapakhom tajki") has also tempted many, the higher wages and special privileges have been the greatest attraction. In the beginning, many had thought to stay a few years, or 10 to 15 years at the most, but as their families grew and as life took on a more permanent form, returning became more difficult. However, many have felt themselves to be 'temporary' (vremenshchik) inhabitants of the north. Thus, the local tundra and forests have remained quite unknown to many (article I).

In recent years, when wages have been left unpaid and savings and privileges have been depleted, the close proximity of Vorkuta's and Usinsk's environments has begun to mean more to many of the town dwellers because now many of them spend their holidays in the north. Vacationing in the southern vacation resorts has become too expensive.

Most of the urban informants regard the northern 'natural' environments – forests, bogs, the tundra etc. – mainly as settings for leisure activities. Mushrooming and berry-picking, fishing, hunting and hiking are forms of relaxation and give the opportunity 'to breathe fresh air'. These environments are held to be important for health and well-being, as a counterbalance to industrial or other work and town life. At the same time, these activities also have significance for the subsistence economy and urban inhabitants make use of them to various degrees.

Overall, newcomers to the north consider living conditions to be very harsh. This harshness derives partly from the uncertain 'transitional' circumstances. Yet what is more, there is a narrative of the north – a kind of frontier discourse, which depicts northern nature as very austere. The narrative of the north used to be part of the rhetoric needed to justify the special status of these towns with regard to subsidies and benefits within the Soviet economy, and remains significant within the Russian economy which is still dependent on the export of natural resources. In this way it is connected to the *resource area* frame depicted earlier. This narrative is particularly discernible in Vorkuta, and it seems to confirm the presupposition that newcomers tend to see nature as an alien domain whose appropriation involves struggle, suffering and conquest. However, it is their environment as a whole that involves suffering, rather than the encounter with a 'nature' that is separated from the human world. Urban newcomers feel confronted with the adversities of the natural environment as well as those of the built surroundings and the social milieu (notably institutions of the official sphere). Our urban interviewees usually discussed 'the environment' without separating the natural from the social. Similarly, for rural informants changes in the natural environment are closely connected to the socio-economic sphere. (Articles I and III)

Frontier imagery of the two towns and their inhabitants is in stark contrast with the officially promoted traditionalist image of the indigenous population, and newcomers as well as indigenous inhabitants appear to buy into this discourse and tend to see each other along these lines. For example, many newcomers speak about Komi reindeer herders as 'children of nature', allegedly too honest and naïve to live successfully in urban places, but feeling 'at home' in the tundra.

However, such ethnic stereotypes do not help to elucidate the question of whether there are differences in the perception of the environment between or among various groups. Differences of this kind cannot be explained simply by ethnicity but rather by different livelihoods and everyday activities. The Komi reindeer herders – to return to the above example – do not see themselves as 'children of nature', but rather as people who 'know the tundra' with sufficient experience and endurance to make a living there. It is in this sense that practical environmental knowledge and skills provide for a livelihood in the tundra and forest.

Many of the villagers work in, or at least depend on, fishing, reindeer husbandry and, to a smaller extent, hunting. Like the townspeople, specific occupational groups of the rural population have distinct spatial spheres of activity. A reindeer herder cannot pursue his work without having a thorough knowledge of his environment. Migrating between

summer and winter pastures, herders travel up to 1,000 km in the course of one year, the whole way on reindeer-drawn sledges. Fishermen have a smaller radius of activity but some may travel more than 100 km to get to their preferred places. The biographies of fishermen, hunters and herders are closely connected with specific places; many place names testify to the deeds of their ancestors. For the villagers, it is beyond any doubt that humans are capable of staying in this region for a lifetime. They feel to be at ‘home’ in these environments more than most of the newcomers. (Article III.)

Both groups, villagers and town-dwellers in the north of the Komi Republic, perceive pollution as a threat and have experienced some impacts from pollution on their daily lives and everyday surroundings. However, there are differences in the perception and experiences of environmental impacts among these groups. The rural individuals and communities experience the biophysical impacts of environmental change (oil spills) more directly in their livelihoods, as fish become inedible and cattle cannot drink water from the rivers. Rural inhabitants are more directly dependent on the local ecosystems than newcomers working in hydrocarbon extraction and other industries. Although the townspeople, too, engage to some extent in subsistence activities, they are less affected by the consequences of environmental pollution because their livelihood is based on a different combination of income sources. (Article III.)

Hence, we can say that social and occupational groups differ in their perception of environmental changes (e.g., with regard to ‘reading signs’ of changes in plant species valuable for them) because they engage in different tasks and use different skills; they have different functional relationships to the ‘local space’, and only in this respect one might say that indigenous inhabitants and newcomers inhabit different life-worlds.

4.5 The bounded situation and behaviour of individuals

We can now consider an individual’s behaviour in the field-specific contexts and situations of everyday life. In different spheres of life – private, working and political – are fields of action with a great variety of rationalities, expectation horizons, claims, and options for action. Here we can find the well-known heterogeneity of patterns of environmental behaviour.

The great majority of those interviewed in Vorkuta and Usinsk – 111 mentions; 63% – revealed that the condition of the environment has worsened during the time they had lived in the area. On the other hand, a great part of the respondents – 37 mentions; 21% – said the condition of the environment had improved. Where do these differences come from?

Firstly, one must consider how certain concepts and words – such as environment² – are understood. Several respondents mentioned “a lack of greenery” as a problem that was ecologically and environmentally related, which can be associated with the northern

2. The Russian term for ‘environment’ can comprise both the natural and the social environment. The colloquial term for ‘environment’ is *okruzhayushchaya sreda* (literally, ‘surrounding milieu’ or ‘surrounding environment’). The more formal (scientific, juridical) term is *okruzhayushchaya prirodnyaya sreda* (literally, ‘surrounding natural environment’).

location and the fact that the greenery of the town environment is not cared for. Speaking of the environmental condition, respondents meant the changes in the conditions of both the natural – including forests, ground, water, mushrooms, berries and fish – as well as the town surroundings in the taiga and tundra, such as the building of roads, the amount of rubbish on the streets, the quality of the air and the condition of parks. Simultaneously, the condition of the environment can be seen as having worsened (air quality and pollution of water systems) and improved (city parks). It is exactly these kinds of interpretative, broad-cultured, and local unique characteristics that remain unnoticed in the opinion polls. (Article I.)

When considering the problems mentioned by our interviewees, a question that arises is what an individual can do to better the quality of air and water, and mitigate the dirtiness of the streets. In general, we may say that there has not been very much room for discussion about environmentally-friendly consumption or political participation in the midst of the many crises that have affected Russia. On the other hand, in the cases of Usinsk and Vorkuta, water and air pollution are caused almost solely by industry, and – with the possible exception of privately owned automobiles – not by the consumption habits of the individual citizens. A present-day ordinary Russian with his/her low level of consumption is pro-environmental much more than his/her Western comrades. However, for most of Russians it is not a conscious choice but rather a necessity. (Article I)

At the same time, the weakness of general environmental discourses in Russia gives individuals a different logic of framing environmental issues than in many European countries where 30 years of public environmental debate has formed normative standards of environmental behaviour at least at the discursive level. In Russia, in contrast, ideas of the individual's responsibility have not encroached into the public sphere and debates, and Russians do not consider themselves as environmental consumers or environmental (political) citizens. However, in the field of consuming the choices are much more limited by the contexts than in Western countries. Nevertheless, our interviewees remarked on the way the individual could influence environmental quality in a concrete manner: not littering and in general behaving properly in public places. This view actually reflects the basic idea of Soviet propaganda according to which social problems originate from the imperfection of individuals' behaviour. If everyone behaved him or herself as a cultivated human being (*kulturnyi tselovek*), there wouldn't be such problems.

Because environmental issues are weakly institutionalised in public discourse, in business practices and generally on the informal level, environmental activity is often slanted in the media and government, as well as by individual citizens' activities, as either idealistic daydreaming or pushing one's personal agenda. Furthermore, in the northern mono-functional resource towns activism towards the sole surviving factory might not be considered as rational.

The various roles of those interviewed can be seen in their answers, for example, as representatives of a social or occupational group, individual citizens, fathers or mothers. Compared to other occupational groups, in the opinion of most administrative officials, especially in Vorkuta, the condition of the environment has improved in the last eight years while production has diminished and while environmental questions have been addressed or, at least, recognized.

One can witness strategic, professional speech that strives to belittle the problems, or gives the impression that action has been taken to correct them; they are under control.

This could be seen in the answers of those in Vorkuta in charge of the companies' environmental protection section. In Usinsk, the greater part of those in administration admitted that the condition of the environment had weakened, mostly because of oil. In Vorkuta, the opinion of the majority (10 respondents out of 16) was that it had improved, which of course, in the 'standards' of natural science, is based expressly on the reduction in the production of coal. Blue collar workers and teachers generally evaluate the condition of the environment as having worsened. Amongst these groups one can find questions concerning not only the instability of the social situation, but also about the environment. (Article I.)

5 Discussion and conclusions

In this study, it has been my aim to discuss and analyse the contexts within which environmental concern is manifested as well as studied. My point has been that ‘the environment’ and environmental matters should be seen as part of other social practices, the ways of thinking, interests and values, and not simply accounts of ‘the Environment’ as a unified and global entity. Therefore, I presented as the major theoretical and methodological idea two different notions of environment. The first one is the life-world of the individual (environment with a lower-case ‘e’), where environmental changes are perceived in the framework of everyday life, and through direct experience of other people and the non-human world, and secondly, global environmentalism’s the Environment, which is nowadays in Western discourses viewed as a globe (‘The Environment’ with an upper-case ‘E’). This study focused particularly on the life-world perspective, and asked how these two environments ‘resonate’ or communicate in the particular contexts of the Komi Republic.

It is important to understand that these two environments are not separated from each other; on the contrary, in a local context, they interrelate and intermingle. This kind of separation or division is analytic, but it has methodological and also policy outcomes. The division of these two notions of environment can be seen through their objects of concern and at the same time through the substantive topics of the research: In the first case, the environment, concern founded in the research is often for *environmental quality* and *risks* (people’s health and well-being living in the particular contexts and places), and in the latter form, the Environment, concern for *environmental problematique* as a scientific, a moral or a political issue (global problems, the critique of consumer society etc.). This kind of classification is suitable for noticing the differences between approaches or strategies of the research: one strategy to investigate “top-down” people’s knowledge or attitudes of environmental problems (defined by global environmental discourses) via surveys, another strategy to take the local context and the individual’s life-world within it as a reference point of changes.

I declared in the introduction that my task is to dispel a prevailing ‘myth’ of public opinion in the West according to which Russian do not care much about the environment. My research shows this opinion to be mistaken; Russians are concerned about the state of their environments, but they are more concerned about the environment, so-called

'brown' environmental issues, than 'green' and global (the Environment) issues. In other words, the public's environmental concerns are about 'ecological risks' – the health and well-being implications of environmental degradation in their life-worlds, not so much focused on green (e.g., conservation) or global (e.g., global warming) concerns which have been strengthened in the Western countries during the last decades. And overall, Russians' environmental concern has specific features due to the present ecological and socio-economic situation, Soviet history and the weak development of civil society.

If we look in a more detailed manner at the dimensions of environmental concern (knowledge, attitudes, behavioural intentions and actual behaviour/action), we shall notice what is specific in Russians' environmental concern. First of all, 'brown' environmentalism is understandable since approximately 60 million Russians now live in zones with adverse environmental conditions (15 % of the country's territory). Although Russia's socio-economic crises in the 1990's significantly reduced industry's and other sectors emissions and discharges of polluting substances into air and water, relatively high levels of water and air pollution, and waste production compared with worldwide standards can be still found. And after the Russian economy began to grow in 1999, air-pollution emissions (from both stationary sources and especially motor transport) have started to rise and waste creation has grown by 3.4 times since 1995 (UNDP 2005). An overall tendency in Russia is a structural shift in the economy increasing the proportion of sectors which use natural resources and create pollution. Production of energy sources has increased by 1.4 times compared to 1995, and due to Russia's role as a source of global oil and gas, the expansion of this industry brings increased risks of pollution, especially in the northern regions.

To conclude, we can say that in the Komi Republic environmental concern is about the environment (environmental quality and risks) in everyday contexts, not about the Environment, an environmentalist one. Environmental problems are viewed as a threat to individual health and quality of life but not so much as societal problems which need political solutions.

Nevertheless we should not only view Russia as a country where environmental degradation prevails. In recent years in many places the quality of the water, for example, has improved, which has not only resulted from diminished production levels, but from strengthened ecological and sanitary controls (see Kuliiasova & Kuliiasov 2003). Despite these positive trends, Moscow State University has calculated the economic costs of damage to human health in Russia, caused by air and water pollution, ranges from 3 to 6 per cent of GDP (UNDP 2005).

In these conditions people's own perceptions and experiences of 'brown' issues provide the crucial basis for environmental awareness and concern – although misconceptions about reasons and causal mechanisms (from the scientific point of view) are widespread. This has been proved also in the case studies in Western countries of local pollution issues, in which the influence of external sources of information on public perception is minimal (see Bickerstaff & Walker 2001). However, in Komi where (global) environmental discourses are not clearly discernible among public discourses, primary personal experience also seems to be crucial with respect to global environmental issues. Climate change(s) in the Komi Republic is actually more a personal concern of daily existence (health and well-being) than an environmental, a societal or a global issue. The cycle of seasons has a major importance on people's experience of the weather in the far

north (see Ingold & Kurttila 2000), and thus the talk and observations of changes in seasons have to be put in this context. The climate in the far north has a special meaning and it is experienced as harsh and having an effect on one's health along with environmental (e.g., water pollution) and social problems (e.g., housing problems) and working conditions (in coal mines or on oil derricks).

However, climate change, interpreted as unpredictable weather and the unstable cycle of seasons, can also be understood as a 'background issue' within the context of radical societal changes. When our interviewees yearned for stable climatic conditions they actually pined for a stable and predictable society, which prevailed during the time of the Soviet Union. At that time people living in the towns of the far north used to have a steady and good income guaranteed by the northern privileges. Overall, in Northern Komi environmental problems were framed as part of a societal transformation. This supports the notion that global concepts and risks of environmental change are always localised in particular socio-political and cultural contexts (Burningham & O'Brian 1994).

With regard to attitudes, behavioural intentions and actual behaviour, we may find differences compared to the contexts of Western Europe. In general, we may say that there has not been very much room for discussion about environmentally friendly consumption or political participation in the midst of many crises in Russia. The weakness of general environmental discourses in Russia gives individuals a different logic for framing environmental issues from many European countries where 30 years of public environmental debate has formed normative standards of environmental behaviour at least at the discursive level. Ideas of individual responsibility have not encroached into the public sphere and debates, and Russians do not consider themselves as environmental consumers or environmental (political) citizens. It seems that the framework of Soviet citizens' environmental behaviour still prevails. An individual is able to improve environmental quality only in a concrete manner: not littering and in general behaving properly in public places, or planting a tree (see also Logrén 2002). Despite this, we should notice that the present-day ordinary Russian with his/her low level of consumption is much more pro-environmental than his/her Western comrades. However, for most Russians it is not a conscious choice but rather a necessity. To summarise, citizens in the Komi Republic are quite concerned with environmental quality, but they do not see many chances to commit to and personally influence environmental matters.

We can say that institutionalisation of the environmental issues refers to concrete situations, in which environmental concern comes across, for example, in political and economic decision-making and educational institutions. When political parties formulate environmental agendas, companies advertise the environmental benefits of their products, and housing companies organise recycling, we can say that 'greening' has become concrete in societal practises. This has happened in many Western countries.

In the Komi Republic, and overall in Russia, environmental issues are weakly institutionalised in public discourse, in business practice, generally on the informal level and in unwritten social norms, conventions and lifestyles. As a result, "environmental principles" as a set of rules, give no generalised meaning to social activity and do not regulate it in a patterned way. From the theoretical point of view, this results from the lack of institutional autonomy between state, economy and civil society. Especially in the regions where the natural-resource extraction economy dominates, the rules are determined by industrial and statistical interests, which define relevant participants and

activities. Under circumstances of de-legitimised and marginalised forms of collective action and controlled media, a few weak civil-society actors cannot influence the ways and patterns in which environmental issues are framed. They lack the capacity to struggle with the environmental-policy agenda, to direct *environmental politics*, or to generate alternative definitions and norms of environmental issues in the discursive space of public discussion (public agenda-setting). The weakness of civil-society institutions is noticeable in the field of environmental policy in which non-governmental organisations are approved of as supporters and legitimators of the activities of governmental environmental administration, but not as independent and active-interest organisations. To summarise environmental discourse as a moral project and as ‘a counter-movement’ is weak in Russia and the possibilities for the actors of civil society to make claims and politicise environmental issues is restricted, but not totally limited (see Tynkkynen 2005).

Although non-governmental environmental organizations (ENGO) cannot influence societal discourses, they can contribute to policy processes of single issues. Because the distribution of power between federal and regional politics and administration is still evolving, joint responsibilities (*e.g.*, legislation, and land and natural-resource ownership and use) produce conflicts. ENGOs also have the opportunity to use these controversies, and build up *issue networks* to influence policy processes. In addition, international environmental organisations, Greenpeace and WWF, have been able to successfully utilise transnational networks in promoting environmental friendly practices in European Russia (see Tysiachniouk & Reisman 2003).

The quickly awakening interest in the environment during the Soviet Union’s perestroika period suggests that environmental problems as a social problem were recognized quite widely amongst the people. While discussions on the subject had previously been kept up by researchers and writers, with the advent of perestroika, hundreds of thousands of ordinary citizens were voicing concerns about the quality of their, and their children’s, environment (Weiner 1999). The movement during perestroika was, as Oleg Yanitsky (2000) noticed, a result of people’s readiness to protest and the mass media’s grasp of the messages of environmental group leaders, to their ‘damnation.’ Various environmental campaigns were the first forms of protest and a democratic movement. At that time when political parties did not exist, movements formed around environmental questions clearly pushed forward political goals, such as democratic reform of the political system, and in the republics of the USSR questions of independence. The movement was not merely – and possibly not even primarily – a reaction to the environmental situation, rather, it must be examined in its social context.

On this basis, it is understandable that environmental questions disappeared from the media quickly after the beginning of the ‘shock therapy’, even though the state of the environment has not improved. The social and economic instability had, in a certain way, forced people to curl up around their own livelihood and survival, within a “dacha and bazaar economy” (Burawoy 1997). In Russia, aspiring toward a market economy has, by its nature, been in opposition to environmental protection. In newly established market economies the desire for economic growth and neglect of environmental consequences is evident to see, but in Russia, where an environment-exploiting economy prevails, recent developments in environmental administration shows that elite groups have adhered to the slogan “first the economy, then ecology”. This has effectively dissolved society’s

environmental awareness and the budding activity that dawned toward the end of the Soviet era.

Klaus Eder has formulated three phases of modern environmentalism which helps to understand the history of environmentalism and environmental concern in Russia. “A first phase when the incompatibility of ecology and economy characterized environmental problems; 2) a second phase when regulatory approaches dominated environmental action and discourse, with sustainable development as the latest manifestation; and 3) a third phase which emerges today: that is, the cultural normalization of environmental concern and their integration with established patterns of ideological thought.” (Eder 1996, 163). As we see, environmentalism in Russia is still in the first phase. Eder stresses that the history of modern environmentalism should be relativized by reference to cyclical patterns and cultural differences. In other words, environmentalism is linked to cyclical waves of social protest and secondly, “there is an evolution of different worlds of environmentalism which are cultural responses to specific social conditions. The project of environmentalism is a series of green particularisms rather than a collective project.” (Eder 1996, 163)

I have claimed that in order to study environmental concern as a *non-linear process* (as opposed to a linear view: more knowledge → change in attitudes → pro-environmental behaviours) between other social and cultural processes we need to look at local contexts of everyday life, and people’s experiences of environmental issues *in their own environments*. Using the approach of Ingold (2000), I situated people in the context of an active engagement with the constituents of their environment and wider contexts of structural and cultural phenomena (Brand’s contextual model). This means seeing the individual as placed *within* the environment, rather than in the position of having to reconstruct it from the *outside*. Thus, I posited two environments: the first one is the ‘environment’ as a ‘life-world’ (environment with a lower-case ‘e’) and the second is the Environment as a globe (‘The Environment’ with an upper-case ‘E’) framed by global environmentalism and discourses.

I have suggested that when the most researchers are focusing on the Environment (as scientifically given pollution problems etc.) in their attitude studies of environmental concerns (especially in the global comparative surveys), people under study frame environmental issues from their life-worlds where environmental changes are perceived in a framework of everyday life through direct experience of other people and the non-human world. Therefore, pollution or climate change is not viewed by them as ‘facts’ about pollutants or climate records but rather experiences in practices of everyday life in particular environments. This is one reason why there exist different kinds of ‘gaps’, such as a gap between knowledge on a particular issue and intended or actual personal behaviour considered to mitigate harmful impacts. To ‘dispense’ information in local communities, or to ‘harvest’ so-called traditional environmental knowledge from them without taking into consideration the embeddedness of different kinds of knowledge in certain practices, would only create new gaps, between local people, scientists and policy-makers.

Environmental perception is the key to local expertise, which is often non-verbal, non-cognitive and bounded by context and practice. It refers to the way one obtains knowledge within one’s environment. Knowledge is in my approach already communicated and the crucial part, or in many cases the basis of it, is ‘tacit’ knowledge

obtained through direct perception. When the perception (of the environment) is understood as a matter of sensory attunement and a result of action, activity in process, it is not taken as a (picture-like) cognitive representation which is recorded somewhere within the neural network. A significant part of people's knowledge of the environment is tacit, in other words, experienced or perceived but not interpreted. This is the main reason why 'local knowledge' is not easy to pick up from surveys or even in face-to-face interviews.

Environmental changes are perceived in a framework of everyday life, whereas environmental knowledge (as cognitions) originates mainly from outside the immediate context and is imported along various forms of communication. Local environmental knowledge is the result of the transactions and interactions, within a local context, between environmental perception and environmental knowledge. Local environmental knowledge is knowledge through engagement at two levels. At the first level, the individual engages with his/her surroundings giving rise to environmental perception, and at the second level, environmental perception is engaged with externally derived cognition giving rise to local environmental knowledge. This knowledge cannot be treated solely as factual information since it has its own moral and symbolic dimension within a social, cultural and political context.

To connect environmental perception into, environmental concern, which comprises knowledge, attitudes and behaviour/action, we may say that perception is at the level of practical awareness (tacit knowledge), and knowledge with which individuals think and talk is at the level of discursive awareness. To connect this to life-world and environmental-change issues, we could say that the immediate surroundings of people as part of the life-world that normally is taken for granted are sometimes potential sources of alarm.

As the analysis has shown, in the Russian sub-Arctic oil town people can be accustomed up to a certain point to oil spills as a normal part of living in the local context, but if a large oil leak occurred, it could arouse public anger and make the environment political. This is not to say that environmental activism directly emerges or follows from environmental damage because activism is mediated by senses of agency and particular timings (MacNaghten & Urry 1998). In Komi the large oil leak in 1994 with the attention of the international media created the key event to which everyone referred. In this way the Environment came in the community and resonated with the life-worlds of town dwellers making new environmental frames and raising their discursive awareness of environmental issues.

References

- Adger, WN, Brown K & Hulme M (2005) Redefining global environmental change. Editorial. *Global Environmental Change* 15: 1–4.
- Bickerstaff K & Walker G (2001) Public understanding of air pollution: the ‘localization’ of environmental risk. *Global Environmental Change* 11: 133–145.
- Billig, M (1995) *Banal Nationalism*. Sage, London.
- Blake, J (1999) Overcoming the ‘value-action gap’ in environmental policy: tensions between national policy and local experience. *Local Environment* 4: 257–279.
- Bourdieu, P (1985) The social space and the genesis of groups. *Social Science Information* 24: 195–220.
- Bord R, Fisher A., O’Connor R (1998) Public perceptions of global warming: United States and international perspectives. *Climate Research* 11: 75–84.
- Brand, K-W (1997) Environmental Consciousness and behaviour: the greening of lifestyles. In: Redclift M & Woodgate G (eds) *The International Handbook of Environmental Sociology*. Edward Elgar, Cheltenham, 204–217.
- Brand K-W, Fischer C & Hofmann M (2003) *Lebensstile, Umweltmentalitäten und Umweltverhalten in Ostdeutschland*. Müncher Projectgruppe für Sozialforschung e.V., UFZ Umweltforschungszentrum Leipzig-Halle GmbH, Leipzig. Cited February 5th 2006 from <http://www.ufz.de/data/ufz-bericht-11-031102.pdf>
- Brechin SR & Kempton W (1994) *Global Environmentalism: A Challenge to Postmaterialism Thesis*. *Social Science Quarterly* 75: 245–269.
- Burawoy M & Krotov P (1994) Class Struggle in the Tundra: The Fate of Russia’s Workers’ Movement. *Antipode* 27: 115–137.
- Burawoy M (1997) The Soviet Descent into Capitalism. *American Journal of Sociology* 102: 1430–44.
- Burningham K & O’Brien M (1994) Global environmental values and local contexts of action. *Sociology* 28: 913–932.
- Cooper DE (1992) The idea of environment: In: Cooper DE & Palmer JA (eds) *The environment in question: Ethics and global issues*. Routledge, New York, 165–180.
- Darier É & Schüle R (1999) ‘Think globally, act locally’? Climate change and public participation in Manchester and Frankfurt. *Local Environment* 4: 317–329.
- DeBardeleben J & Heuckroth K (2001) Public Attitudes and Ecological Modernization in Russia. In: Massa I & Tynkkynen V-P (eds) *The Struggle for Russian Environmental Policy*. Kikimora publications, Series B: 17, Helsinki.

- Clarke S, Fairbrother P, Burawoy M & Krotov P (1993) *What About the Workers? Workers and the Transition to Capitalism in Russia*. Verso, London.
- Dunlap RE & Mertig AG (1995) Global Concern for the Environment: Is Affluence a Prerequisite? *Journal of Social Issues* 51: 121–137.
- Dunlap RE (1998) Lay Perceptions of Global Risk: Public Views of Global Warming in Cross-National Context. *International Sociology* 13: 473–498.
- Dunlap RE & Robert EJ (2002) Environmental Concern: Conceptual and Measurement Issues. In: Dunlap RE & Michelson W (eds) *Handbook of environmental sociology*. Greenwood Press, Westport, 482–524.
- Eder K [*et al.*] (1995) Framing and communicating environmental issues: final report to the Commission of the European Communities EC environmental research programme: Research area III: Research project number PL210493.
- Eder K (1996) *The Social Construction of Nature. A Sociology of Ecological Enlightenment*. Sage, London.
- Elias N (1987) *Involvement and detachment*. Blackwell, Oxford.
- Eronen J (1999) Distance and Logistics as Problems – Their Soviet Solutions. In: Smith J (ed) *Beyond the Limits. The Concept of Space in Russian History and Culture*. *Studia Historica* 62. Finnish Historical Society, Helsinki.
- Franzen A (2004) Environmental Attitudes in International Comparison: An Analysis of the ISSP. *Social Science Quarterly* 84: 299–308.
- Giddens A (1984) *The Constitution of Society*. Polity Press, London.
- Glaser B & Strauss A (1967) *Discovery of Grounded Theory*. Aldine, Chicago.
- Graumann CF (2002) The Phenomenological Approach to People-Environment Studies. In: Bechtel RB & Churchman A (eds) *Handbook of environmental psychology*. John Wiley & Sons, Inc, New York.
- Haila, Y (1999) The north as/and the other. Ecology, domination, solidarity. In: Fischer F & Hajer M (eds) *Living with Nature*. Oxford University Press, Oxford, 42–57.
- Haila Y (2001) Johdanto: Mikä ympäristö? In: Haila Y & Jokinen P (toim) *Ympäristöpolitiikka. Mikä ympäristö, kenen politiikka*. Vastapaino, Tampere, 9–20.
- Hajer M (1995) *The Politics of Environmental Discourse. Ecological Modernisation and the Policy Process*. Oxford University Press, Guildford.
- Hajer M and Fischer F (1999) Introduction. In: Fischer F & Hajer M (eds) *Living with Nature*. Oxford University Press, Guildford.
- Hastrup K (1995) The inarticulate mind: the place of awareness in social action. In: Cohen P & Rapport N (eds) *Question of consciousness*. Routledge, London, 181–197.
- Hanhinen S (2001) *Social Problems in Transition. Perceptions of Influential Groups in Estonia, Russia and Finland*. Kikumora Publications Series A:5, Helsinki.
- Hobson K (2003) Thinking Habits into Action: the role of Knowledge and process in questioning household consumption practices. *Local Environment* 8: 95–112.
- Inglehart R (1977) *The Silent Revolution: Changing Values and Political Styles among Western Publics*. Princeton University Press, Princeton.
- Inglehart R (1985) New perspectives on value change: Responses to Lafferty and Knutsen, Savage, Boeltken and Jagodzinski. *Comparative Political Studies* 17: 485–532.
- Ingold T (1992) Culture and the perception of the environment. In: Parkin D & Croll E. (eds) *Bush base, forest farm: culture, environment and development*. Routledge, London, 39–56.
- Ingold T & Kurttila T (2000) Perceiving the Environment in Finnish Lapland. *Body & Society* 6: 183–196.
- Ingold T (2000) *The perception of the environment: Essays in livelihood, dwelling and skill*. Routledge, London.

- Jamison A (2001) *The making of green knowledge: environmental politics and cultural transformation*. Cambridge University Press New York, Cambridge.
- Järvikoski T & Kempainen T (1991) *Ammattiryhmät ja ympäristökysymys*. Oulun yliopisto, Kasvatustieteellisen tiedekunnan tutkimuksia, Oulu.
- Järvilehto T (2000) The theory of the organism-environment system: iv. The problem of mental activity and consciousness. *Integrative Physiological and Behavioral Science* 2000 35: 35–57.
- Kauppala P (1998) *The Russian North: the rise, evolution and current condition of state settlement policy*. Finnish Institute of Russian and East European Studies, Helsinki.
- Kivinen M (2002) *Progress and Chaos*. Kikimora Publications Series B:19, Helsinki.
- Kortelainen J & Kotilainen J (1994) *Ympäristön paikalliset tulkinnat. Ympäristötietoisuuden muutos tehdasyhdyskunnassa*. Joensuun yliopisto, Karjalan tutkimuslaitoksen julkaisuja N:o 109, Joensuu.
- Kovalev V (2001) *Politicheskaya transformatsiya v regione. Respublika Komi v kontekste rossijskikh preobrazovajij. Syktyvkar-skij gosudarstvennyj universitet, Syktyvkar*.
- Krotov, P (1998). *Simptomy "Gollandskoj Bolezni": Najdetsya Li Lekarstvo? Vozmozhosti Ekonomicheskoy Stabilizatsii Resursnogo Regiona*. In: Krotov P (ed) *Respublika Komi: Vlast', Biznes, Politika. Sotsiologicheskie Etudy*. Institut Regional'nykh Sotsial'nykh Issledovajij, Syktyvkar, 8–29.
- Kuhry, P [*et al.*] (2002) *Arctic feedbacks to global change*. In: Käyhkö J & Talve L (eds) *Understanding the Global System. The Finnish Perspective*. Finnish Global Change Research Programme FIGARE. Painosalama, Turku, 107–118.
- Kuliasova A & Kuliasov I (2002) *Local Case Study I: Sokol'skiy Pulp and Paper Mill*. In: Kortelainen J & Kotilainen J (eds) *Environmental Transformations in the Russian Forest Industry. Key Actors and Local Developments*. University of Joensuu, Publications of Karelian Institute, Joensuu, 85–96.
- Layder D (1998) *Sociological practice. Linking theory and social research*. Sage, London.
- Logrén, J (2002) *Ympäristötietoisuuden sosiaaliset ja kulttuuriset ehdot – tapaustutkimus Jaroslavl*. Pro gradu –tutkielma. Helsingin yliopisto, taloustieteen laitos.
- Lowe PD & Rudig W (1985) *Review article: political ecology and the social sciences – the state of the art*. *British Journal of Political Science* 16: 513–550.
- Massa I & Haverinen R (2001) *Arkielämän ympäristöpolitiikka*. Esitutkimus. Suomen ympäristö 521, Ympäristöministeriö, Helsinki.
- Massa I & Tynkkynen V-P (eds) (2001) *The struggle for Russian environmental policy*. Kikimora Publications Series B: 17, Helsinki.
- Macnaghten P & Urry J (1998) *Contested Natures*. Sage Publications, London.
- McAllister I & Studlar DT (1999) *Green versus Brown. Exploring Environmental Commitment in Australia*. *Social Science Quarterly* 80: 775–792.
- McCannon J (1998) *Red Arctic. Polar Exploration and the Myth of the North in the Soviet Union*. Oxford University Press, New York.
- McCormick J (1995) *Global Environmental Movement*. 2nd edition. Wiley, Chistester.
- Milton K (1996) *Environmentalism and Cultural Theory. Exploring the role of anthropology in environmental discourse*. Routledge, London.
- Mirovitskaja N (1998) *The environmental movement in the former Soviet Union*. In: Tickle A & Welsh I (eds) *Environment and Society in Eastern Europe*. Longman, Edinburgh, 30–66.
- Mol APJ (2001) *Globalization and environmental reform. The ecological modernization of the global economy*. The MIT Press, Cambridge, Mass.
- Morse JN & Richards L (2003) *Read me first for a user's guide to qualitative methods*. Sage Publications, Thousand Oaks (California).
- Pakulski J & Tranter B (2004) *Environmentalism and social differentiation*. *Journal of Sociology* 40: 221–235.

- Peterson DJ & Bielke EK (2001) The reorganization of Russia's environmental bureaucracy: implications and prospects. *Post-Soviet Geography and Economics* 42: 65–76.
- Pickvance K (1998) *Democracy and Environmental Movements in Eastern Europe. A Comparative Study of Hungary and Russia*. Westview Press, Boulder, Colorado.
- Poferl A, Schilling K & Brand K-W (1997) *Umweltbewusstsein und Alltagshandeln*. Leske + Budrich, Opladen.
- Rannikko P (1996) Local Environmental Conflicts and the Change in Environmental Consciousness. *Acta Sociologica* 39: 57–71.
- Rayner S (2006) What drives environmental policy? Editorial. *Global Environmental Change* 16: 4–6.
- Rautio V (2003) *The Potential for Community Restructuring. Mining Towns in Pechenga*. Kikumora Publications : Series A:9, Helsinki.
- Robertson R (1992) *Globalization: social theory and global culture*. Sage, London.
- Sachs, W (1999). Sustainable Development and the Crisis of Nature: On the Political Anatomy of an Oxymoron. In: Fischer F and Hajer M (eds.), *Living with Nature*. Oxford University Press, Oxford.
- Shanahan J, Pelstring L & McComas K (1999) Using Narratives to Think About Environmental Attitude and Behavior: An Exploratory Study. *Society & Natural Resources* 12: 405–419.
- Sairinen R (1996) *Suomalaiset ja ympäristöpolitiikka*. Tilastokeskus, tutkimuksia 217. Edita, Helsinki.
- Sairinen R (2000) *Regulatory Reform of Finnish Environmental Policy*. Centre for Urban and Regional Studies Publications, Helsinki University of Technology, Espoo.
- Spaargaren G (1997) *The Ecological Modernisation of Production and Consumption*. Essays in Environmental Sociology. PhD Thesis Landbouwwuniversiteit Wageningen (University of Waningen).
- Stern P, Young D & Druckman (eds) (1992) *Global environmental change: understanding the human dimensions*. National Academy Press, Washington DC.
- Sterngold AH & Herrmann RO (1994) Do Surveys Overstate Public Concern. *Public Opinion Quarterly* 58: 255–263.
- Tynkkynen N (2005) "Vapauden nurkassa?" Pietarin ympäristöjärjestöt ja luottamuksen merkitys toimintatilan rakentumisessa. ("A corner of freedom"? Environmental NGOs in St. Petersburg and the significance of trust.). *Alue ja ympäristö* 34: 3–14.
- Tysiachniouk M & Reisman J (2003) Transnational Organisations and the Russian Forest Sector. In: Kortelainen J & Kotilainen J (eds) *Environmental Transformations in the Russian Forest Industry. Key Actors and Local Developments*. University of Joensuu, Publications of Karelian Institute, Joensuu.
- UNDN (2005) *Human Development Report for the Russian Federation 2005*. The United Nations Development Programme. Cited April 16th 2006 from http://hdr.undp.org/docs/reports/national/RUS_Russian_Federation/Russian_Federation_2005_en.pdf
- Weiner DR (1999) *A Little Corner of Freedom: Russian Nature Protection from Stalin to Gorbatsov*. University of California Press, Berkeley (Calif.).
- Weiner DR (2000) Environmental Issues in Eastern Europe and Eurasia. *A Look at Recent Scholarship*. NewsNet. The Newsletter of the AAASS, 40: 1–8.
- Yearley S (1996) *Sociology, environmentalism, globalization: reinventing the globe*. Sage, London.
- Yanitsky O (2000) *Russian Greens within a Risk Society: A Structural Analysis*. Kikumora Publications. Series B:11, Helsinki.
- Ziegler CE (1987) *Environmental policy in the USSR*. Frances printer, London.
- Åhlander, AMS (1994) *Environmental Problems in the Shortage Economy. The legacy of the Soviet Environmental Policy*. Edward Elgar, Aldershot.

Appendices

Appendix 1 Interview questions in English

TUNDRA project

I NATURE AND LIVING ENVIRONMENT

A1 How many years have you lived in these surroundings?

- From where did you move, why and when?

A2. How do you enjoy your living in this environment?

- What things do you like?

- What things do you not like?

- Have you planned to migrate?

A3. What would an ideal living environment (where you would like to live) be like?

- City or countryside?

- Near to waters?

- Residence?

- Weather and vegetation ?

- Do you want to live in near contact to nature ?

A4. What does the surrounding nature mean to you?

- Possible extra questions: how is the nature related to work and hobbies (outdoor activities, hiking, fishing, berry picking etc.)?

A5. In the northern Komi natural resources are utilized in many ways. What do you think, are all these ways acceptable ?

II THREATS AND PROBLEMS IN SOCIAL AND NATURAL ENVIRONMENT _____

B1. What are the worst problems which threaten you at present?

The following points can be mentioned and ask the interviewee to comment, if these are not spontaneously mentioned:

Is any of these threatening to you:

- unemployment
- livelihood and economic problems
- dwelling problems
- health situation
- family relations
- environmental problems
- criminality
- something else ?

B2. Are there environmental problems in your neighbourhood or your part of the city?

- What are they?
- How do they affect your life or the environmental conditions?
- What are the causes of these environmental problems?

B3. Has the state of environment changed during the time you have lived in this area ?

- How – has it got better or worse ?
- Has it affected your life or your thriving in this area?

B4. What do the following concepts mean, in your opinion ? Describe with your own words.
(Can you notice these phenomena in your living environment?)

1. global warming
2. the ozone gap
3. acidification of waters or soil
4. desertification
5. waste problem
6. exploitation of natural resources
7. pollution of water courses or ground water
8. air pollution
9. biodiversity

B5. Where do you personally get information about environmental matters?

A. Media:

1. TV

2. radio
3. local papers
4. regional and nation-wide newspapers
5. journals, magazines

- B. Discussions with other people
- C. Working place / professional or technical literature or journals
- D. Environmental authorities
- F. The training arranged by the employer
- G. Civic organizations
- H. Scientific literature, non-fiction
- E. Other sources, which?

B6. When we consider environmental problems from the global point of view, which of the following conceptions describes best the situation of Northern Komi in relation to these problems?

Northern Komi is a

1. victim
 2. originator
 3. politically influent in controlling the problems
- how do you justify your opinion?

III SOLVING ENVIRONMENTAL PROBLEMS

C1. How do you think the environment will change during the next 10 years if the utilization and protection of the environment will be constant (continue in the same manner as today)?

C2. Can you personally contribute anything towards protecting the environment?

- What do you do, to be concrete?

C3. What is, in your opinion, the most important means in order to save the environment?

- on the local level
- on the national level (is the interviewee aware of local and national environmental programs or plans, etc ?
- on the global level

Appendix 2 Interview questions in Russian

Б. Социально – экологические проблемы и угрозы

Б1	<p>Какие социально-экономические проблемы Вы считаете наиболее важными? (Отметьте, пожалуйста, не более трех вариантов ответа)</p>	<p><i>Занятость</i> Уровень доходов и материальной обеспеченности <i>Жилищные условия</i> <i>Состояние дворов и подъездов</i> <i>Состояние здоровья</i> <i>Этнические отношения</i> Семейные отношения <i>Экологические проблемы</i> <i>Преступность</i> <i>Экономические проблемы</i> <i>Другие</i></p> <p><i>Объясните, почему Вы выбрали именно эти проблемы</i></p>	2
Б2	<p>Есть ли в месте Вашего проживания проблемы с состоянием окружающей среды?</p>	<p>Вода, воздух, грибы, ягоды, рыба, другие показатели, характеризующие состояние среды <i>Какие это проблемы, что стало их причиной, какое влияние эти проблемы оказывают на Вашу жизнь?</i></p>	
Б3	<p>Изменилось ли состояние окружающей среды с момента, когда Вы начали жить в данном месте?</p>	<p><i>Изменилось в худшую сторону</i> <i>Изменилось в лучшую сторону</i> <i>По каким параметрам, по какой причине, как это повлияло на Вашу жизнь здесь в Усинске / Воркуте / Сыктывкаре</i> - <i>Никак не изменилось</i></p>	
Б4	<p>Как Вы думаете, состояние природной среды в месте Вашего проживания лучше, чем в других районах Республики Коми? Чем в других районах России?</p>		
Б5	<p>Пожалуйста скажите, что по Вашему означают понятия:</p>	<p>Парниковый эффект Озоновая дыра Кислотные дожди Опустынивание Проблемы отходов Истощение природных ресурсов (лесных, рыбных, пушных, ...) Загрязнение поверхностных и подземных вод Загрязнение атмосферы Уменьшение биоразнообразия</p>	
Б6	<p>Как Вы думаете, какие глобальные экологические проблемы существуют в месте Вашего проживания ?</p>	<p><i>Выберите из 9 перечисленных</i></p>	
Б7	<p>Как Вы думаете, северные районы Республики Коми по отношению к глобальным экологическим проблемам являются их жертвой ? их причиной? участниками формирования политики по контролю за этими проблемами?</p>	<p><i>Объясните, почему вы так считаете.</i></p>	
Б8	<p>Из каких источников Вы лично получаете знания об экологических проблемах?</p>	<p><i>1. В соответствии с собственными наблюдениями и впечатлениями</i> <i>2. Из средств массовой информации</i> <i>Телевизор</i> <i>Радио</i> <i>Местные газеты</i> <i>Республиканские газеты и журналы</i> <i>Центральные газеты и журналы</i> <i>3. В беседах с друзьями и знакомыми</i> <i>4. На работе.</i> <i>5. Из других источников</i></p>	

В. Решение экологических проблем

В1	<p>Как по Вашему изменится состояние окружающей среды в месте вашего проживания за 10 лет, если вопросы использования природных ресурсов и их охраны будут решаться так же, как и сейчас?</p>	<p><i>Изменится в худшую сторону Изменится в лучшую сторону По каким параметрам, по какой причине, как это повлияет на Вашу жизнь здесь в Усинске / Воркуте / Сыктывкаре Никак не изменится</i></p>	
В2	<p>Можете ли Вы сами что-то делать для охраны природы?</p>	<p><i>Что Вы делаете для защиты природы и распространения знаний об окружающей среде и ее защите? Этот пункт особенно важно раскрыть для учителей, специалистов: что у них делается в школе, на предприятии, в городе...</i></p>	
В3	<p>Что с Вашей точки зрения важнее для решения существующих в месте Вашего проживания экологических проблем?</p>	<p><i>На местном уровне (применение высоких технологий на предприятиях и соблюдение ими экологических нормативов; контроль со стороны местной власти; экологическое движение; отдельные люди, экологическое образование) На уровне государства Сопоставление разных мнений, если это человек, проявивший себя в обсуждении и решении экологических проблем города, района</i></p>	

ACTA UNIVERSITATIS OULUENSIS
SERIES E SCIENTIAE RERUM SOCIALIUM

69. Pikkarainen, Eetu (2004) Merkityksen ongelma kasvatustieteessä. Lähtökohtia pedagogisen toiminnan perusrakenteen semioottiseen analyysiin
70. Kaaresvirta, Päivi (2004) Oppiminen työelämäprojekteissa. Ammattikorkeakoulun sosiaali- ja terveysalan opiskelijoiden kokemukset työelämäprojekteissa oppimisesta
71. Kronqvist, Eeva-Liisa (2004) Mitä lapsiryhmässä tapahtuu?. Pienten lasten yhteistoiminta, sen rakentuminen ja kehittyminen spontaaneissa leikki-tilanteissa
72. Kuurme, Tiiu (2004) Koulun sivistystehtävä ja oppilaan koulutodellisuus
73. Juntunen, Marja-Leena (2004) Embodiment in Dalcroze Eurhythmics
74. Saarenkunnas, Maarit (2004) Multidimensional participation in polycontextual computer-supported language learning
75. Kumpulainen, Kari (2004) Bittinikkarin muotokuva. Tietokoneet harrastuksena ja siihen yhteydessä olevia tekijöitä
76. Tiilikka, Aila (2005) Äitien kasvatuskäsityksiä ja arviointeja hyvästä päiväkotikasvatuksesta
77. Karppinen, Seppo J. A. (2005) Seikkailullinen vuosi haastavassa luokassa. Etnografinen toimintatutkimus seikkailu- ja elämyspedagogiikasta
78. Salovaara, Hanna (2005) Achievement goals and cognitive learning strategies in dynamic contexts of learning
79. Erkkilä, Raija (2005) Moniääninen paikka—Opettajien kertomuksia elämästä ja koulutyöstä Lapissa
80. Lasse Jalonen, Tapio Keranto ja Kari Kaila (toim.) (2005) Matematiikan ja luonnontieteiden opetuksen tutkimuspäivät Oulussa 25.–26.11.2004. Matemaattisten aineiden opettajan taitotieto—haaste vai mahdollisuus?
81. Salakka, Markku (2006) Suomeen palaavien lähetystyöntekijöiden paluuta koskevat puheet. Paluusokki ja identiteetin monikulttuuriset jännitteet
82. Pennanen, Aatto (2006) Peruskoulun johtaminen. Modernista kohti transmodernia johtamista
83. Lindh, Matti (2006) Teknologiseen yleissivistykseen kasvattamisesta – teknologian oppimisen struktuuri ja sen soveltaminen
84. Saari, Mikko (2006) Kielikylpyopetuksen kulttuuripedagoginen perusta

Book orders:
OULU UNIVERSITY PRESS
P.O. Box 8200, FI-90014
University of Oulu, Finland

Distributed by
OULU UNIVERSITY LIBRARY
P.O. Box 7500, FI-90014
University of Oulu, Finland

S E R I E S E D I T O R S

A
SCIENTIAE RERUM NATURALIUM

Professor Mikko Siponen

B
HUMANIORA

Professor Harri Mantila

C
TECHNICA

Professor Juha Kostamovaara

D
MEDICA

Professor Olli Vuolteenaho

E
SCIENTIAE RERUM SOCIALIUM

Senior Assistant Timo Latomaa

E
SCRIPTA ACADEMICA

Communications Officer Elna Stjerna

G
OECONOMICA

Senior Lecturer Seppo Eriksson

EDITOR IN CHIEF

Professor Olli Vuolteenaho

EDITORIAL SECRETARY

Publication Editor Kirsti Nurkkala

ISBN 951-42-8249-3 (Paperback)

ISBN 951-42-8250-7 (PDF)

ISSN 0355-323X (Print)

ISSN 1796-2242 (Online)

