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Text, Place and Mobility

Investigations of Outdoor Education, Ecocriticism and Environmental Meaning Making

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Abstract

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The overall ambition of this thesis is to investigate the approaches taken to environmental and sustainability education in outdoor education and ecocriticism in a Swedish and in an international context, to investigate environmental meaning making and to conduce to the development of analytical methods for empirical investigations of environmental meaning making. Four objectives are formulated.

The first objective of the thesis is to analyse constitutive discursive rules and traits regarding environmental and sustainability education and environmental meaning making in outdoor education in a Swedish context and in ecocriticism. This is achieved through discourse analyses of central textbooks in outdoor education and of research and textbooks in ecocriticism.

The second objective is to investigate how different situated circumstances such as, text, place, mobility, social situations and previous experiences interplay in environmental meaning making. This is achieved through analyses of classroom communication, through analysis of nature writing and through an analysis of painted landscapes.

The third objective is to compare and critically discuss the constitutive discursive rules and traits within the two investigated educational practices -– out door education and ecocriticism -– in the light of the results from the investigations of environmental meaning making carried out.

The fourth objective is to develop analytical methods based on John Dewey and Louise Rosenblatt's theories of transaction and meaning making for conducting empirical investigations of environmental meaning making in which different interplaying situational circumstances are taken into account.

The results of the thesis show that taking a transactional starting point to investigate environmental meaning making adds further understanding of the situational circumstances influencing environmental meaning making in specific situations which sheds new light to the identified approaches to environmental and sustainability education in outdoor education and ecocriticism. These results suggest that a transactional approach to environmental and sustainability education can help to clarify taken for granted assumptions regarding the nature of situational circumstances such as text, place and mobility in environmental meaning making.

Keywords: Pragmatism, text analysis, environmental meaning making, outdoor education, Ecocriticism

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To Sallie

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List of Papers

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

I.   Hansson, P., Öhman, J., Östman, L. (submitted) "Reading the Outdoors an Analysis of the Swedish Outdoor Environmental and Sustainability Education Discourse Practice." *Environmental Education Research*.

II.   Hansson, P. (2009) "Readings for Climate Change: Ecocriticism and Climate Change Education Research." *Southern African Journal of Environmental Education*, 26.

III.   Hansson, P., af Geijerstam, Å., Östman, L. (submitted) "Reading *Walden/s*. "An Ecocritical Investigation of Students' Environmental Meaning Making." *Environmental Education Research*.

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Contents

Introduction

> I went to the woods because I wished to live deliberately, to front only the essential facts of life, and see if I could not learn what it had to teach, and not, when I came to die, discover that I had not lived.

> Henry David Thoreau, *Walden* (1854)

In 1854, Henry David Thoreau wrote *Walden* from which the above quote is chosen. Many years later, Richard Louv, the writer of the book *The last child in the woods saving our children from nature deficiency disorder* (2008, 10) expressed almost the same idea about nature as a source of life: "The woods were my Ritalin. Nature calmed me, focused me, and yet excited my senses." Louv's book can be read as a response to the idea that children are separated from nature in present everyday culture and as an argument for a reunion of children and nature. Even though the idea of the loss of nature has reached new levels and can perhaps be perceived as more striking in the current digital era, the idea of nature as a place to return to for inspiration and as a refuge is far from new, but goes back to the Romantic Era. Thus, although Thoreau's and Louv's expressions are responses and reactions to different eras, the idea of nature as some sort of rescue seems to still prevail. Many argue that our relationship with nature is one of the most important issues to discuss in this century, and give it high priority in a time of pressing environmental and sustainability challenges in a global, technological and mobile world (Henderson and Vikander 2007). For example, in the first sentence of *Retrieving Nature Education for a Post-Humanist Age*, Bonnett (2004, 1) argues "At this stage in history it is difficult to identify an issue of greater importance for humankind than its relationship with its environment, nor one that is more fraught. It must be a unique phenomenon – on Earth at least – for a species to be contemplating the possibility of its self distinction."

The ways in which we dwell in a global world and the possible ways in which we can move across the world either by means of physical machines such as trains, cars and bicycles or via Google Earth put the human-nature relationship into a new light. New technology makes it possible to visit remote areas that most of us will probably never encounter physically, and allows us to observe and discover things in ways that do not involve physical

contact. This creates possibilities for experiencing such things as the thinning of the ozone layer and the melting of the ice in the Arctic through computer screens and smart phones. However, not everybody regards such ways of encountering and perceiving nature through technological artefacts as positive. For example, Louv (2008, 3) views new technologies as "blurring the lines between humans, other animals and machines", and as such dragging us farther and farther away from nature and from the actual places we inhabit. In Bowers (1997) terminology, present day culture is estranging us from our natural places making us 'displaced'. Furthermore, Sanders (1996, 189) uses the metaphor 'nature appears framed in a window' in his discussion of the same phenomenon, and expresses great concern for present-day humans' loss of contact and feeling for nature.

These issues are also central questions in educational responses to present-day environmental and sustainability challenges and have been discussed within environmental and sustainability education (ESE) and other related educational fields such as outdoor education and ecocriticism since the establishment of these fields. In relation to the educational challenges that environmental and sustainability related issues pose, this thesis aims to investigate the approach taken to environmental and sustainability education adopted in outdoor education and ecocriticism, with a particular focus on the constitution of human-nature relationships and how different circumstances such as text, place and mobility interplay in environmental meaning making.

The Policy Discourse and its Responses

International organisations such as the UN have played and still play a key role in discussions about the role of education in addressing environmental and sustainability subject matters. Furthermore, international policymaking has played a central role in the shift from environmental education to education for sustainable development. The concept 'sustainable development' had its international breakthrough in the report *Our Common Future* (WCED 1987) and includes the definition of sustainable development as a development that "meets the needs of the present without compromising the ability of future generations to meet their own needs". The launch of this concept has brought various educational debates to the fore concerning how environmental and sustainability issues are to be approached and treated in education. In the following, some of these debatable issues are presented.

In general, policy level initiatives have considered education as an important instrument for promoting sustainable development. An important source of inspiration for the advance of Swedish environmental education was the global United Nations Conference on the Human Environment, held in

Stockholm in 1972 (Öhman 2011, 4), when for the first time environmental, development and educational issues were brought together. Indeed, this meeting can be regarded as the first recognition of the importance of education as a response to environmental and development challenges. At the first intergovernmental conference on environmental education organised by UNESCO and UNEP in 1977, environmental education was firmly acknowledged as playing an important role in "the preservation and improvement of the world's environment, as well as in the sound and balanced development of the world's communities" (The Tblisi Declaration 1977,13). As such, the Tblisi Declaration includes the first specifications of goals, objectives and guiding principles for environmental education. The shift from 'environmental education' to 'education for sustainable development' is connected to a general shift in interest from a focus on 'environment' to a focus on 'sustainable development'. Since the launch of the concept 'sustainable development' in the report *Our Common Future* (WCED 1987), later policy documents, such as the action plan from the World Conference on Environment and Development in Rio de Janeiro in 1992, Agenda 21 (UNCED 1992), the implementation plan of the 2002 World Summit on Sustainable Development in Johannesburg (United Nations 2002a), and the Decade for Education for Sustainable Development (DESD) launched by the UN General Assembly in 2005, constitute 'sustainable development' as the key goal for education. For example, the DESD declaration emphasises that we have to "learn our way out of current social and environmental problems and learn to live sustainably" (United Nations 2002). Accordingly, education for sustainable development broadens the educational focus from ecological and environmental dimensions to social, ecological and economic dimensions. As such it also broadens the scope, purposes and content of an education that will meet present-day as well as future environmental and sustainability challenges. As noted by Jickling and Wals (2008, 4, 2013, 78) the DESD resolution pays astonishingly little attention to concepts that previously were central for environmental education, such as 'environment', 'environmental' and 'ecological'.

What is more, with this shift in focus, education is given an emphasised moral and ethical dimension, thus acknowledging that sustainable development requires a shift in moral outlook and an ethical re-orientation in order to be achieved. The ethical dimension is clearly expressed in the World Summit on Sustainable Development in Johannesburg (United Nations 2002a, 11).

> The movement towards sustainable development depends more on the development of our moral sensitivities than on the growth of our scientific understanding – important as that is […]. Ethical values are the principal factors in social cohesion and, at the same time, the most effective agent of change and

transformation. Ultimately sustainability will depend on changes in behaviour and lifestyles, changes which will need to be motivated by a shift in values and rooted in the cultural and moral precepts upon which behaviour is based. Without change of this kind, even the most enlightened legislation, the cleanest technology, the most sophisticated research will not succeed in steering society towards the long-term goal of sustainability.

Here, the implication is that scientific education is insufficient in order to produce the intended goals of sustainable development. In turn, this has led to an interest in approaching environmental and sustainability issues from a wider perspective of the humanities and social sciences; fields that have not traditionally been involved in environmental and sustainability issues that were previously primarily treated in science education (Mayer and Wilson 2006).

International educational policy initiatives have been unanimous to shift the focus from environmental education to education for sustainable development as the overarching aim of educational responses to environmental and sustainability challenges (Jickling 1992; Jickling and Spork 1998; Jickling and Wals 2008). What becomes clear in reading through the policy documents is a view of education as a means towards a predetermined and specific aim – sustainable development (Jickling and Wals 2013, 77) which gives both education and sustainable development particular predetermined and normative characteristics. What is more, the policy recommendations tend to treat both 'education' and 'sustainable development' as unproblematic value neutral concepts rather than contested and value laden, which some scholars find problematic (Jickling and Wals 2008, 1). Consequently, views about how environmental and sustainability issues are to be treated in education, have led to various debates related to the normative and ethical dimension of environmental and sustainability education. Thus, how the reorientation from environmental education to education for sustainable development has been received has varied from comfort to worry (Hesselink et al. 2000; Jickling and Wals 2008). What becomes clear is that the launch of education for sustainable development has produced debates concerning the relationship between education and environmental advocacy, and has engaged environmental and sustainability education scholars in philosophical and ideological discussions about the role, purposes of and the nature of education in general and of education and sustainable development in particular (Jickling 2003). In the following, some of these discussions are outlined in more depth.

First, the meanings associated with the concept of 'sustainable development' have been criticised as being indeterminable. For example, Scott (2005) claims that it is important to establish the meaning of the concept before it is possible to discuss the implementation of an education for sustainable devel-

opment. One further problematic issue concerns the rhetoric of phrases such as 'sustainable development' in which opposing public interests are merged together into one term in order to reach some sort of consensus about something as intrinsically good. Regarding the phrase 'sustainable development', despite all the good intentions, Stables (2002, 55) argues that it is difficult to achieve consensus on the meaning of the term and how it will be transformed in to teaching practices. What is even more problematic is how ESE will be structured in order to affect students' environmental behaviour.

Second, critics of the policy discourse's promotion of the concept 'sustainable' development have expressed doubts about the political ideological messages conveyed in the concept. Sauvé (1999) argues that the sustainability policy discourse supports the idea of 'the modern project', which many consider to be the main cause of the current environmental crisis since the environment is perceived as a "resource for economic development or shared resource for sustainable living" (Sauve 2005, 34). Thus, these critics also criticise the present liberal democracy policy discourse and view the relationship between capitalism and consumption and sustainable development as in conflict. From such a point of view, the policy discourse of environmental and sustainability education is regarded as supporting globalising ideologies and as supporting an educational situation that is in the hands of international organisations promoting a neo-liberal market ideology. For example, Bonnett (2004, 2) argues:

> There are grounds for suspicion that the kind of environmental education supported by current policy may be largely cosmetic when measured against the depth and complexity of the issues at stake. For example, the political consequences of certain interpretations of our environmental problems are highly uncongenial of consumerist market orientated economies and on these views their long-term resolution will require a radical overhaul of such systems.

From such a viewpoint, the change in policy descriptions from more holistic perceptions of the environment embedded in the concept of 'environmental education' to the more human centred perspectives embedded in the concept of 'education for sustainable development', or 'sustainability education' is viewed as an inadequate educational approach and response to environmental and sustainability issues. Accordingly, from this perspective, more radical changes than those suggested by the policy approach are considered necessary. Thus, ESE should have other purposes. For example, Bonnett (2013, 91) argues "the ultimate concern [of an educational response to current environmental issues] must be with understanding our place in the cosmos and the proper character of our participation in it, particularly in its natural dimension" which suggests a different approach than that promoted in the policy documents.

Third, one educational philosophical concern has been the question of whether education should serve the purpose of educating for an already specified and defined aim that is moral and ethical in nature or whether such an approach violates basic democratic principles of education. For example, due to the normative nature embedded in the concept of 'sustainable development', educational approaches based on normative claims have been criticised by scholars due to the inconsistency between the normative implications of education *for* sustainable development and basic democratic principles of education (Jickling 1992, 1994, 2001, 2003; Jickling and Spork 1998, Wals and Jickling 2002). This is vividly expressed by Jickling (1994, 6):

> As we have seen in the earlier analysis, education is concerned with enabling people to think for themselves. Education for sustainable development, education for deep ecology (Drengson, 1991), or education "for" anything else is inconsistent with that criterion. In all cases these phrases suggests a predetermined mode of thinking to which the pupil is expected to prescribe. Clearly, I would not want my children to be taught sustainable development. The very idea is contrary to the spirit of education. I would rather have my children educated than conditioned to believe that sustainable development constitutes a constellation of correct environmental views or that hidden beneath its current obscurity lies an environmental panacea.

In order to avoid such ethical directions for education, a post foundational approach has been discussed in terms of a pluralistic approach to ESE (Scott 2002; Stables and Scott 2002; Gough and Scott 2007; Læssøe and Öhman 2010; Reid and Scott 2006; Stevenson 2006; Wals and Jickling 2000; Jickling and Spork 1998; Öhman 2004, 2006). In a pluralistic approach, the importance of including a variety of opinions regarding the causes of and solutions to environmental and sustainability problems and critically discussing them in the classrooms is emphasised. Thus, this creates an educational situation in which the teaching centres on reconsidering a plurality of perspectives, including the students valuations, rather than advancing a predetermined perspective defined by experts. As a response to pluralistic approaches, some scholars have claimed that the pressing challenges of the 'environmental crisis' require something more than pluralism. Such critique is heard from those who argue for ecologically and ecocentric focused approaches to ESE. These advocates claim that the dominating approaches to environmental and sustainability education maintain anthropocentric views of nature that are more concerned with people than the environment and therefore neglect more ecocentric approaches (Bonnett 1999, 2007, 2013; Kopnina 2012).

Furthermore, and in relation to the question of how humans relate to non-human environments in the present global era, the concept of place has emerged in order to locate environmental and sustainability education more firmly to particular places and as a circumstance in environmental meaning

making. In these respects, a place approach to ESE addresses the question of where environmental and sustainability education should take place. Place is discussed in the contexts of outdoor education (Wattchow 2008), ecocriticism and literature (Buell et. al. 2011) as well as in environmental and sustainability education contexts (Greenwood 2013; Brandt 2013; Smith, 2013).

That education is inherently value laden, normative and context dependent is nothing new and so is also environmental and sustainability education (Fien 2000; Jickling and Spork 1998; Stewart 2008, 80). However, how to relate to this in education concerning environmental and sustainability issues is complex. Jickling and Wals (2008, 12) warn that education that rests on the principle of transmission "is essentially 'un-educative' at best and 'mis-educative' at worse. After all, from a transformative perspective education is more about teaching students how to think than what to think." From such a perspective, the conception of education as socialisation into predetermined values and perspectives on the causes of environmental and sustainability problems and its solutions, and how such problems should be treated in education become problematic. On the other hand, one could argue, that if the earth and its humans are severely threatened, a normative approach is perhaps what is needed for future survival. From such a point of view, a normative educational approach is perhaps necessary in order to address the challenges we are facing. Such an approach also shows a close relation between education and reorientation of dominating cultural and societal values.

These different ways of conceptualising environmental and sustainability education are relevant set in relation to the two educational practices, outdoor education and ecocriticism, investigated in this thesis and motivates environmental and sustainability education research that aims at elucidating normative aspects of education and to unravel underpinning ideologies and values regarding education, the environment and sustainable development (Öhman 2006; Östman 2010). In accordance, in this thesis, the specific views of education and sustainable development underpinning the policy discourse, and the critical voices against it, are regarded as intermingling discourses of environmental and sustainability education and here serves as points of reference in relation to which the analyses of the educational practices of outdoor education and ecocriticism undertaken in this thesis.

Outdoor education and ecocriticism share the idea that the natural environment is a relevant institutionally constituted circumstance for environmental and sustainability education, for environmental meaning making and for fostering environmental concern which means that both outdoor education and ecocriticism include encountering nature as an imperative aim for enhancing environmental meaning making and sustainable development. The purpose of encountering nature is often related to stimulating a relation to

and with the natural environment and to fostering environmental concern. As Garrard (2010, 234) claims: "The idea of 'contact' – of what might be at least relatively unmediated experience of nature, and of its inherent pedagogical value– is frequently emphasized in both ecocriticism and outdoor education". Accordingly, the attention to nature, place and the relationship between nature experience and the development of environmental concern are crucial issues that have attracted attention in both ecocritical, outdoor education and environmental and sustainability education research (Garrard 2010, 235). However, the two practices diverge when it comes to the mode in which 'nature' is commonly encountered in everyday educational practice. The focus of ecocritical education is the reading of texts which means that the students encounter nature in texts, and the focus of outdoor education is outdoor activities which means that the students encounter nature 'physically'. In relation to this, there are reasons to empirically and theoretically investigate the role given to both nature and text as situated circumstances in environmental and sustainability meaning making in outdoor education and ecocriticism as well as in environmental meaning making. As nature writing, or environmentally situated texts, is a prioritised subject content in ecocriticism, and physical outdoor nature is a prioritised subject content in outdoor education, these educational practices are interesting to investigate since they share the educational value of nature but offer different modes through which nature is encountered in every day teaching practice.

The studies carried out in this thesis depart from a view of meaning making as situated (Lave 1988; Rogoff 1995; Cole 1996). In this tradition, situational circumstances such as participants, social communication and subject content, such as texts or nature, are viewed as mutually constitutive in meaning making. Rogoff (1995, 139-141) acknowledges the need to merge together different dimensions of meaning making in educational investigations on meaning making and claims that:

> Even when both the individual and the environment are considered, they are often regarded as separate entities rather than being mutually defined and interdependent in ways that preclude their separation as units or elements... Without an understanding of such mutually constituting processes, a sociocultural approach is at times assimilated to other approaches that examine only part of the package.

Hence, a transactional view of humans and environments as mutually constitutive is a central theoretical starting point for the investigations carried out in this thesis. Thus, all studies aim to increase understanding of how different circumstances work together and influence environmental meaning making. One ambition has been to give voice to the educational practices that are investigated and to give voice to the situational aspects that are involved in

environmental meaning making. This means that the studies carried out in this thesis do not depart from any specific definition on what nature is or which role nature should have, or from how education should view human nature relationships in order to be an adequate response to environmental and sustainability challenges. Rather, the focus is to empirically investigate how situational circumstances such as nature, text and previous experiences are viewed in outdoor education and ecocriticism and how these circumstances intermingle in and influence environmental meaning making.[1]

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[1] This thesis is part of the research project: "Encounters with nature and environmental moral learning – a multidisciplinary study of educational practice for sustainable development in the perspective of environmental education, ethics and environmental history" led by Professor Leif Östman, Uppsala University. The overall objectives of the research project are to investigate didactic possibilities for the development of educational practices that are relevant for education for sustainable development and to investigate prerequisites for environmental moral learning. Furthermore, the thesis has been influenced by the work undertaken within the research group Studies of Meaning Making in Educational Discourses (SMED) in which a transactional approach, based on pragmatist philosophy, to the investigation of meaning making and learning has been developed.

Aim and Objectives

The overall ambition of this thesis is to investigate the approaches taken to environmental and sustainability education in outdoor education and ecocriticism in a Swedish and in an international context, to investigate environmental meaning making and to conduce to the development of analytical methods for empirical investigations of environmental meaning making. Four objectives are formulated.

The first objective of the thesis is to analyse constitutive discursive rules and traits regarding environmental and sustainability education and meaning making within outdoor education in a Swedish context and ecocriticism. This is achieved through discourse analyses of central textbooks in outdoor education and of research and textbooks in ecocriticism (Paper I; *Reading the Outdoors – An Analysis of the Swedish Outdoor Environmental and Sustainability Education Discourse Practice*, Paper II; *Readings for Climate Change: Ecocriticism* and *Climate Change Education Research* Paper III; *Reading Walden/s. An Ecocritical Investigation of Students' Environmental Meaning Making*[2].

The second objective is to investigate how different situated circumstances such as mobility, text, social situations and previous experiences interplay in environmental meaning making. This is achieved through analyses of classroom communication, through analyses of nature writing and through an analysis of painted landscapes (Paper III, Paper IV; *Encountering Nature on the Move. A Transactional Analysis of Jenny Diski's Travelogue Daydreaming and Smoking around America with Interruptions* and Paper V; *The true Story of Climate Change? Aesthetic and Efferent Readings of Hardy Brix' Painted Landscapes*).

The third objective is to compare and critically discuss the constitutive discursive rules and traits within the two investigated educational practices –

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[2] The discourse analysis of outdoor education is more thorough than that of ecocriticism. The reasons for this are first that Outdoor education is a more established field in Sweden compared to ecocriticism and there are not any textbooks concerning ecocriticism and teaching on the courselists of ecocritical courses in Sweden. The ecocritical textbooks that cover pedagogical aspects are accounted for in the section on ecocriticism in the summarising chapter of this compilation thesis.

out door education and ecocriticism – in the light of the results from the investigations of environmental meaning making carried out. This is achieved in the introductory part of the thesis.

The fourth objective is to develop analytical methods based on John Dewey and Louise Rosenblatt's theories of transaction and meaning making for conducting empirical investigations of environmental meaning making in which different interplaying situational circumstances are taken into account. (Paper III and Paper IV)

Previous Research

Introduction

This chapter introduces the ESE–research that is relevant for this thesis. The research review has a particular focus on research related to the role of situational circumstances such as place, literature, nature, experience and mobility and in that way reflects the main thrust of the thesis. Furthermore, the chapter outlines how different approaches to environmental and sustainability education view environmental meaning making, the roles assigned to different circumstances in environmental meaning making within these approaches and how the approaches are positioned in relation to present day environmental and sustainability challenges. The different approaches and the diverging opinions and suggestions regarding environmental and sustainability education, meaning making and learning presented in the introductory chapter to a large extent mark the research field. These conflicting opinions have given rise to different normative views of how education should respond to contemporary environmental and sustainability challenges, for example which experiences ESE should offer, which experiences are considered valuable and what the role of the 'environment' and 'nature' should be in ESE. What has caught my attention is that many discussions depart from an 'either-or' point of view, thus ending up in a never ending story about which road education should take and which environmental meaning making and learning is required in order to be a viable response to present day environmental and sustainability challenges. One characteristic trait of the ESE field is thus to come up with 'alternative' approaches as counter-reactions to past or other approaches. As such, many ESE discussions are constituted through dualisms, arguing for example for 'more environment' and 'less pluralism', 'more sense experience' and 'less rational thinking' or for more 'body' and less 'mind'. The investigations carried out in this thesis have other purposes than arguing for a particular position or a particular approach. Rather, the studies investigate the constitution of ideas, values and perspectives of ESE in outdoor education and ecocriticism and critically discuss these different value positions in the light of the empirical investigations of environmental meaning making carried out and the circumstances that influence environmental meaning making. In the light of this introduction, the different ESE-approaches, research approaches and characteristic traits are discussed below.

Environmental and Sustainability Education Research

The changing behaviour approach

Chawla (2006, 359) describes environmental education[3] as always having "two sides: one that emphasizes scientific knowledge and technical or managerial solutions to environmental problems; and another that seeks to instil a sense of care and responsibility for the earth among the general population". Furthermore, drawing on Hungerford and Volk's (1990) review of research of responsible environmental citizenship, she claims that there is no conflict between these two sides and argues that knowledge about issues and feelings and motivation for issues are equally important for enhancing environmental action. Since the 1990s, there has been an increase in the diversity of research approaches to ESE responding to these two sides such as interpretive, critical research methods, postmodern and poststructuralist research (Gough 2013, 17). However, in Rickinson's (2001) review of environmental education research, it is stated that most research before 2000 focused on knowledge, attitudes and behaviour and was carried out in a positivist tradition. Furthermore, these investigations focused on interventions rather than every day educational practice (Rickinson 2006). Accordingly, the positivist, behaviourist and quantitative methodologies that dominated environmental and sustainability research before 2000 focused on investigations into students' knowledge and behaviour (Robottom and Hart 1995). In line with this, environmental education was at the time organised around a scientific paradigm focusing on scientific knowledge and based on an idea that knowledge alone would lead to environmental action and a change of behaviour (Hungerford and Volk 1990). This tradition is also identified in Swedish environmental and sustainability education and is in a Swedish context given the label 'fact-based environmental and sustainability education' (Öhman 2008, 2009).

The behaviourist research approach to environmental education primarily aims at investigating how responsible environmental behaviour can be guaranteed. Accordingly, the focus of such research is on pinpointing 'predictors' of responsible environmental behaviour. According to Robottom and Hart (1995), the behaviourist approach to environmental education research is characterised by the following traits: (a) taking an experimental applied scientific approach to research focusing on pre- and post tests (b) being ob-

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[3] There are multiple perspectives on education concerned with 'the environment' and 'sustainability'. Concepts such as for example 'education for sustainable development', 'environmental education', 'environmental and sustainability education' and 'education for sustainability' illustrates a wide variation in terminology and involves also multiple ways of interpreting these concepts and the ideas and meanings given within each definition. In this chapter, these concepts are used interchangeably and the terminology used by the authors are used in my discussions.

jectivist, treating "teachers, children, and educational settings as manipulable components of an objective reality and having an overall interest in the generalizability of its 'findings' (Robottom and Hart 1995, 6) (c) being instrumentalist, supposing pre determined goals for environmental education and measuring the correlation between these goals and how well individuals and programmes live up to them, and (c) being behaviourist in terms of regarding shaping human behaviour as the main purpose of education.

Thus, this approach reflects the idea of shaping human behaviour into a responsible environmental behaviour as the ultimate goal of environmental education. This also reflects the language used in many of the policy reports discussed above. Following this, the main aim of environmental education research is to determine the variables that make such changes of behaviour possible. In such a perspective, individual behaviour change is in focus and efforts are centred on e.g. measuring the levels of environmental sensitivity in individuals, individual's attitudes toward environmental problems or individuals' perceived knowledge of environmental action strategies (Sia, Hungerford and Tomera 1985, 31 in Robottom and Hart, 1995).

The positivist tradition has been criticised on different grounds. One line of criticism concerns the deterministic approach of "seeking to control (through prediction and reinforcement) certain ways of thinking and acting valued by the researchers" (Robottom and Hart 1995, 7). This goes against the aims of education as to develop "critical independent thinking" (Robottom 1992; Robottom and Hart 1993 in Robottom and Hart 1995, 7). Furthermore, Cantrell (1993, 5) claims that: "the complex nature of education – entangled in relationships, replete with social, political and economic context, and laden with values – demands that an alternative paradigm [other than the positivist and behaviourist] drive educational research". As stated above, the research arena looks different today and a variety of research approaches is evident in the environmental and sustainability research literature. Correspondingly, qualitative investigations are more common nowadays even though processes of learning are still under privileged compared to for example investigations of educational impacts (Dillon, Heimlich and Kelsey 2013, 239-241).

The shift in research focus can be viewed in relation to the epistemological shift from positivism to relativism and criticism along with the rise of neo-pragmatic and sociocultural research perspectives. The positivist research tradition perceives humans as separated from the rest of nature (Cantrell 1996, 1). Accordingly, it may be possible to claim that the research approaches within the positivist tradition maintain dichotomous relationships between humans and non-human nature, thus supporting the idea of humans and nature as separate and disconnected entities.

The shift from one dominating approach to a higher variation in research approaches can also be related to the acknowledgement of the moral and ethical dimension of ESE which implies that sustainable development cannot only be achieved solely through scientific knowledge and scientific solutions. Even though we need science in order to understand environmental challenges such as climate change, the rise in water levels and the ice melting in the Arctic, the issues at stake are much more complicated. Öhman (2008, 11) stresses that "the very concept of sustainable development originates from a moral concern for future generations" suggesting that "one of the main challenges […] facing Education for Sustainable Development (ESD) is how we prepare coming generations to deal with value-related differences and make agreements, compromises and changes". The increased attention given to ethical and moral issues in discussions of sustainable development (Öhman 2006; Payne 2010; Kronlid and Öhman 2012) has led to an increase in research approaches that examine ethical and aesthetical dimensions. Accordingly, this has given rise to investigations that specifically investigate value dimensions of environmental and sustainability education in educational practices (Öhman 2006) as well as in educational texts (Östman 1995; Svennbeck 2004; Östman 2010).

Aesthetic, experiential and ecological approaches

Kopnina (2012, 700) argues that pluralistic approaches "can lead practitioners into an essentially anthropocentric paradigm which can be counterproductive to the effort of fostering environmentally concerned citizenry". Furthermore, she claims that: "it may be possible that pluralism weakens our moral obligations towards non-human species" (2012, 705). In such a take on ESE, the importance of a change in values becomes the guiding principle of education, and implies a view of education as aiming to deliver a packet of priori determined knowledge, skills, ideas and values to students that is motivated in relation to the present hazardous *environmental* state of the world. In this context, the change in values concern a revaluation of 'deep green' issues of ecological relationship and the aim of ESE becomes to enhance ecological values rather than encourage a plurality of values. Accordingly, such an approach involves a political direction away from the anthropocentric worldview that is dominating present day culture as well as current ESE. Arguing for ecocentric and ecological perspectives from the view that the dominant pluralistic paradigm of ESE excludes perspectives such as deep ecology, Kopnina (2012, 710) claims that: "plural perspectives and democratic representation do not guarantee ecological protection as the underlying concerns may still be anthropocentric". This statement reveals the underpinning idea that ecocentric perspectives on environmental and sustainability education have the power to guarantee ecological protection.

One striking feature within ecological approaches to ESE is the tendency to positioning the need for such approaches to environmental and sustainability issues in the light of negative features that permeate present day culture, such as dominating politics, globalisation, mobility and technology. Thus, one recurring theme is a view of present culture, including educational culture, as negative and oppressive (Bowers 1993, 2001, 2006). The negative aspects are commonly discussed in terms of the prioritisation of mind over body, the scientific over the artistic, the rational over the emotional and culture over nature causing human disconnection from nature (Sobel 1996; Louv 2008; Bowers 2003). In turn, humans disconnection from nature is viewed as leading to "ignorance that brings a spiritual impoverishment, that in turn diminishes our sense of ourselves and what it is to live well. It prevents us from seeking to know the world as it is itself - in its intrinsic value […] and therefore truly understanding our place within it" (Bonnett 2007, 710). What is more, in such counter culture approaches, environmental and sustainability challenges often take departure in a 'crisis attitude' in which 'the ecological crisis' is constituted as having cultural roots. Accordingly, the ecological crisis is viewed as a human crisis viewing the destructive behaviour of humans as causing harm to both nature and culture (Mueller 2008). Another line of reasoning involves the constitution of science as

> […] root causes of current ecosystem degradation in its historical conjunction with technology, industrialism, and urbanization. Particularly, environmentalist groups which advocate holistic thought and non-invasive approaches to the human body as well as the natural environment typically define themselves against what they view as the overly specialized, materialist, and aggressive methodology of modern science (Heise 1997, 4).

With the constitution of science as a root cause to current environmental and sustainability challenges follows the idea that the scientific paradigm of present-dayculture guides our moral outlook away from nature rather than towards it and endorsing anthropocentric views of nature. For example, Bonnett (2007, 710) claims that:

> […] Brundtland-type definitions of sustainable development reflect highly anthropocentric and economic motives that lead to nature being seen essentially as a resource, an object to be intellectually possessed and physically manipulated and exploited in whatever ways are perceived to suit (someone's version of) human needs and wants. That is to say, they are redolent with the general metaphysics of mastery that informs modernity and is precisely the root cause of our current environmental predicament.

Following this, science, anthropocentrism and human self interest are often constituted as destructive forces that permeate present day culture and as dominating the contemporary educational culture. Thus, the cultural posi-

tioning of present-day environmental and sustainability challenges requires an alternative educational response to the one that is dominating contemporary Western culture. For example, Martusewicz (2005, 332) argues that: "survival on this planet depends […] on breaking the spell of denial, disconnection and hyper-separation that industrial consumer culture projects and that we internalize as members" (Martusewicz 2005). Departing from such a perspective, 'alternative experiences' such as aesthetic, embodied and emotional experiences that are constituted as not being offered in traditional education are put forward as being particularly powerful for reconnecting humans to nature and place and for enhancing ecoethical consciousness. For example, Martusewicz (2005, 334) argues that embodied experiences "draw us closer, […] create connection and pleasure, happiness and well-being and thus could move us to protect each other and the life systems we live in". Such counter paradigms to mainstream ESE come in various forms as reactions to 'cover the curriculum approaches' that are constituted as being based on intellectual thinking and propositional knowledge. What is more, such approaches are considered part of the problem of the destructive cultural environmental crisis of the present. Accordingly, such approaches to ESE often include the educational aims of re-establishing values that have been lost in present globalised culture and re-evaluating other forms of knowledge and other forms of experiences than the ones dominating present day educational culture such as sense based forms of knowledge and embodied and aesthetic experience. Thus, such environmental and sustainability education approaches suggest aesthetic and experiential experiences to a viable approach in ESE. As Bonnet (2007, 714) suggests "what is needed is a kind of knowing in which personal, moral, and aesthetic dimensions are embedded, i.e. a knowledge of things in which 'fact' and 'value' are not separated out because things are perceived in their life, wholeness, and inherent mystery".

Place approaches

The concept of place is discussed in ESE, outdoor education and ecocriticism (Gruenewald 2003; Paine and Wattchow 2009; Wattchow and Brown, 2011; Quay and Seaman, 2013; Bonnett 2004, 2007; Gough 2008, Garrard 2010; Buell, Heise and Thornberg 2011) and is predominantly discussed in terms of natural environments. Place approaches include a wide variety of aims, contents and ideological underpinnings but broadly refer to "education programs in which students learn about local natural, built, and social environments through inquiry, environmental action, and other hands-on activities in a specific place" (Hutchinson 2004; Sobel 2004). However, some features are shared, for example, environmental and sustainability place education literature often emphasises the aim of enhancing appreciation of the natural and cultural world.

The use of various experiential approaches is another shared feature (Kudryavtsev, Stedman and Krasny 2012). The idea that place-consciousness can contribute to increased understanding of how humans relate to the environment is an aspect of place studies that has been discussed as a contribution to environmental educational theory (Greenwood 2013, 93). As such, place based approaches aims to raise awareness about our place in the world through emotional, intersubjectve and embodied experiencies 'alternatives' to those offered in traditional education in order to enhance a connection to land and place and the development of more eco ethical consciousness and more sustainable ways of living than what is offered by present day culture. Such experiences are considered as being particularly valuable for making us "feel what it is or would be like to live in more connected and sustaining ways, those experiences can shift our thinking" (Gruenewald and McKenzie 2009). Thus, the interest in place can be understood in the light of the conception of human displacement in a present globalized culture marked by mobility (Louv 2008; Wattchow and Brown 2011) and present day destructive cultural development. For example, Bowers (2001, 130) argues that: "A politicized, multicultural, critical place-based education would explore how humanity's diverse cultures attempt to live well in the age of globalization, and what cultural patterns should be conserved or transformed to promote more ecologically sustainable communities". Thus, turning to place is viewed as a response to present day globalisation and humans disconnection from nature. As such, place-based education can be viewed as a counter-movement towards dominating educational cultures where locally placed experiences are overlooked and as having the purpose of educating for global participation (Greenwood 2013, 94). Within the place-based approach, the view that "local places provide the specific contexts from which reliable knowledge of global relationships can emerge" (Greenwood 2013, 94) serves as a basic premise for place-based education when coupled with a view of learning "that begins not with abstractions about the environment, but with direct local experience" (Sobel 1996, 2005, in Greenwood 2013, 94). Thus, within the place approach, individual sensory experiences of place are considered crucial for learning.

Accordingly, there is an ambition to put focus on 'the more than human', ecological and biophysical aspects of the environment in order to bridge the gap between environment and culture (Greenwood 2013). Accordingly, Greenwood (2013) suggests a theory of environmental education based on a blend of the concepts of 'decolonisation' and 'reinhabitation'. Such an approach departs from the idea of criticism towards colonisation as the antecedent of "today's socially and ecologically catastrophic globalization and development trends" with the need "to reimagine and recover an ecologically conscious relationship between people and place" (Greenwood 2013, 96).

In the editorial of the special issue on "Context, Experience, and the Socio-ecological: Inquiries into Practice" in *Canadian Journal of Environmental Education* (Greenwood and McKenzie 2009, 5-15) the editors couple a socio-oecological approach with a "creative decolonization and inhabitation approach". They merge the ideas of educational 'decolonization' here given the meaning of "unlearning patterned and familiar ways of experiencing and knowing to make room for practices that are unfamiliar". Such a perspective is closely linked to cultural decolonization "that is, unlearning, healing, or resisting ways of being that are socially and ecologically unjust or damaging to self and others, human and more-than-human, near and far, now and in the future" (Greenwood and McKenzie 2009, 9). The special issue includes various illustrations of educational situations where 'decolonization' and 'inhabitation' take place, examples of educational approaches that are considered to enforce such processes and examples of educational situations that offer feeling and connection (Greenwood and McKenzie 2009, 9). For example, Bowers (2009) argues that teaching can help students to explore alternative cultural values other than those values which dominate present day culture and that are implicitly taught in education, such as for example consumerism and high technology. Heesoon Bai and Greg Scutt (2009) illustrate how education, with a particular focus on the role of educators, helps to aid such experiences that empower more sensuous and less dualistic relationships with the natural world. Thus, in such an approach the aims of ESE-research are to give illustrative examples of how education can be organised to achieve change and transformation and how environmental learning can be carried out in order to enhance learners' "heightened consciousness of land, embodiment, place, or […] other species" based on empirical research from every day teaching practices (Greenwood and McKenzie 2009, 11). In this particular issue of *Canadian Journal of Environmental Education*, the teachers are given a prominent role as "change agents […] trying to help wake people up" (Greenwood and McKenzie 2009, 13).

Place has also been discussed within ecocriticism (Buell, Heise and Thornber 2011, 429) and features in discussions about ecocritical pedagogy within the context of ESE (Garrard 2010; Cutter Mackenzie, Payne and Reid 2010). Ecocriticism is commonly defined as a research field and as an educational practice that explore the "connection between literature and the physical environment" (Glotfelty and Fromm 1996, xviii). An ecocritical place approach involves the idea that the reading of literature can enhance the development of a "sense of place" and an attachment to place and the purpose of literature is to "redirect human consciousness to a full consideration of its place in a threatened natural world" (Love 1996, 237). From an ecocritical perspective, non-fictional nature writing, or place-based literature, is considered particularly important for enhancing a sense of place. For example,

Dunlop (2008, 5) claims in the introduction to the special issue on "Art, Literature and Place" in *The Canadian Journal of Environmental Education* that: "These kinds of narratives [nature writing in the first person] provide the potential to connect to the environment or reconnect to the environment in ways that are vital to ecological concerns in the 21th century". In these discussions, the ability of the genre and the authors' portrayal of personal experiences of nature are discussed as the most important circumstances in the literary meaning making of place. This implies that encountering places in texts can lead to an attachment and a revaluation of how humans relate to their places in every day life. For example, Payne (2006) refers to Hay (2002), who claims that "place literature […] is relevant to the wider concerns of ecological thought because it creates empathy, encourages a deep concern for the processes of life, stresses living in accordance with ethical precepts, and has a political edge." Furthermore, literature is considered as a powerful means for enhancing environmental and sustainability meaning making because literature provides aesthetic and emotional experiences and appeals to our imagination (Dunlop 2008, 6).

Accordingly, place-based approaches are normative in a way that differs from more fact-based normative approaches to ESE in which scientific knowledge about environmental and sustainability issues are viewed as leading to appropriate environmental responses (Öhman 2009). Instead, place approaches depart from the notion that aesthetic, sense-based and embodied experiences are more valuable than scientific knowledge for environmental meaning making either such experiences come from physical outdoor nature encounters or literary encounters. Thus, place is constituted as an importance circumstance for environmental and sustainability education in which encounters with place are considered to generate aesthetic, sense based and embodied experiences that in turn are regarded as having particular power to 'shape" environmental meaning making and a change in how humans relate to their environments.

Mobility approaches

In order to widen the concept of place, the field of mobility adds a further dimension to the concept of place as a moving force. In the present day ESE discussion, mobility is often viewed as a negative aspect of present day globalized culture and part of the package of the aspects that withdraw humans from nature contributing to a sense of placelessness and lack of contact with the natural places in which we live. However, in a mobility perspective, mobility can be viewed as an integral part of embodiment and not necessarily as something negative apart from human beings (Enriquez 2009; Urry 2007; Sheller 2004). For example, the concept of holistic mobility (Cresswell 2010; Priya Uteng and Cresswell 2008; Kronlid 2008b) has been used

to investigate interconnections between potential and revealed spatial, social and existential movements (Kronlid 2009; Kronlid and Grandin forthcoming; Nynäs 2008a, 2008b). For example, in Paper IV in this thesis, mobility is viewed as a situational circumstance in the analysis of connections between environmental meaning making and embodied movement. From such a point of view, spatial and temporal movement and mooring of learner, technology and learning content 'provides different experiences, performances and affordances' (Hannam, Sheller and Urry 2006, 15) with potentially new ways of socialising, encountering, and making meaning of place (Bergmann, Hoff and Sager 2008; Kronlid 2008). The significance of mobility as intertwined processes of motion and fixity for experiencing and making meaning of places has thus been applied (Urry 2007; Bergmann, Hoff and Sager 2008; Bergmann and Sager 2008). In relation to the discussion about humans' disconnection from nature today, this view of mobility may help to clarify the role of mobility in environmental meaning making. Rather than making distinctions between different modes of experiencing the environment and not regarding place as something situated that we encounter, but as something that is becoming in the encounter between people and places, the mobility perspective can add further dimensions to discussions about environmental meaning making in ESE (Gough 2008).

Situating the Thesis

The constitution of the potential of aesthetic and embodied experiences offered through encounters with both natural places and place-based nature writing is the starting point for this thesis with the aim of investigating approaches to environmental and sustainability education in outdoor education and ecocriticism as well as interplaying circumstances in environmental meaning making. Taken together, from the point of view of the aesthetic, experiential, ecological and place approaches presented above, 'dominating' ESE approaches are viewed as prioritising reason, knowledge and cognitive thinking and devaluing aesthetic, embodied and place-based experiences. Accordingly, such approaches seem to assume that just because aesthetic and experiential experiences are offered, certain environmental values will develop and environmental meaning making will happen. Accordingly, 'ecopoetics' is viewed as much more fruitful for enhancing human-nature relationships and encouraging environmental meaning making and learning than informative messages (Stables 2006). However, knowledge about what aesthetic encounters might mean, how aesthetic, sense-based and embodied experiences shape learners' experiences of encountered environments and how such processes unfold have not been given much attention in the ESE-research. Didactical inquiry into, for example, students' responses to the reading of texts that are used in ecocritical education are rare in both ecocrit-

ical and ESE research (Oppermann 2006; Garrard 2010; Cutter-Mackenzie, Payne and Read 2010) which is discussed in Paper II in this thesis. Furthermore, Papers III, IV and V in the thesis aim to contribute knowledge about the processes and content of environmental meaning making.

The significance of context for learning and communication has a relatively long history in educational research in for example situated learning theories (Lave and Wenger 1991). In such perspectives, learning and meaning making are viewed as intermingled with sociocultural and situational conditions (Goodwin 1997; Säljö 1997; Wertsch, del Rio and Alvarez 1995). However, places or texts are rarely discussed as one of several other circumstances in environmental and sustainability education research. For example, Brandt (2013, 241) explores "the use of landscape as a context for learning in environmental education" by focusing on "the relationship between the learner and the context in which learning takes place" and "the link between place and identity through the lenses of landscape". Furthermore, Brandt (2013) touches upon the pedagogical opportunities that place *provides* for environmental meaning making and learning. She claims

> Landscapes can be read in terms of what they tell us about the history of people – they *provide* [my italicizing] evidence for interpretation and opportunities for developing imagination as well as empathy for the people and wildlife who live, have lived and will live in an area. They *provide* an opportunity to see power and control, influence and politics writ large on the environment" (241).

In addition, the same way of reasoning is often used in discussions of what the reading of literature can contribute with in terms of environmental meaning making and environmental concern. For example, as stated above, Dunlop (2008) regards nature writing to provide reconnection to the environment. The same way of talking about the benefits of place-based education is expressed by Reisberg, Brander and Gruenewald (2006, 120) as "Learning from the local *provides* [my italicizing] students with the opportunity to create long-term connections with and respect for the places where they live". Furthermore, in the same sense, in a place-based educational setting Gruenewald (2008) claims that places *are* pedagogical.

Accordingly, in these discussions, place is often given particular pedagogical power in environmental meaning making and place is constituted as providing experiences that are relevant for the development of environmental values and for enhancing human relations to nature. Accordingly, the dominating talk concerns what place provides and what place is. As such, these approaches tend to view place as being able to 'enter the individual' without looking at how other circumstances are influencing meaning making of

place. The individual is regarded as a participant in place which *provides* different kinds of insights through connection out of which an ethic of care automatically develops, either the encountered place is physical or literal. Accordingly, in such approaches specific places or specific texts tend to be constituted as generating meaning without taking other circumstances such as individuals, actions and experiences into account. Furthermore, getting to now a place and to care for a place tend to be constituted as a consequence of being in place or read about a place.

In relation to these discussions, this thesis investigates institutionalised offers of situational circumstances for environmental meaning making as well as how situational circumstances interplay in environmental meaning making for which there seems to be a certain need. For example, Stevenson et al. (2103) calls for more research on worldviews and belief systems linked with individual identities; the contexts in which people live and work; people's emotional responses to education/learning and the environment; language and discourse; and social learning. Nespor (2008) further claims that: "what exactly is operational in people's learning with and in places remains under theorised". Furthermore, Dillon, Heimlich and Kelsey (2013, 240-241) claim, as also mentioned above, that relatively little research has been conducted into environmental meaning making and learning in environmental education research. Lundholm et al's (2013, 240) study illustrates the diversity of individual interpretations of environmental and sustainability topics and "the implications of […] is that learning is a very personal, cognitive and emotional process". This opens up a need to further investigate environmental meaning making and learning empirically in specific situations.

This thesis does not take as its starting point that certain texts or certain places are more valuable than others, or that certain experiences are more powerful than others but treat these issues as empirical questions. Empirical research on the meaning of nature experiences and the development of environmental meaning making and environmental awareness is rarely done in relation to the reading of literature (Garrard 2010). Adding to this, there are in general few studies on environmental meaning making and there is need for more research focusing on such perspectives (Öhman 2006; Östman, 2010). Accordingly, the idea that certain places or certain texts provide certain experiences that have the power to reorient humans towards more sustainable ways of being in the world need to be further clarified and investigated from a didactical point of view. By taking a pragmatic starting point to investing the mutually constitutive circumstances in environmental meaning making my hope is that this thesis will add to the understanding of environmental meaning making and the situational circumstances that influence environmental meaning making in specific situations.

Theory

The studies included in this thesis are situated in a Swedish didactic research tradition which departs from socio-cultural theory and pragmatic philosophy departing from a view of learning as situated in certain practises and advance in encounters between individual experience, social, cultural and physical contexts (Almqvist et al. 2008; Östman 2010; Säljö 2009). In order to carry out investigations of both environmental meaning making content and how different circumstances interplay in meaning making, a pragmatic and transactional research approach is applied in the studies carried out in this thesis (Östman 1995, 1996; Öhman and Östman 2008; Östman and Öhman 2010; Klaar 2013). One of the theoretical and methodological challenges has been to develop ways of analysing individual and cultural dimensions of meaning making as mutually constitutive. Rogoff (1995 139-141) describes this way of including both individual and environmental circumstances in investigations.

> Even when both the individual and the environment are considered, they are often regarded as separate entities rather than being mutually defined and interdependent in ways that preclude their separation as units or elements. Without an understanding of such mutually constituting processes, a sociocultural approach is at times assimilated to other approaches that examine only part of the package.

The pragmatic and transactional approach to the studies conducted in this thesis was chosen because Dewey's conceptualisation of the human-environment relationship as transactional and Rosenblatt's view of the human-text relationship as transactional provide fruitful starting points for investigating the constitution of approaches to environmental and sustainability education in educational practice and for investigating interplaying situational circumstances in environmental meaning making. From a transactional point of view, neither environments nor texts can define meaning making on their own since meaning making is understood as a continuous transactional event constituted in action in situational practice.

The first objective of this thesis is to investigate institutional offers of environmental and sustainability education in outdoor education and ecocriticism with a particular focus on the role given to the human-nature relationship as

a situational circumstance for environmental meaning making. That is accomplished in Paper I regarding outdoor education and in Paper III and further elaborated on in the introductory section to Paper II regarding ecocriticism. The second objective of the thesis is to investigate interplaying situational circumstances in environmental meaning making which means that in focus for the analyses are both the environmental content that comes forth in meaning making as well as the unfolding of environmental meaning making. This is done in relation to the reading of nature writing in Paper III, to mobility in Paper IV and to painted landscapes in Paper V. The fourth objective of the thesis is to develop analytical methods for conducting empirical investigations of environmental meaning making in which different interplaying situational circumstances are taken into account. The methods that are developed for conducting the investigations in the thesis are based on the pragmatic transactional approach to meaning making and reading based on Dewey's philosophy and Rosenblatt's transactional theory of literature. These methods are thoroughly described and explained in Paper III and Paper IV and Rosenblatt's transactional theory of the reader-text relationship is explored in detail in Paper II and Paper V. This chapter presents the theoretical starting points for the methods that are developed in order to investigate the approaches to environmental and sustainability education in ecocriticism and the empirical investigations of interplaying situational circumstances in environmental meaning making carried out in the thesis.

Environmental Literacies and the Issue of Environment and Text

The linguistic turn of the 20th century implies a change in the relationship between language and external reality and challenges the positivist assumption that language is only regarded as a reflection of reality with the main aim of transferring facts. According to Stables (2001, 22), the change from a view of language as a vehicle or mirror in which language is not given a role as being part of shaping reality, to a view of language as constituting human understanding and cause things to happen will affect the way we regard ESE practices. This also has consequences for ESE research as well as for ESE as an educational situation.

Acknowledging that all education is normative (McKeown and Hopkins 2003), it is generally agreed that ESE cannot be regarded as a value neutral 'package' that can be transferred from teachers to students in educational settings all over the world (Stables 2006, 327). From the linguistic turn, a number of implications related to how the relationship between language and the natural environment is viewed become crucial. According to Stables

(2001, 121), a greater emphasis on meaning, interpretation and the power of language is crucial for a deeper understanding of the complex relationships between humans and non-human nature in ESE practices. The 'turn' to a more pragmatic view of language implies that pedagogical and didactical discussions, i.e. of educational content, teaching strategies, views of learning and discussions about the meaning of concepts such as 'sustainable development' need to be clarified, explained and investigated in relation to the contexts in which they appear. According to Stables (2001, 122) this view of language means that searching for universal meanings and universal truths "out there" will not help us to know what, why, when and how to teach and learn certain aspects of 'sustainable development' since the term will be given different interpretations and meanings depending on the situations in which it occurs. From this perspective, Stables (2001) and Stables and Bishop (2001) introduce a framework of different modes of environmental literacies in relation too ESE.

The discussion of 'literacy' in environmental educational contexts goes back to debates within the fields of literary studies (Stables 2001, 246) and deals for example with what does and what does not constitute 'text' (Stables and Bishop 2001, 89). However, the concept of 'environmental literacy' has entered environmental and sustainability discourses as well. For example, in UNESCO's (1997) expansion of the Tbilisi Declaration, environmental literacy is defined as "a basic functional education for all people, which provides them with the elementary knowledge, skills, and motives to cope with environmental needs and contribute to sustainable development." The random treatment of the concept of literacy has been questioned by critics in the field of language and literature studies based on the belief that the arbitrary use of the term has degraded its meaning and the lack of general acceptance of the meaning of the term (Shamos 1995 and Kress 1997 in Stables and Bishop 2001, 90). Furthermore, Stables and Scott (2001, 90), claim that general discussions about 'environmental literacy/ices' are not formulated in relation to broader philosophical or theoretical frameworks and do not sufficiently relate to other debates on the topic of literacy outside the field of ESE. For example, Orr (1992) discusses environmental education in terms of ecological literacy from a deep ecology perspective. In relation to a deep ecological view, Orr (1992) stresses the risks of the use of the concept of sustainability as denoting a technological sustainability that is inconsistent with a deep ecological philosophy. However, scientific perspectives are not completely refuted but viewed as equally important as more 'Earth-centred' and deep ecological perspectives. According to Orr (1992), being ecologically literate means knowing how to be in the world and how to behave towards nature in ways in which nature is valued in it self.

Stables (2001 246; 2006, 145) suggest a framework for discussions about ESE pedagogy in terms of functional, cultural and critical environmental literacy anchored in the conceptions of a narrow and a broad view of literacy. This implies two different ways of considering what does and what does not constitute 'text' (Stables and Bishop 2001, 89). This discussion provides a starting point for critical discussions on the meaning and value of 'nature' and 'culture' in ESE.

The framework includes 'functional literacy' (the facts), 'cultural literacy' (the socially significant) and 'critical literacy' (the ability to critique and reconstitute an argument) that constitute different ways of understanding and reading environment as text. Stables and Bishop (2001) argue that taking a strong view of literacy can serve as a helpful tool in discussions of teaching and learning in ESE practices. Within a strong concept of environmental literacy lies the theoretical assumption that the biophysical environment can be read as 'text' (e.g. the broad view of literacy) based on the argument that the physical environment is not value neutral but generates meanings to its encounterers, i.e., to humans. This line of thought implies that encounters with physical environments will generate different meanings to different encounterers. The reasoning can be summarised as follows.

Weak environmental literacy	Strong environmental literacy
Narrow view of literacy (literacy as reading and writing)	Broad view of literacy (literacy as semiotic engagement)
Limited view of text (e.g. landscape cannot be regarded as text)	Broad view of text (e.g. everything can be regarded as text)
Environmental literacy is subset of environmental education	Environmental literacy is broader than environmental education.

Table 1. Summary of strong and weak conceptions of environmental literacy, following Stables and Bishop (2001,194).

According to Stables (2001, 93) taking a 'strong' conception of environmental literacy into account, including the possibility to regard the environment as text, has a number of implications for discussions about and definitions of the environment. It implies that (a) it is possible to make meaning of the environment in various ways, for example scientific meaning, historic meaning, and aesthetic meaning, (b) there is more than one way to understand the environment, and (c) social and cultural factors take part in environmental meaning making processes. What is more, the broad view of literacy does

not distinguish between 'reading' and 'writing' which entails the idea that these actions are regarded as being in continuous process. As I understand Stables, this implies that how we read (interpret, value) and write (act on) the environment is to be seen as continuous and simultaneous processes.

Furthermore, Stables (2001, 94) argues that by and large the educational debate has missed seeing "fundamental environmental issues as open to interpretation, as though the existence of the biophysical world is not dependent on our perception (and thus interpretation) of it". Accordingly, he argues for the importance of discussing the role of language in meaning making in contrast to the more "weak" conceptions of environmental literacy that dominates ESE discourse.[4] This is also something noted by Gough (2008, 75) who therefore chooses to use the concept of 'ecocritical literacy' to

> […] tactically distance my project from naïve or shallow versions of environmental literacy, and to emphasise the need for environmental educators to embrace a 'stronger' conception of literacy that takes account of the broader ramifications of understanding environmental education as a textual practice – a practice that is susceptible to improvement through inquiries in disciplines of the arts and humanities that have tended to be undervalued in environmental education, including language arts, semiotics, literary criticism and cultural studies.

Furthermore, Stables (2006) argues that language becomes crucial in the discussion about ESE research and in educational practices that do not regard environmental issues as being open to interpretation, tend to disregard viewing environmental issues as dialogical phenomena which are in continuous process, i.e. a weak conception of environmental literacy. This tends to overlook the cultural and aesthetic values that are involved in human meaning making of non-human nature which leaves us with the misconception that nature is either a machine that humans can control, or a mechanical entity that will soon vanish (the catastrophic view of nature). Finally, Stables (2006, 331) claims that a strong conception of literacy can help us to detect the different views of nature that we encounter. He regards this as being of special importance today since our understanding of our environment is principally based on scientific and corporatist descriptions of the environment, which consequently affect our perception of and actions towards how we perceive and act on the environment.

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[4] "Language permeates our lives as environmental educators. 'Sustainability' is a word. Like all words, it relates to something outside itself, but, like all words, its precise meaning is always dependent on the context in which it is used. Given the possibility that we might eventually fail to sustain life on this planet, or, at least, diminish its richness, there seems little of more importance than pursuing the debate about what we mean by this term, what we might mean, and what the adoption of such a meaning might lead us to do" (Stables 2006, 127).

The discussion about environmental literacies provide a starting point for critical discussions and investigations of the meanings and values given to the environment that are offered to students in the educational practices investigated in this thesis. Thus, the framework functions as a starting point for the critical discussion of the constitutive discursive rules identified in the investigation of the approach to environmental and sustainability education in outdoor education, with a particular focus on the human-nature relationship carried out in Paper I. In addition, the framework functions as a starting point for the critical discussion of the constitutive discursive traits identified in the investigation of the approach to environmental and sustainability education in ecocriticism, with a particular focus on the reader-text relationship carried out in Paper III and the introductory section to the results of the studies on ecocriticism.

Furthermore, the studies carried out in this thesis take a strong conception of literacy as a starting point in which not any a priori distinctions between 'text' and 'reality' is made in the investigations. All the studies in this thesis investigate different genres of texts. First, Paper I, investigates authoritative texts (Östman 1996, 1998; Quennerstedt 2006, 2008) in the form of outdoor education textbooks and the purpose of these texts is to provide future outdoor education teachers with relevant information of outdoor education that they need in order to become outdoor educators. Second, Paper III, investigates students' readings of David Henry Thoreau's *Walden*, a text that is classified as genre nature writing and this paper also, although briefly, investigates authoritative texts in the form of ecocritical textbooks. Third, Paper IV investigates Jenny Diski's travel narrative *Daydreaming and Smoking around America with Interruptions* that has the purpose of portraying the authors experiences of her train journeys around America. Finally, Paper V, investigates scientific climate change narratives as well as the painter Hardy Brix's paintings which in the study are viewed as texts in a broad meaning.

In this thesis, texts are used for investigating environmental meaning making as though the situations described in the texts are 'real situations'. As in Paper IV, this means, that we do not need to sit next to Jenny Diski and ask her about her experiences of the American landscape through the train window, because her written accounts of this situation tell as much about this situation as if we would have been there asking her about her experiences. Thus, from a pragmatic perspective, Dewey argues in *Experience and Nature* (1929/1958) that science is not regarded as an objective way of understanding the world:

> The philosophic theories which have set science on an altar in a temple remote from the arts of life, to be approached only with particular rites, are a

part of the technique of retaining a secluded monopoly of belief and intellectual authority. (286)

This means that the texts that are investigated in this thesis are regarded as potentially 'meaningful actions', or 'social events' and as such functioning as 'equipments for living' (Werner 2010) and 'environing conditions' (Dewey 1938/1997). Furthermore, by taking a pragmatic starting point the texts that are analysed in this thesis are regarded as potential environments that "can help readers navigate complex social-environmental decisions" (Werner 2010, 22) and rests on the assumption that literature (text) can contribute to the understanding of how we make meaning of the world. Thus, the studies carried out in the thesis take a practical starting point (Hildebrand 1999) to the study of texts that implies a broad interpretational inquiry. Hence, literature and literary meaning are viewed as lived, and thus, shared, experience rather than as something located in a fictional space separated from ordinary life and reality. In this sense, the texts in focus for investigation in this thesis are regarded as actions and potential environing conditions for meaning making and as reports of human socio cultural activities that are possible to investigate empirically (Dewey 1938/1997).

Meaning Making, Transaction and Environing

Stables (2001, 2006) suggested position that is taken as starting point for viewing the empirical material, does not take environmental meaning making into account since he is primarily interested in presenting a theory of the relation between text and environment. Literary critic Louise Rosenblatt (2005) adds further help in clarifying the position taken in this thesis. Departing from Dewey & Bentley (1949/2008), Rosenblatt (1994, 1995, 2005) develops a transactional theory of literature and reading in which the relationship between meaning making and reading is understood as simultaneous and mutual departing from Dewey's pragmatist epistemology.

Also influenced by a transactional approach, Rogoff (1995) discusses the study of sociocultural activity on three planes comprising three levels of processes: (1) personal, (2) interpersonal and (3) community/institutional. These are "inseparable, mutually constituting planes comprising activities that can become the focus of analysis at different times, but with the others necessarily remaining in the background of the analysis" (139). According to Altman and Rogoff (1987, 16) a transactional approach differs from an interactional approach which focuses on antecedent predictor variables and consequent behavioural and psychological outcomes" […] in which the joint contributions of separately defined situational and personality qualities were examined as determinants of behaviour". For the investigations carried out in

this thesis, this for example means that meaning making is not investigated in terms of before and after the reading of *Walden* (Paper III) or how Jenny Diski viewed the American landscape before and after her train journeys (Paper IV) but is investigated as actions in transactional practice.

Rogoff's discussion goes back to Dewey and Bentley's (1949/2008) theory of transaction. Taking a transactional perspective on meaning making and learning means that what is encountered, either it be texts, stones or parking lots, and the person/s involved in the meaning making are transformed in the process. As Parker (1996, 23) puts it: "[t]he process of reconstruction transforms *both* the knowing subject and the known object". Initially, Dewey talked about interaction rather than transaction but shifted from "interaction" to "transaction" in order to overcome the underpinning connotation of separation of entities in meaning making denoted by an interactional approach (Dewey and Bentley 1949/2008). Transaction emphasises "person-environment systems [as] formed of and defined by the simultaneous and combined action of their aspects" (Hartig 1993) and that "[h]uman beings are always in […] a reciprocal relationship with an environment, a context, a total situation" (Rosenblatt 2005, 26). Even though meaning manifests itself in action in interactional as well as in transactional approaches to meaning making, inter-action (action between) was associated with a mechanistic model of research and the world (Rosenblatt 1985), focusing on trans-action (action through) and emphasising an organic view in which its parts continuously affect and adapt to each other *in situ* (Rosenblatt 1985; Dewey and Bentley 1949/2008). Hence, in a transactional theory of meaning making the person-environment relation is regarded as a "holistic entity" or "event" (Hartig 1993). Accordingly, experiences and situations are not considered as two separate entities but intimately connected and dependent on each other. Consequently, meaning is created in encounters between individuals and their surroundings (physical and social) that transform the person. This means that neither texts nor environments *are* but *become* in experience.

Altman and Rogoff (1997, 36-37) regard transactional approaches to be "particularly relevant to environmental psychology, given that field's intrinsic interest in holistic, changing aspects of person-environment relationships" and define "the study of the changing relations among psychological and environmental aspects of holistic unities." (24). Accordingly with such a definition, "the unit of (psychological) analysis is holistic entities such as events involving persons, psychological processes, and environments." These ideas go back to Dewey (1938/1997, 43-44) who provides a view on our relationship to the environment as *environing*.

> The conceptions of situation and of interaction are inseparable from each other. An experience is always what it is because of a transaction taking place

between an individual and what, at the time, constitutes his environment, whether the latter consists of persons with whom he is talking about some topic or event, the subject talked about being also part of the situation; or the toys with which he is playing; the book he is reading (in which his environing conditions at the time may be England or ancient Greece or an imaginary region); or the materials of an experiment he is performing. The environment, in other words, is whatever conditions interact with personal needs, desires, purposes, and capacities to create the experience which is had. Even when a person builds a castle in the air he is interacting with the objects which he constructs in fancy.

This means a view of human-nature relationship as transactional which is the theoretical starting point for the investigations included in this thesis focusing on the constitution of human-nature relationships in outdoor education and ecocriticism and the investigations of situational circumstances in environmental meaning making. Accordingly, from such a point of view, environments are constituted from time to time as the specific conditions or surroundings that transact with the person. Hence, environments are not a passive back drops against which they are experienced. Rather, environments manifest themselves as an active component of the surroundings when encountered. Consequently, it is in encounters that meaning is constituted. Therefore, a person's environment is considered as being a part of his or her experience and cannot be defined before a person transacts with a surrounding. Accordingly, an environment is not a pre-designed location (such as e.g. the "wild" or the "suburb") to be visited. Furthermore, as Dewey states above, environments are not delimited to the "natural world" but are created in processes of transformations of e.g. the people, objects, text, and natural entities encountered in surroundings at a given time and place. Consequently a person's "genuine" environment becomes the "things" i.e. processes, people, places, spaces, natural and technological entities, animals, buildings etc., "with which a man […] varies" (Dewey 1916/2009, 9). In this sense, neither environments nor texts "are" empty places, settings or structures. Rather they are always in a continuous process of "becoming" constituted by the things in a person's surroundings that prove to be meaningful or *environed* in transactional practice. Accordingly, following Dewey, *environmental* meaning making is the only form of meaning making that is possible since humans are never detached from their environments. The elements of our surroundings that become meaningful for us, or the elements that are noticed, are in function and per definition constituent elements of our *environments*.

How can this be understood in relation to views of situational circumstances in other theories of meaning making and learning? Behaviourist approaches to learning view learning as an outcome of an environments impact on the individual having the acquisition of new behaviour in focus (Phillips and

Soltis 2010, 20, 42). Cognitivist approaches to learning views learning as a sequential development process of learners' cognitive structures (Phillips and Soltis 2010, 69). According to Piaget, individual learners actively "construct knowledge through their actions on the world" (Cole and Wertch 1996, 250), thereby emphasising the active individual. What is missing in such perspectives are the social dimension. Therefore, in contrast to the individual focus of Piaget, Vygotskij stresses that "understanding is social in origin" and gives the social primacy over the individual in learning processes (Cole and Wertch 1996, 251). Accordingly:

> The task of a sociocultural approach is to explicate the relationship between human action, on the one hand, and the cultural, institutional and historical contexts in which this action occur, on the other (Wertsch 1998, 24).

However, the concept of "context" is often taken for granted and sociocultural research taking "contexts" into account often focus on classroom "contexts" as a basis for empirical investigations. In this thesis, the question of "where" education, meaning making and learning take place is central and treated and investigated from a pragmatic and transactional perspective in which the didactical questions of who, what and where, i.e. individual experiences and social communication, the subject content, i.e. texts, and situating circumstances, such as mobility, institutional settings, nature and texts are regarded as mutually and simultaneously constitutive.

Dewey's Theory of Experience

According to Dewey, meaning making and learning are situated in our connection to the world through experience (Dewey 1934/2005, 1938/1997).[5] Hence, it is when we are experiencing nature/environment that we are making meaning of nature/environment and it is when we are experiencing texts that we are making meaning of texts. Furthermore, the world as we are experiencing it is the 'real' world since we cannot really be anywhere else. However, in *Experience and Education*, Dewey (1938 /1997 makes clear that not all experiences are educative. Thus, in order to discriminate between educative and mis-educative experiences, Dewey (1938/1997, 35) discusses the continuity of experience as a principle:

> [T]he principle of continuity of experience means that every experience both takes up something from those which have gone before and modifies in some way the quality of those which come after.

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[5] In *Experience and Education* Dewey, (1938/1997) argues for the close relationship between personal experience and education and in *Art as Experience* (1934/2005) he argues for the relationship between art and ordinary experience.

This means that an "experience is not something we have and look back on; rather it is an ongoing process […]" (Browne 2007, 9) that is viewed as a "moving force that can be judged only on the ground of what it moves toward and into" (Dewey 1938/1997, 38) which involves continuing growth. Accordingly, for Dewey (1938/1997, 39) experience is not something that takes place inside the bodies and minds of individuals but "there are sources outside an individual which give rise to experience". Thus, this implies that human experience is (eco) social and involves "contact and communication" (Dewey 1938/1997, 38) with places and other human beings. Accordingly, experience becomes relational in nature and involves both 'objective' conditions, such as physical, social and linguistic conditions and individual conditions and "any normal experience is an interplay of these two sets of conditions that taken together form a situation". In such a perspective, experience can never be separated from where they are taking place, "An experience is always what it is because of a transaction taking place between an individual and what, at the time constitutes his environment" (Dewey 1938/1997). Thus, the concept of the environment is not to be understood as a natural and physical place but includes all situational circumstances such as toys, books and TV-screens that at the time constitute the environment.

One important aspect of Dewey's work is his focus on aesthetic experience. However, from a transactional point of view, the meaning of aesthetic experiences is not to be understood as an experience that is taking place as an outcome of an encounter with an "aesthetic event" such as for example a piece of art such as a text or a painting. Rather, the meaning of objects, either it be physical or textual objects can never a priori be judged by qualitative criteria of the object in it self. However, Dewey (1929/1984, 235) claims that aesthetic experience has the power to impact us.

> If we remind ourselves of the landscape with trees and grasses waving in the wind and waves dancing in sunlight, we recall how scientific thought of these things strips off the qualities significant in perception and direct enjoyment, leaving only certain physical constants stated in mathematical formula […].

This is also expressed by Rosenblatt (1994, 1995, 2005) who argues that 'aesthetic readings' (focusing on personal lived through experiences) are more powerful than 'efferent readings' (focusing on generating information) and that these readings are too often excluded from educational situations. This line of reasoning resembles the value given to aesthetic, emotional and embodied experiences as powerful for environmental meaning making in the aesthetic, experiential and ecological approaches to ESE discussed above. However, given the many different circumstances that can take part in meaning making, this issue becomes an empirical question in this thesis but has been an important starting point for the choice of text as empirical materials.

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A Pragmatic Discourse Approach

The first objective of the thesis is to analyse constitutive discursive rules and traits regarding environmental and sustainability education and environmental meaning making within outdoor education in a Swedish context and in ecocriticism with a particular focus on human-nature and human-text relationships. This is achieved through discourse analyses of central textbooks in outdoor education and of research and textbooks in ecocriticism. The discourse approach is based on pragmatism and transaction and Wittgenstein's philosophy of language and is summarised below.

In this thesis, discourse is broadly defined as "what is said and written and passes for more or less orderly thought and exchange of ideas" (Cherryholmes 1988, 2). Following Wittgenstein (1953), Cherryholmes (1988, 3) states that: "discourses are not composed by randomly choosing words and statements. Instead, rules constitute and regulate language use". This means that certain 'rules' govern texts as well as practice and that these rules help to construct a "discursive practice that produces a specific discourse" (Cherryholmes 1988, 3). Furthermore, "rules" also govern practices as well as vice versa, which means that '"practices, as with discourses are constituted by connected and overlapping sets of rules that organize and give them coherence" (Cherryholmes 1988, 3). Consequently, knowing constitutive rules implies knowing how to "proceed" within a specific practice (Cherryholmes, 1988, 4). Accordingly, pragmatist research deconstructs the distinction between text and practice and departing from this pragmatic assumption, no distinctions are made between discourse and practice in the discourse analyses undertaken in this thesis. Thus, the discourse analyses carried out in this thesis focuses on discourse, i.e. written language use in textbooks and research, but it is important to note that the results of the discourse analyses accordingly also say something about the culture of practice in which these texts are situated.

According to Cherryholmes (1988, 54-55) all texts have more than one meaning and can be read differently. Reading pragmatically means reading in order to clarify meanings. However, from a transactional outlook, the meaning making of texts cannot be determined solely on the basis of the texts in themselves. Or rather, the meaning of the texts cannot be 'found' in the texts themselves. This means that meaning making is viewed as ongoing transactions in encounters between readers and texts and in relation to specific aims (Rosenblatt 2005). However, despite this underlying premise, it is still possible to regard the texts as setting the agenda for which meanings and actions that are regarded as valuable within educational practices and in this sense they express educational 'ambitions' and are thus viewed as institu-

tional preconditions for students' meaning making (Östman 1995, 1996; Quennerstedt 2006).

Accordingly, the studies conducted in this thesis, view the investigated texts as 'actions' or 'events' which the students encounter and as such act and react in relation to. From an institutional perspective, these texts have power as they speak with an institutional voice and as such they will guide the readers in predetermined directions and as such constrain the students' possibilities to make meaning (Quennerstedt 2006). As such, the texts are regarded as reports of teaching content and as institutional offers of meaning (Östman 1995, 1996; Englund 2004; Quennerstedt 2006, 2008).

Pragmatism and Analysis of Situated Learning – Pragmatic Mobility Marker Analysis (PMA), Practical Epistemology Analysis (PEA) and Text Movability Analysis (TMA)

To investigate how different situated circumstances such as, text, place, mobility, social situations and previous experiences interplay in environmental meaning making two methods are developed in the thesis that are explained and applied in Paper III and IV. The methods are thoroughly described in each paper respectively and are briefly summarised here.

Situated within pragmatist educational research, analyses of practical epistemologies (PEA) were originally developed in order to analyse meaning making and learning processes, with a focus on the relation between experience and situation, primarily in science education (Wickman and Östman 2002a; 2002b). Since then, PEA has been used in order to investigate a variety of aspects in educational research. Theoretically, PEA is situated in a discursive tradition in which learning is viewed as discourse change. The main purpose of PEA is to systematically analyse everyday language in order to understand the process and content of meaning making as mutually constitutive in situated practice. The method makes use of four major concepts: *encounter*, *gap*, *relation* and *stand fast* (Wickman and Östman 2002a, 2002b; Almqvist 2005; Lundqvist 2009; Lidar 2010; Klaar 2013; Öhman and Östman 2007; Rudsberg and Öhman 2010). Of particular interest for this thesis is Maivorsdotter (2012) who uses PEA in order to investigate narratives and biographies, i.e. texts as objects of study, which is also the case in this thesis.

The purpose of Paper III is to explore the process of environmental meaning making and evocation of a sense of place by empirically studying student teachers' reading of Thoreau's *Walden*. In order to achieve this, a PEA is combined with a text movability analysis (TMA) in order to capture how relations between readers and texts are constituted in on going conversations. Hence, reading is investigated in relation to the purpose of reading by using a combination of Practical Epistemology Analysis (PEA) and Text Movability Analysis (TMA) in order to investigate how the Walden text, students previous experiences and the social situation interplay in reading, writing and discussing *Walden,* in relation to the students environmental meaning making and development of a sense of place.

The main aim of Paper IV is to investigate the significance of mobility as a circumstance in environmental meaning making. It focuses on how meanings of the environment emerge in transactions involving travellers, mobile machines and landscapes in Jenny Diski's travel narrative *Stranger on a train, Daydreaming and Smoking Around America with Interruptions* (2004). Here, a pragmatic mobility marker analysis (PMA) is developed based on the original concept of PEA in order to investigate the significance of mobility in environmental meaning making. Accordingly, the analytical focus is broadened to include a situation in motion from which follows that the investigated 'situation' is mobile rather than set in one place, as has been the case in previous studies in which PEA analyses are carried out.

Results and Summary of Papers 1: Outdoor Education in a Swedish Context

This chapter first introduces the field of outdoor education with particular focus on the Swedish context. Furthermore, the international outdoor education research field is reviewed in order to situate the summary of Paper I in a broader perspective.

Outdoor Education

In Sweden, there are two outdoor traditions both of which focus on outdoor environmental learning, the outdoor education tradition and the 'friluftsliv' tradition translated as 'free air life' (Brookes and Dahle, 2007) or 'nature free life' or 'open-air life' (Henderson 2007, 5) in English. The concept of 'friluftsliv' is predominantly a Nordic phenomenon. In Sweden, outdoor education is generally included as part of the school curriculum in contrast to 'free air life' that primarily takes place outside regular schooling (Öhman 2003). Outdoor education with an environmental focus has played an important part in Swedish education since the environmentalist movement of the 1960s. This is also evident in the Swedish national curriculum of 1969 (Sandell and Öhman 2010). Environmental issues have been given more emphasis in recent years in Swedish secondary and upper secondary schools as well as in higher education. In the current Swedish curriculum, 'sustainable development' is for example introduced for the first time and is frequently mentioned in different subjects. Consequently, Swedish schools are expected to develop educational practices in which students can develop the necessary skills to critically value moral judgements regarding environmental issues and learn to critically assess information and take part in environmental and sustainability discussions and decisions.

One definitions of outdoor education that is regularly put forward in the outdoor education literature is "learning in, through and about the outdoors" (Hammerman et al. 2001). Quay and Seaman (2013) regard the outdoor educational reforms as cyclic where different paradigms succeed each other. During the 1960s, outdoor education responded to the increasing concerns of the environment and adopted an emphasised environmental focus (Ham-

merman, Hammerman, and Hammerman 2001; Quay and Seaman 2013, 9) and came to be closely allied with environmental education. For example, Lugg (1999) mentions authors such as Martin (1992); Brookes (1994); Cooper (1994); Higgins (1996) and Nicol and Higgins (1998) as representing an outdoor environmental and sustainability education with the aim of educating "for an environmentally sustainable future" (Lugg 1999, 6). This line of development is also evident in a Swedish context (Sandell and Öhman 2010; Sandell and Öhman 2012).

In the outdoor education literature, the importance of having a relation to the environment is discussed in relation to the growth of modern globalised, urban and industrialised societies (Sandell and Öhman 2012). It is therefore possible to view the development of outdoor education as a critique of modern societal development and as a criticism of the theoretical educational culture that dominates Western societies (Bonnett 2007, 2013). In light of the present day 'eco modernistic' sustainability perspective that is entrenched in present day liberal market economy (Læssøe, 2010), outdoor education often comes across as a 'deeper' environmental and sustainability approach set in an deep ecology tradition (Naess 1973, 1989). Here, nature is valued for its on sake and where forms of knowledge other than propositional scientific knowledge, such as embodied and aesthetic ways of creating contact with and getting to know nature, are esteemed (Bonnett 2007). These points of views are summarised by Sandell and Öhman (2012, 42) who claim: "when we today speak about the consensus-like concept of 'sustainability', it actually hides important ideological tensions between 'sustainable development' (solutions within the system) and 'alternative progress' (a change of system)."

The relationship between outdoor experiences and the development of environmentally friendly behaviour is commonly stressed in the outdoor education literature, and the idea that outdoor education can promote sustainable development is commonly held. Since out door education takes place in 'real situations', nature is considered to have a special potential of fostering environmental behaviours due to the opportunities for sense experience and embodied experiences offered in outdoor environments. Furthermore, arguments for outdoor education for the environment often depart from an idea of a linear relationship between out door nature experience, development of a care for nature that in turn lead to sustainable actions towards the environment (Sandell and Öhman 2012). For example, Lugg (2007, 97) claims that "Outdoor and environmental education research suggests that educational experiences in outdoor settings can be significant in developing environmental sensitivity and knowledge". However, studies that have measured the effects of participation in outdoor education programmes on aspects such as the development of environmental knowledge and pro environmental behav-

iour (Barrett 2006; Bixler, Floyd, and Hammitt 2002; Bogner 1998; Bradley, Waliczek, and Zajicek 1999; Chawla 2008; Chawla and Flanders Cushing, 2007; Eaton, 1998; Ewert, Place, and Sibthorp 2005; Hanna 1995; Johnson and Manoli 2008; Kieffer 1994; Milton and Cleveland 1995; Nisbet, Zelenski and Murphy 2009; Palmer 1993; Rickinson et al. 2004; Schindler 1999; Smith-Sebatsto and Cavern 2006; Wilson 1996) have not been able to establish a straight forward connection between encountering nature in outdoor education programmes and the development of environmental concern. The results of these studies suggest that the relationship between nature encounters and the development of certain attitudes and behaviours is complex and depends on many interrelated factors and circumstances such as social interplay and students' previous experiences (Sandell and Öhman 2012). Furthermore, Sandell and Öhman (2012) warns against setting up outdoor education programmes based on the view of outdoor education as a pathway to environmental concern. Their concerns relate to the complexity of defining environmental problems and to the broad repertoire of environmental issues ranging from scientific issues to every day individual consumption and environmental ethical decision-making. In addition, Brookes (2004) criticises outdoor education research and the outdoor education discourse for ignoring specific geographical, social and cultural contexts when setting up outdoor education programmes.

Accordingly, a lot of outdoor education research has traditionally been positivist and has focused on investigations of students' attitudes and changed behaviour before and after outdoor education has taken place. As mentioned above, the research results are varied and it has not been easy to establish significant results since some studies show differences in attitudes and knowledge while others do not. It has been especially difficult to establish evidence on the expected connection between scientific knowledge of natural phenomena and students' attitudes and actions towards nature. However, it has been possible to establish connections between students' positive nature encounters during childhood as an important factor for the development of environmental engagement e.g. Palmer (1993). However, Milton and Cleveland's (1995) study shows that environmental attitudes are primarily formed through life experiences rather than through education in whatever form it might take.

In relation to this, discussions concerning how outdoor education should be defined abound in the outdoor education literature. For example, Lugg (1999) argues that

> Outdoor education will continue to remain on the 'fringe' as an extra-curricula offering in schools unless outdoor educators can clearly articulate its educational purposes, content and methods. Furthermore, we need to be able to

clarify what it is that makes outdoor education distinctive. That is, what makes it significantly different to other subjects and what educational imperatives exist to compel schools and education institutions to include outdoor education in the curriculum of the 21st century?

In contrast, investigations of what outdoor education becomes in situated practice are less common (Quay and Seaman 2013). Conversely, socio critical research on outdoor education is on the increase focusing for example on the contents of outdoor pedagogical programmes, different views of nature and different categories of nature experiences. These studies also elicit cultural and socio economic differences and differences in ethical and moral attitudes towards nature. In these studies, experiences of nature are regarded as being influenced by students' different social and cultural experiences of nature. For example, Gough and Sellers (2004, 19) depart from poststructuralist notions and thus try to overcome the traditional linear approach to research. They argue

> Our intentions are towards showing ways of processing research through generative deconstruction of striations, reflecting concerning matters, and performing smoothings . . . Outdoor education-researching is well suited to processual inquiry. It can be responsive to notions of felt rather than fabric. It can understand that striated is embodied in smoothness.

The long history of environmental and outdoor education in Sweden as well as the traditions of outdoor education and 'free air life' makes the Swedish outdoor education discourse-practice an interesting area of investigation in relation to the on going international discussions about the role of outdoor education and nature experience in ESE.

Even though, the research results regarding the relation between outdoor nature experience and development of environmental concern are vague, the notion that encountering nature has some role to play in fostering environmental consciousness is taken for granted in much of the outdoor educational literature. Despite this, outdoor education texts have not attracted as much attention in the outdoor education research as research on outdoor education practices. This can perhaps be understood in relation to the strong emphasis on 'the outdoors' as an alternative to 'the indoors' and the constitution of outdoor education as an educational alternative away from theoretical, scientific and rational 'text-based' schooling. However, Stewart (2004) acknowledges the value of regarding outdoor environmental experiences as text which is not a particularly common way of viewing nature and landscape in outdoor education (Baker 2006). Stewart (2004, 61) illustrates how she combines reading stories with outdoor visits without making value distinctions between text and reality. She views both as stories participating in meaning making and, drawing on Rose (2001, 61) regards stories as hav-

ing the potential to "change the way people think" and shape how humans relate to the land. Furthermore, Zink and Burrows (2008) investigates outdoor education textbooks and journals and identify how the value of outdoor education is constituted in relation to the difference in educational experience between outdoor and indoor education as well as in relation to what outdoor education is. Brookes (2004, 22) claims, "Outdoor education is frequently explained and justified in universal, absolute terms that are incapable of resolving the question of educational worth in any particular situation". As a result of an analysis of Outdoor education textbooks in an Australian context, he identifies three absolutist tendencies regarding outdoor education as: (1) focusing on individual learning only, (2) leaving the outdoors out of the discussion or treating nature as one thing, and (3) speaking of aims and purposes in abstract ways. He concludes that "outdoor education theory has failed ... to provide a framework from which outdoor education could be justified as education".

Paper I: Reading the Outdoors - an Analysis of the Swedish Outdoor Environmental and Sustainability Education Discourse Practice

In the light of the positioning of outdoor education as an educational practice that can contribute important insights on ESE, together with the long history of both environmental and outdoor education in Sweden, the first Paper of this thesis investigates the constitution of Swedish outdoor environmental and sustainability education discourse practice by analysing Swedish higher outdoor education textbooks. Outdoor education courses are offered by many Swedish universities mostly as freestanding courses in outdoor education at basic level or as part of teacher education programmes. Accordingly, the textbooks investigated in this study are intended for future outdoor education teachers and outdoor life leaders. The empirical material included in the study consists of the four most frequently used textbooks in Swedish university outdoor education courses. The selection of textbooks was made by reading through the course plans and compulsory reading lists for all the outdoor education courses offered at Swedish universities. For the purpose of the study, the four titles that occurred most frequently on the course lists were selected for analysis: *Pedagogy of Friluftsliv – an Environment and Outdoor Education for Knowledge, Sensibility and Quality of Life* (PF)[6], *Outdoor Pedagogy as Knowledge Resource – Local Environment Becomes*

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[6] The Swedish title *Friluftslivets pedagogik – en miljö – och utomhuspedagogik för kunskap, känsla och livskvalitet* has been translated by the authors. In the following, the abbreviation in brackets, PF, is used when referring to this textbook.

Learning Environment (OP)[7], *Nature Pedagogy (NP)*[8] and *Outdoor Didactics* (OD)[9].

The study departs from a pragmatic discourse educational research tradition and shares the same theoretical starting points as previous studies of socialisation content, political, moral and environmental meanings and discursive rules communicated in educational texts. The investigated textbooks are viewed as authoritative texts and as such are regarded as offering or prescribing certain actions and ways of being and neglecting others. The aim of the discourse analysis is to identify discursive rules in order to be able to critically discuss the role of outdoor environmental and sustainability education in an ESE context.

The results show that the textbooks include both outdoor education aims and environmental aims that taken together constitute the Swedish outdoor environmental and sustainability discourse practice. The textbooks provide particular potentials of making meaning of environmental and sustainability issues and developing environmental concern in outdoor education. Accordingly, the approach to environmental and sustainability education is constituted by making connections between views of sustainable development, the opportunities given to environmental and sustainability meaning making and the development of environmental concern in outdoor education. Seven discursive rules are identified:

1. Humans are separated from nature
2. Human-nature separation produces negative ways of living
3. Nature is our home
4. Nature is good for you
5. Connection to nature is a prerequisite for reorientation, change and sustainable development
6. Outdoor education offers exclusive opportunities for enhancing students' relations to nature compared to indoor education
7. Human-nature re connection is a prerequisite for environmental concern and sustainable development

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[7] The Swedish title *Utomhuspedagogik som kunskapskälla: närmiljö blir lärmiljö* has been translated by the authors. In the following, the abbreviation in brackets, OP, is used when referring to the textbook.
[8] The Swedish title *Naturpedagogik* has been translated by the authors. In the following, the abbreviation in brackets, NP, is used when referring to the textbook.
[9] The Swedish title *Utomhusdidaktik* has been translated by the authors. In the following, the abbreviation in brackets, OD, is used when referring to the textbook.

The potential of outdoor environmental and sustainability education is constituted in relation to the opportunities of experiencing nature offered by outdoor education. The constitution of outdoor education can be summarised as an alternative educational practice that makes reconnection possible, and as an educational situation that facilitates contact with our natural and cultural origins and can help us to understand that we are part of, dependent on and attached to nature. As such, the Swedish outdoor environmental and sustainability discourse practice is constituted as offering an alternative and more genuine relation to nature, compared to the more shallow relation to nature that students experience in everyday life and in every day education that is constituted as supporting disconnection rather than connection. Compared to the texts encountered in everyday indoor educational practice, the outdoors is portrayed as an alternative learning environment. Accordingly, nature is constituted as having particular values and qualities that are important for achieving the aims of outdoor environmental education and as a pedagogical alternative that is geographically located away from urban culture and traditional educational domains. Environmental and sustainability problems and challenges are discussed in terms of "a crisis" and are constituted as moral, aesthetic and existential, rather than technological and economic. The ways, in which human-nature relations have changed throughout history, i.e. from a holistic perception of and intimate relation with the environment to a rational and scientific perception of the environment, play an important role in the constitution of outdoor education as an environmental and sustainability education. The textbooks offer the meaning that outdoor education is a valuable method for environmental and sustainability teaching and learning, and as a method through which future sustainable development can be achieved.

Furthermore, the Swedish outdoor environmental discourse practice is constituted by merging environmentalist and educational meanings together. From an environmentalist perspective, present day culture is constituted as destructive and in crisis, humans as disconnected from nature and present day educational culture as enforcing destructive values that maintain unsustainable development. This implies that through the textbooks, the students are only offered one way of viewing nature, culture and the human-nature relationship and, as such, are socialised into one particular view of what constitute an 'accurate' relation to nature and of the changes that are needed in order to take present day humans and nature out of the crisis. Following this environmentalist starting point, the outdoor environmental and sustainability discourse practice aims for transformation of both everyday life and everyday educational practice. Accordingly, the Swedish Outdoor educational discourse practice takes a normative and transmissive approach to ESE in that it offers only one route towards sustainable development, i.e., nature experience and cultural and educational reformation. Hence, the chief

goal of outdoor environmental and sustainability education is to enrich human-nature relationships through nature experience and such experiences are in turn constituted as crucial for reorientation towards sustainable development. Consequently, the Swedish outdoor environmental and sustainability education discourse-practice is closely associated with a change of behaviour approach. Accordingly, if environmental and sustainability education is viewed as a practice in which students should be given the opportunity to discuss and value different views of environmental and sustainability issues, this outdoor environmental and sustainability education is perhaps not the best option. The systematic exclusion and generalised treatments of urban perspectives, text-based learning and technological development and the value distinction between natural and human-built environments shown in this study do not open up for other interpretations of these issues.

Additionally, the value of outdoor education is as much constituted in relation to what indoor education is not as to what outdoor education is. Indoor education is generally described in very negative terms as a completely different educational situation to ESE than outdoor education and the discourse practice is as such constituted through dualisms between indoor and outdoor, theory and practice, mind and body and text and reality. If outdoor education has important contributions to make to environmental and sustainability meaning making and learning, it is possible that some of these will be lost due to the use of dichotomised language. A discussion about how students could be helped to make connections between the different experiences offered in outdoor and indoor education would have helped to overcome much of the dualistic thinking. This also concern the constitution of the relationship between nature connection and the development of environmental concern which is constituted as automatic. Very little is said about the step from connection with nature to the development of environmental concern, to a change in moral outlook and how a connection to nature makes us sustainable citizens who make sustainable choices and act sustainably. The fundamental value given to specific nature experience as the starting point for sustainable development and environmental concern presupposes that all learners experience nature in the same positive way. This line of reasoning assumes that the surroundings encountered by an outdoor education student automatically become a specific valuable environment. This reveals a view of environmental meaning making as a discontinuous process in which students' previous experiences are overlooked. In general, the negative treatment of present day children and their culture, their bad habits and their lack of interest in nature can be interpreted as oppressive. Therefore, the Paper addresses the question of what an outdoor environmental and sustainability education in which students' experiences were acknowledged and given as equal a value as the prescriptive experiences presented in the textbooks would be like. Furthermore, the paper questions the static view of place

where certain places (natural) are regarded as valuable for inhabitation while others are not (urban and virtual places) and queries what an outdoor environmental and sustainability education would be like if the distinction between placeless and placed were not determined before hand and if mediated, fluid and mobile experiences were acknowledged. What if such experiences would further enhance young people's interest and engagement in environmental and sustainability matters? If education is viewed as helping to shape relationships with the natural and cultural world and the textbooks are regarded as powerful tool in this process, the readers of these textbooks are socialised into one view of outdoor ESE.

Results and Summary of Papers 2: Ecocriticism

This chapter first introduces the field of Ecocriticism including the international research field as well as a brief review of Swedish ecocriticism. One aim of this thesis is to investigate approaches to environmental and sustainability education in ecocriticism. Thus, this section particularly focuses on how the relationship between ecocritical readings and environmental meaning making and how didactical questions is constituted in the ecocritical research field. Furthermore, particular attention is paid to the genre of nature writing since the empirical investigations of environmental meaning making carried out in the thesis investigates this genre. This is followed by a summary of Paper II in which the pragmatist Louise Rosenblatt's (1994, 1995, 2005) transactional theory of literature in relation to ecocriticism and what such a perspective could offer climate change education research is explored.

Ecocriticism

Ecocriticism is a relatively new research field that developed as a response to the contemporary issue of the global environmental crisis and concerns the study of literature from an environmentalist or ecological point of view has attracted increased attention in recent years. For example, Rachel Carson's *Silent Spring* published in 1962 is considered as a very important departure for public reactions against human exploitations of nature and the book is read in literature classrooms all over the world. At the beginning of the book, an idyllic rural pastoral landscape is portrayed in which people and nature live in harmony. Suddenly by eternal forces, nature is silenced and destroyed. Metaphorically, Carson criticises the industrial development and the use of pesticides in order to speed up the growth and increase agricultural production. *Silent spring* is both a scientific and literary text. Even though *Silent Spring* was acknowledged and widely discussed, and is regarded as having had a great public impact on humans' understanding and perceptions of the relationship between humans and nature, this book, and other environmental literary texts, are rarely in focus for didactical inquiry in ESE-

research. However, ecocriticism is an internationally growing interdiscipli-nary research field with the intention of "greening the humanities" and is beginning to take shape as a field of study within environmental education (Garrard 2010). According to Garrard (2010, 233) "Ecocriticism is centrally, literary and cultural criticism, carried out from an environmentalist stand-point". Ecocriticism is primarily taught in literary studies classes and fo-cuses of investigations of representations of nature and culture in literary texts and includes discussions about literary tropes such as pollution, pas-toral, wilderness, apocalypse, dwelling, animals and the earth (Garrard 2004).

In a Swedish context, courses in ecocriticism are offered as freestanding courses by Literary Studies Departments at five Swedish universities. Among the most common textbooks are *The Ecocriticism Reader* (1996), *Ecocriticism* (2004) and the Swedish publication *Ecocriticism - Nature in Literature An Anthology.[10]* (2007) that includes analyses of Swedish and international texts. By reviewing book titles included in the reading lists for courses in Ecocriticism offered at Swedish universities, three approaches to ecocriticism can be identified; (1) The international environmental literature approach including classical international nature writing texts such as Tho-reau's *Walden*. (2) The Swedish environmental literature approach in which Swedish ecological and environmental writers are in focus and (3) The post-apocalyptic Science Fiction approach including titles such as Margret At-wood's *Oryx and Crake* and Don Delillo's *White Noise*.

In line with the turn from viewing environmental and sustainability issues as problems about the environment that can be solved through scientific under-standing and skills the humanities entered the field of environmental and sustainability education. Through the shift in focus towards value dimen-sions, the disciplines of the humanities have had a more emphasised role in ESE. Thus, recognition of the value laden and broad content of environmen-tal and sustainability issues has led to discussions of how to tackle ESE from broader culturally contextualised perspectives. In this tradition, the environ-mental crisis is regarded as a 'cultural crisis' rather than an environmental crisis (Mayer and Wilson 2006, 1). In general terms this implies the need to include environmental aspects in areas that have traditionally not dealt with environmental questions and means a reformulation and introduction of en-vironmental perspectives in disciplines such as cultural studies, literary stud-ies and language teaching (Mayer and Wilson 2006, 1). Mayer and Wilson (2006, 1-5) claim that:

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[10] The title is translated from its Swedish original "Ekokritik - Naturen i litteraturen En an-tologi" (2007) by the author.

the classic objectives of environmental education – the creation of aware-
ness and concern about the environment, the creation of environmental
knowledge, and the acquisition of skills to identify, evaluate and solve
environmental problems – must also be reached by means of education in the
various disciplines of the humanities […].

Accordingly, human-nature relationships are at the heart of ecocritical in-
quiry. Traditionally, literary studies have not been particularly interested in
questions concerning environment and nature from a content perspective and
in relation to present day environmental and development issues. In general,
environmental settings have not been analysed for their own sakes but rather
have been treated like a scenes of plots. Ecocriticism thus introduces por-
trayals of human-nature relationships in an environmental context as study
objects.

Garrard (2010) claims that ecocritisicm has shown interest in pedagogical
inquiry since its early stages and in *Teaching Ecocriticism and green cultur-
al studies*, Garrard (2012, 9) mentions that "the point of ecocritical pedagogy
is to make existing environmentality explicit, and, above all, sustainable".
Thus, the link between ecocriticism and environmental and sustainability
education is expressed from an ecocritical point of view. Primarily in the
'first wave' of ecocriticism the primary purpose of ecocritical practice was to
develop ethical relationships to the natural world and in the following 'se-
cond wave', a widener scope questioning the strong focus on the natural
world was included (Garrard, 2012). First wave ecocritical teaching focused
on place based approaches combining direct experience and close reading of
American nature writing (Buell 2005) and is still prominent (Garrard 2012
6). In the first wave 'ecocentric approach' to ecocriticism, the main focus
was on recovering emotional and poetic subjectivity and enhancing en-
chantment of the natural world often in opposition to present day discon-
nected and destructive culture (Mayer and Wilson 2006).

Accordingly, ecocriticism investigates literature from an environmentalist
point of view and deep ecology is a common perspective as a starting point
for ecocritical readings particularly in the 'ecocentric approach' (Garrard
2012, 20). Concurringly, ecocriticism is constituted as challenging anthropo-
centric approaches and "urges a profound reconceptualisation and practical
change in our relationships with the full range and diversity of 'Earth Oth-
ers' (Garrard 2012, 7) which implies that ecocritical education can be placed
within an normative approach to ESE and offer environmental ethical ideas
that are presented as correct through the choices of literature used in ecocrit-
ical classrooms. This relates to the most commonly cited aims of ecocriti-
cism as literary criticism to "study the relationship between literature and the
physical environment" (Glotfelty 1996). Kerridge (1998) maintains that the

focus of ecocriticism is on the role of nature for production and reception of literary texts, while Love (1996, 237) claims that: "the most important function of literature today is to redirect human consciousness to a full consideration of its place in a threatened natural world". Accordingly, ecocriticism argues for an ontological materiality and realist aesthetics of the world and emphasises the physicality of nature and ecocriticism aims at increasing readers' ethical outlook and awareness of the fragile state of present day ecosystems Even though reading is the primary activity, ecocritical education is often combined with outdoor educational activities (Garrard 2012).

Furthermore, Love (1996, 237-238) claims that the reason why genres such as nature writing and literature of place have received renewed popularity is "because of a widely shared sense […] that the current ideology which separates human beings from their environments is demonstrably and dangerously reductionist. Because the natural world is indubitably real and beautiful and significant. Paradoxically, recognizing the primacy of nature, and the necessity for a new ethic and aesthetic embracing the human and the natural – these may provide us with our best hope of recovering the lost social role of literary criticism". Thus, according to Love, one of the aims of ecocriticism is to change how people conceptualise the environment. Acknowledging the 'primacy' of nature is considered crucial for bringing about change in environmental behaviour. Also, the present worldview needs to be replaced. Mayer and Wilson (2006) acknowledge the power environmental texts can have for environmental concern

> Environmentally relevant texts, i.e. texts that motivate thinking about and discussion of any facet of the wide spectrum of interaction between humans and their natural environment (including that of conceptualisation), can thus potentially contribute to the development of an environmentally informed sense of self that is able and willing to act in environmentally responsible ways.

The ecocritical field is far from united, however. A diversity of terms occurs in the literature. A few of the most frequent are: literary ecology, ecological criticism, ecopoetics, environmental literary criticism and green cultural studies. However, it is generally agreed that

> All ecological criticism shares the fundamental premise that human culture is connected to the physical world, affecting it and affected by it. Ecocriticism takes as its subject the interconnections between nature and culture, specifically the cultural artefacts of language and literature. As a critical stance, it has one foot in literature and the other on land; as a theoretical discourse, it negotiates between the human and the nonhuman (Glotfelty, 1996: xix).

Accordingly, ecocriticism is constituted as an educational practice that can help promotion other ways of relating to the world. Ecocritical research, as a literary studies discipline, focus on analyses of texts rather than didactical issues such as the role of situation and the role of the interaction between readers and texts in relation to environmental meaning making. However, Parham (2006) critically examines the tension between the underlying premises, methods and goals in environmental pedagogy in the fields of literary and cultural studies and claims that there is a problematic relationship between the authoritative incitements included in such concepts, such as environmental awareness and fostering environmental action and the democratic premises which are regarded as integral part of present day educational practices. Parham (2006) also critically examines ecocritical contributions to EE. He claims that the ecocritical field has developed its own canonical texts, mainly by nature writers whose views of the relationship between human and non-human nature are often based on romantic notions of nature. Moving beyond critical pedagogy, Parham suggests that "more abstract education in critical thinking might come prior to, even take precedence over, a specific commitment to an education that "raises awareness" (Parham 2006, 19). Furthermore, Gerhard (2006) discusses the complex issue of consciousness raising and what it actually means. It is a valued concept in ecocritical inquiry, but what does it mean in practice? Gerhard (2006) claims that the term is widely used but never really defined.

Furthermore, the idea that stories can enhance our understanding of other people and our environments, both in the past and in the future is common. That they also can instil values in students is often take for granted. For example, as expressed by Buell (1995, 45) "Environmental texts can act as carriers or agents of ecocentricity". Furthermore, Gerhard (2006) states: "If the stories they tell relate to our personal experiences, they will reach us intellectually and emotionally and provide ideas of how to conceive of ourselves and how to understand and cope with the world we live in". The idea of literature as a springboard to environmental and sustainability meaning making and learning dominate the ecocritical discourse. For example, Kwakfwaan (2011, 39) claims that "Literature as an interdisciplinary subject area is a treasured vehicle for sustainable development through environmental education" and provides a list (drawing on Amaechi 2005; Ibitola; 2005) of benefits of teaching and learning literature in relation to achieving environmental and sustainability aims:

I   Literature reserves a fundamental educative function as it strives to improve the lot of humanity through exposure to knowledge in every facet of life.

II	Literature makes constructive commentaries and criticism of society/life thereby informing society of its drift towards development or destruction with a view to balancing society's focus.
III	Literature is a formidable tool for the propagation of history, politics and culture.
IV	Literature provides a diagnostic, analytic, preventive and prescriptive commentaries on/to life.
V	Literature is didactic in orientation.
VI	Literature is a tool for the preservation of culture.

Furthermore, Tiiu (2004) claims: "While literature can reduce nature to a specific ideological or humanistic agenda, it can also represent an alternative kind of human-nature relationship facilitating green consciousness and place-bonding". Furthermore, Tsekos et al. (2012) rhetorically asks "Shouldn't we, therefore, be opting for ascribing a more active role to the ecological literature in education in order for environmental awareness to be shaped?" However, how students learning processes unfold and how students' responses to the reading of environmentally relevant literature are carried out has not been paid attention to. Furthermore, there seems to be a lack of theoretical discussions regarding the relationship between readers, text and meaning making. The assumption that literature is powerful and can help enhancing environmental meaning making and students' environmental values, is often expressed in the context of literary theory rather than in relation to theories of meaning making and learning, or without methods for investigating the relationship between readers and texts with which the studies conducted in this thesis aim to contribute with.

These assumptions were the starting point for the two studies investigating ecocriticism carried in the context of this thesis. Paper II, *Ecocriticism and Climate Change Education Research* introduces the pragmatist Louise Rosenblatt's (1994, 2005) transactional theory of literature in relation to ecocriticism and what such a perspective could offer climate change education research. Paper III, *Reading Walden(s)* investigates students' environmental meaning making in relation to the reading of Thoreau's *Walden*, one of the key nature writing texts within first wave of the ecocentric approach to ecocriticism.

In sum, in ecocriticism, the idea that literary texts are powerful for environmental meaning making and learning is often stressed. Furthermore, that language learning and critical engagement with various types of texts mean an active production of knowledge is established by which language is constituted as the key medium in which an environmentally informed sense of self develops (Mayer and Wilson 2006). This line of reasoning can be contrasted with the proponents who argue for the "direct" contact with nature as

necessary for development environmental concern as for example is common in outdoor education in which text-based encounters are devalued compared encounters of physical nature as illustrated in Paper I of the thesis. In that respect, there is need for empirically investigate this issue which is done in Paper III. Paper II is summarized below and Paper III is summarised in the next section in which the investigations of environmental meaning making are presented.

Paper II: Readings for Climate Change: Ecocriticism and Climate Change Education Research

This Paper investigates literary critic Louise Rosenblatt's transactional theory of reading in the context of ecocriticism and suggests a few possible climate change education research questions. Furthermore, it discusses the role and place of aesthetic experience in environmental meaning making from a transactional perspective and suggests further empirical investigations of environmental meaning making in relation to the reading of literature.

The paper departs from one of present day's most pressing public anxieties, namely climate change and the increased interest in cultural responses such as the work done by the Cape Farewell organisation in which artists of different kinds produce art as a response to climate change. The paper also describes other cultural approaches such as art exhibitions dealing with human-nature relations and other climate change related issues looked at through the lens of art. Taken together, such initiatives often stress the importance of addressing and communicating climate change and matters related to it beyond scientific expressions. However, the paper suggests that such aesthetic responses are not new and that the themes of human struggle for survival and post apocalyptic scientific literature were produced long before the awareness of present day climate change. Nonetheless, it was not until quite recently that literary scholarship began paying attention to environmental issues.

Against this background, the Paper presents literary critic Louise Rosenblatt's transactional theory of reading in the context of ecocriticism, and elaborates a few possible climate change education research questions. The history of ecocriticism is presented and pays particular attention to the focus on non-fiction nature writing and the ecocritical ambition of contributing to the enhancement of environmental awareness and environmental concern and the early marginalisation of other narratives such as urban narratives and texts portraying destructive environments. In addition, present day ecocriticism has broadened to include a variety of narratives such as film and art-

works. Furthermore, the Paper pays attention to the lack of empirical investigations carried out in order to investigate the relation between ecocritical education and environmental meaning making and learning. Such investigations are encouraged and argued for as a means of qualifying the discussion about the meaning of ecocritical readings for learning about issues related to climate change, and the Paper suggests an explicit research focus on students' responses to the reading of texts used in ecocritical classrooms as a fruitful way of contributing with further knowledge of the role of ecocritical readings in climate change education.

The suggested research approach is based in Louise Rosenblatt's theory of reading as a transactional process which serves as a guide for the discussion about research connections between ecocriticism and climate change education research. Rosenblatt (1994, 1995, 2005) develops her theory of reading as a transactional process in which meaning making is viewed as being created in encounters between readers and texts. By using the concept of transaction, rather than interaction, Rosenblatt (1995, xvi) emphasises the constituent relationship between reader and text:

> Interaction ... suggests two distinct entities acting on each other like two billiard balls. Transaction lacks such mechanistic overtones and permits emphasis on the to-and-fro, spiralling, nonlinear, continuously reciprocal influence of reader and text in the making of meaning.

Rosenblatt distinguishes between 'efferent' and 'aesthetic' readings, thereby suggesting that it is possible for readers to have different stances, or different 'focus of attention during reading-events. Efferent stances focus primarily on what will remain as the residue after the reading – the information to be acquired, the logical solution to a problem, the actions to be carried out' (Rosenblatt 1994, 23) involving questions such as analysis of characters, summaries of plots and how nature is portrayed to particular texts. Aesthetic readings on the other hand, directs attention is directed to what happens during the reading-event, which means that the reader pays attention to personal associations, feelings, and ideas and "the reader's attention is centred directly on what he is living through during his relationship with that particular text" (Rosenblatt 1994, 25). Such readings focus on eliciting readers' personal feelings and opinions in relation to the reading. The difference between them is in the Paper illustrated by illustrating efferent and aesthetic questions to Thoreau's *Walden* quote:

> I went to the woods because I wished to live deliberately, to front only the essential facts of life, and see if I could not learn what it had to teach, and not, when I came to die, discover that I had not lived. (http://thoreau.eserver.org/walden02.html)

An 'efferent' approach would for example focus on what Thoreau means by 'to live deliberately', what he considers to be 'the essential facts of life' or his style of writing. In contrast, an aesthetic reading would direct students' attention to their immediate responses to the passage, thereby giving them the opportunity to express their personal thoughts in relation to the reading. Rosenblatt gives aesthetic readings particular value within education and emphasises their importance for the development of self- understanding. She argues, "In contrast to the analytic approach of the social sciences, the literary experience has immediacy and emotional persuasiveness" (1995, 7). Rosenblatt's approach suggests that the same text can be read both aesthetically and efferently (Rosenblatt 1994, 25) depending on which attention, or which stance is adopted. The purpose of the reading will accordingly shape the meaning being made in the reading. Therefore, for clarifying the relation between ecocritical readings and climate change education, the Paper suggests that it becomes relevant to investigate what "readers do in different kinds of reading" (Rosenblatt 1994, 23) related to climate change topics. In order to be able to make claims about the place of and the meaning of literature within climate change education, knowing what readers do and which activities they carry out in relation to the reading of various climate change texts may contribute to the development of a climate change education based on empirical research.

From this background, the Paper suggests a number of potential areas for climate change education research. The first suggestion concerns investigations of empirical studies of students' responses to ecocritically relevant texts in order to find out which meanings are produced in these encounters. Empirical studies of students' responses to ecocritically relevant texts would also make it possible to test the potential of literary investigation for promoting environmental awareness and sustainable thinking. Furthermore, the Paper suggests taking Rosenblatt's ideas of aesthetic and efferent reading stances into account in order to investigate what stances dominate ecocritical teaching. Are the students given the opportunity to 'live through' the literary texts and/or are efferent stances more common? Is there equal emphasis on efferent and aesthetic readings within ecocritical teaching? How are literary works related to 'real' environmental and development challenges? In relation to climate change education research, the Paper suggests that it would also be relevant to investigate students' responses to different kinds of texts within the climate change discourse by elaborating on different reading stances. For example, how might aesthetic readings of the Intergovernmental Panel on Climate Change (IPPC 2007) reports and efferent readings of climate change poetry and fiction help enhance understanding of climate change issues?

The second suggestion concerns investigations into how climate change matters are addressed within ecocritical teaching. Is ecocritical teaching still traditional in the sense that the genre of nature writing dominates ecocritical classrooms? The challenges we are facing when it comes to the future of urban development in a changing climate make texts portraying such issues crucial from a climate change education perspective and therefore highly relevant for climate change education research. In addition, the Paper suggests that it becomes significant to continue the critical discussion concerning the identity of the texts in focus for ecocritical teaching in relation to climate change. Issues such as adaptation and mitigation, insecurity and conflicting values are all crucial in the climate change debate and for all the people affected by climate change. Whether such issues are addressed in ecocritical classrooms is suggested as another relevant research question to be addressed in climate change education research.

Finally, the Paper suggests that further investigations of the role of aesthetic experiences could be fruitful for climate change education research. Based in the common assumption that artistic works such as literature or works of art automatically led to experiences that are valuable for environmental learning of aspects such as for example climate change, Rosenblatt's efferent and aesthetic approaches to reading could prove be fruitful in the quest to increase knowledge about the relation between reading and environmental learning outcomes. Finally, in developing the arena of climate change education research, the Paper suggests that it is important that the arts do not only become mere appearances in relation to more established fields such as climate change science in the ongoing discussion about climate change in general and climate change education and research in particular. Viewing the arts as an equally important participant in addressing issues related to climate change – with a status that is equal to scientific observations and investigations – will hopefully lead us a bit closer to the goal of a sustainable future in a changing climate.

Results and Summary of Papers 3: Investigations of Environmental Meaning Making

Environmental Meaning Making

This chapter summarises the empirical investigations of how different situational circumstances such as, text, place, mobility, social situations and previous experiences interplay in environmental meaning making that are carried out in Paper III, IV and V. The investigations of the approaches taken to environmental and sustainability education and the constitution of environmental meaning making and learning in outdoor education and ecocriticism, i.e., Paper I and II in this thesis, a need to empirically investigate certain assumptions regarding the role of nature and the role of texts became evident. Within outdoor education as well as ecocriticism, encountering nature, both outdoor nature and textual nature, are constituted as valuable means for environmental and sustainability meaning making and learning as well as for developing environmental awareness and environmental concern, and a 'deeper' relation to the natural world. However, within these practices, the relation between encountering nature and text and the expected outcomes are often constituted as linear and as involving separate entities such as nature and the learner and text and the reader in which nature and text have specific impacts on the learner. Consequently, situational circumstances are not viewed as interplaying in specific situations as is the case if these issues are viewed and investigated from a transactional point of view. In relation to the constitution of meaning making as linear and as involving separate entities, this thesis investigates environmental meaning making from a transactional point of view in which situational circumstances are viewed as interplaying in transactional practice aiming to clarify how situational circumstances interplay in environmental meaning making.

Paper III: Reading *Walden/s.* An Ecocritical Investigation of Students' Environmental Meaning Making

This Paper departs from ideas that are commonly expressed within the Ecocritical discourse concerning the relationship between the reading of literary texts and the development of "sense of place". These ideas concern the idea that children spend too little time out of doors and are therefore disconnected from nature that is often constituted as problematic and destructive from an ecocritical, environmentalist as well as an environmental education perspective. Therefore, a relation to nature needs to be restored. Furthermore, the Paper departs from the often taken for granted idea that artistic expressions such as literature is a powerful springboard for environmental and sustainability meaning making as well as for environmental concern. In an ecocritical context, the genre of nature writing has had a special standing in relation to this, because nature writing texts are constituted as particularly valuable for raising awareness of the place of humans in the world by connect or reconnect humans to their environment that in turn is considered vital for ecological concerns in the 21th century. The reasons given for this often concern the aesthetic and embodied experiences literature evokes as well as how outdoor and literary place-based approaches to environmental and sustainability education contribute to educational transformation and solutions to present-day environmental and sustainability challenges, including the human-nature disconnection. The lack of empirical investigations and methods for investigating environmental meaning making was a another important motive for carrying out this study which explores the process of environmental meaning making and evocation of a sense of place by empirically investigate student teachers' reading of Thoreau's *Walden*.

In this Paper, the question of what the reading of texts can lead to and contribute with in terms of environmental meaning making and the development of a sense of place is regarded as empirical. The analysis is guided by the following research questions:

1. Which textual situations do the readers note during their reading of *Walden*?
2. Which environmental meanings are evoked in the students' individual readings'?
3. Does the reading and the peer discussions evoke a 'sense of place'?

4. How do situational circumstances interplay in the students' environmental meaning making in communication with peers in relation to the reading of *Walden*?

The study departs from a pragmatic transactional perspective on meaning making, learning and reading. In this perspective, reading is viewed as an activity that is situated in social practices influenced by John Dewey's and Louise Rosenblatt's transactional theories. Rosenblatt's transactional theory of reading and writing is particularly important for the development of the methods used in the study. Her notion that texts are *produced* rather than *read* and that all readers produce and evoke texts differently depending on the context and purpose of the reading are important starting point for the lay out of the investigation. In such a perspective, meaning is neither located in the text nor in the reader, but is constituted in the transaction between reader and text. It is therefore significant to investigate these transactions rather than for examples readers' experiences and opinions before and after a reading. Furthermore, in Rosenblatt's perspective, such a transactional process is not solely individual, does not just depend on the individual transaction between the individual and the text and does more than evoke individual previous experiences. Rather, readings are social activities that occur and are becoming in certain contexts and are situated in different social settings. Accordingly, such circumstances also influence meaning making in relation to the reading of texts which makes it important to investigate reading in social situations. Rosenblatt concludes: "our 'readings' and understandings of texts are simultaneously individual and contextual, thus implying that the understanding and meaning making of texts is conditioned by readers, texts and the situations in which the readings and meaning making take place" (Rosenblatt 1995).

The setting for the study was a science course for 14 future science teachers in an "Education for sustainable development" (ESD) module. The module focused on readings of nature writing texts such as Rachel Carsons *Silent Spring* (1962), and Thoreau's *Walden* as well as texts by a Swedish nature writer. However, the particular focus of the study is the students' readings of *Walden*. The activities that were conducted in relation to the reading of *Walden* were planned by the researchers and teachers in collaboration. As researchers, we wanted the process to be as less interventionist as possible. The activities were set up as follows:

1. Students were asked to read the chapter 'Where I Lived and What I Lived For' in Thoreau's *Walden*. This particular assignment was to be completed at home. The chapter was chosen because it deals with place and how we dwell in the world.

2. While reading, the students were instructed to keep a reading journal. The assignment was to select quotes from the text that the students found interesting for some reason, note them down and then write a personal reflection on the quote in a reading journal.

3. The students were asked to bring their journal entries to a group discussion that was then audio-recorded. The class was divided into three groups, with 3-4 students in each group. The researchers did not participate at the time of the recording. During the conversations the students were instructed to discuss their journal entries, i.e. their selected quotes and accompanying comments.

In order to investigate the process of environmental meaning making and evocation of a sense of place, two analyses were conducted. The first step analyses the students' journal entries, while the second step analyses students' talk about their readings, i.e. what they recorded in their journals.

Hence, in this Paper, the students' reading of *Walden* is investigated by using a combination two analytical methods that are developed for the particular purposes of this study, Practical Epistemology Analysis (PEA) and Text Movability Analysis (TMA) – in order to identify the transactions between the reading of *Walden* and the development of a sense of place. PEA is situated within pragmatist educational research and was initially developed in order to analyse meaning making and learning processes in science education but has since then been applied in various educational investigations. PEA covers both processes and content of meaning making in order to be able to investigate mutually constitutive circumstances in situated practice. Four analytical concepts: *encounter, gap, relation and stand fast* are used in traditional PEA. In this Paper, PEA is used to analyse the students' communication in relation to their readings and journal writing. The analytical focus concerns what *stands fast* (re-actualisation of previous experiences) for the students, the *encounters staged* and the *relations* created while producing environmental meanings. In PEA, whole events in which students stage or become part of encounters are analysed, which in this study means that the students conversations were analysed focusing on how relations are established in the situated reading activity.

Text movability analysis (TMA) has been used to capture different ways of talking about or moving within texts and reading is viewed as moving around in a changing landscape of the text, i.e. textmovability. The theoretical underpinnings of TMA departs from researchers such as Langer (1995), Rosenblatt (2005) and Luke and Freebody (1990). The concept is based on the assumption that being able to actively relate to a text is fundamental for learning and development. It is also assumes that students' learning is en-

hanced if they are given the opportunity to talk about this relationship. Previous explorations of text movability shows that students' ability to talk about a text that they have read or written can be discussed in terms of three major ways of relating to the text: text-based movability, associative text movability and interactive text movability. These different types of text movability reflect the different ways of using and constituting the text. A high degree of text-based movability is characterised by a dynamic relationship to the text/text assignment, where the student can extract and explain details as well as discuss the general message and perspective of the text. Further, a student who shows a high degree of associative text movability reflects on the text in relation to previous knowledge and experiences. This associative movability can help the student to merge an interpretation of the text with his or her previous understandings. Finally, a student who shows a high degree of interactive text movability is also able to discuss the purpose and addressee of the assignment. Thus, a student who shows a high degree of text movability could be said to stand in a dialogical relationship with the text, to be an active creator of the text message and to be a co-creator of the social practice in question. The opposite is true for a student with a low degree of text movability.

In this study, the analysis of text movability (TMA) is further developed and used in order to investigate how the students relate to the text in terms of what they note in their journal entries, i.e. the function of the text in the students' journal entries and in the students' discussions. By using TMA in the analyses of the students' discussions, we could identify differences and similarities between how students relate to the text individually in the journal entries and how they relate to the text in the student discussions. Each journal entry was categorised according to which type of text movability is expressed and the same process was applied in relation to the utterances in the communications between the students. The following analytical questions served as starting points for the analyses carried out in the Paper:

Analysis of students' journal entries

1. Which textual situations do the readers note during their reading of *Walden*? In order to answer this question, a summary of the quotes chosen by the students is presented to illustrate the possible variations in how the text is approached and evoked.
2. Which environmental meanings and senses of place are evoked in the students' individual readings'? The students' journal entries were categorised in terms of the environmental meanings made

and the expressions of sense of place in relation to text movability.

Analysis of the students' discussions

1. How do situational circumstances interplay in the students' environmental meaning making in communication with peers in relation to the reading of *Walden*? In order to answer this question, a PEA combined with a TMA analysis is carried out.
2. Which environmental meanings and senses of place are evoked in the students' discussions? In order to answer this question, a combined PEA and TMA analysis is conducted.

The results of the study shows that the students chose various quotes that illustrates that despite the reading of the same text, the students' individual preferences and readings differ even though the reading took place in a specific educational situation. However, one quote was particularly popular and occurred in five journal entries: *[…] for a man is rich in proportion to the number of things which he can afford to let alone.*

This quote together with the students comments in the journal entries served as the starting point for the TMA analysis of the students' journal entries which shows that the dominating way of moving around with the text is through associative text movability. This implies that the students make use of their previous experiences in the reading. The analysis of the relation between the reading and development of "a sense of place" shows that different meanings of the text are evoked in the encounter between the text and the reader even when the same quote has been chosen. The variety of the meaning making of the text is shown and we were also able to see that the students' previous experiences are involved in the meaning making. This means that despite the same quote being chosen, different meanings are created in relation to the reading of the text, and the text is given different roles in the meaning making. This illustrates that the students' previous experiences give rise to different foci of attention, and different experiences are re-actualised.

'Sense of place' is only expressed in one of the journal entries. Here, the re-actualisation of personal happiness is clearly important for this student's creation of a self-concrete personal relationship in relation to the reading of the text. These findings illustrate how the students' personal previous experiences give rise to different foci of attention, in that different environmental meanings are made from the same text.

The analysis of the students' discussions shows that the students create relations to other students' statements and to their previous experiences. It can be said that all the statements involve students responding to what other students have said and developing these by adding their own knowledge and experiences. At the same time, it means that an individual's previous experiences of the text are put in a new context, in which they are developed, deepened, nuanced or even dismissed. We could identify that the students change positions, agreed and disagreed with each other and problematised their opinions. The analysis specifically illustrates that the re-actualisation of specific experiences can be crucial for the environmental meanings made. Furthermore, none of the students expressed a sense of place. In general, and although associative text movability dominates, the conversation is quite analytical and deals with defining, reasoning and arguing, rather than personal and emotional articulations. This is an interesting result in relation to the assumption that place-based literature such as nature writing texts as Thoreau's enhance such relations. This is also interesting in relation to the 'aesthetic' set up of the activity, where the students were instructed to choose quotes and write down their personal comments and reflections. Very few of the personal reflections deal with the students' own personal feelings and associations of the texts. Furthermore, there are only a few examples in the empirical material as a whole where students express their opinions about the text or about their feelings and experiences in their everyday lives. In sum, the results of the study shows that the *Walden* text does not have one meaning alone and that its meaning or meanings are produced in a dynamic interplay between the text, the students' previous experiences and the social and institutional setting.

Finally, the Paper discusses some consequences of using literature in environmental and sustainability education in relation to ecocritical assumptions regarding the role of literature, and nature writing and place based literature in particular. The paper suggests that the *Walden* text does not have one meaning alone but that its meaning is produced in a dynamic interplay between the text, the students' previous experiences and the social and institutional setting. Accordingly, it is not one Walden that is *e*ncountered, but rather several Waldens. This elicits the idea of literary texts as 'springboards' for certain ends such as environmental meaning making and learning and place experience. Accordingly, in contrast to regarding texts, or places, in terms of what they are, this study point to the importance of looking into what they are becoming in specific situations which sheds light on what the reading of nature writing and other environmentally relevant texts has the power to achieve.

In addition, the study shows that the students express relatively few personal comments in relation to the reading. The place-based values expressed in the

Thoreau chapter are omitted from the students' discussions. This result counters the assumption that literature with its artistic qualities and nature writing with its ecological power enhance aesthetic and embodied experiences of nature. In contrast, the students who participated in this study seem to be more prone to reasoning and defining than expressing their feelings in an abstract way. This is an interesting result in relation to the students as future science teachers with a background in scientific study. Consequently, these results say something about the difficulty of introducing 'other ways of learning' into pre-established institutionalised educational cultures and points to the intricacies of discussing reading as leading to specific pre determined ends. Consequently, the choice of teaching content, such as texts, and the set up of the reading activity thus guides the students towards the production of certain meanings rather than others something that illustrates which power choices of teaching approaches has.

Moreover, the results of the study also demonstrate that the purpose of the reading and the set up of the activity move students' meaning making and discussions in certain directions and excludes others. In Rosenblatt's (2005) vocabulary, this reading activity can be defined as having more aesthetic aims than efferent aim. This is because, the students were able to pick the quotes that interested them and their personal reflections on the text were in focus for the journal writing rather than paying particular attention to specific traits in Thoreau's text such as for example Thoreau's portrayal of nature.

Finally, the results of the study shows suggests that further discussions and investigations about what encountering both texts and places in ESE would yield further knowledge of the relation between learners and subject content in ESE. The question of whether environments are 'socially constructed' or 'physical' and the role of the nature of the environment encountered for enhancing a sense of place becomes less important in a transactional perspective. Rather, the focus is on what happens in different encounters in different social, cultural and educational situations. This study illustrates that the students' comments and meanings are further elaborated on in the ensuing conversations compared to their individual journal entries. Overall, the ideas and opinions expressed in the journal entries are deepened and become more nuanced in encounters with other students. Accordingly, the social situation becomes an important circumstance in this specific situation. However, there is a tendency to see more variation in students' expressions of a sense of place in the individual journal entries, which suggests that the social situation and the encounter between students can also restrict meaning making. If a conversation circles around one topic and dominating voices are heard while others are silenced, the opportunity to express personal thoughts and opinions decreases. It is also interesting to note that these students' aesthetic and individual reading of one chapter of *Walden* initiated complex discus-

sions about adaptation and locations of nature which in turn say something about the potential power of reading nature writing and the relation between ecocritical readings and environmental meaning making in environmental and sustainability education. However, the results of the study shows that be it is too simplistic to claim that reading alone can contribute to sustainable relationships with the environment and lead to place attachment and a sense of place and furthermore. In addition, the results of the study show that the relation between literature and aesthetic experience is not something that is taken for granted.

Paper IV: Encountering Nature on the Move A Transactional analysis of Jenny Diski's Travelogue Stranger on a Train – Daydreaming and Smoking around America with Interruptions

Departing from the idea that today's globalised, urbanised, technological and mobile society often is often constituted as destructive in both outdoor education and ecocriticism, this Paper investigates the role of mobility in environmental meaning making focusing on how meanings of non human nature emerge in transactions involving travellers, mobile machines and landscapes. In view of these transactions as destructive, they are still very common in every day life which makes an empirical investigation of such transactions relevant in the context of ESE.

A pragmatic methodological approach for investigating meaning making in relation to the reading of literature drawing on John Dewey's ideas of experience and transaction and Louise Rosenblatt's theory of reading as a transactional experience is introduced in the Paper. Furthermore, a transactional analysis of the modern travel writer, Jenny Diski´s (2004) memoir *Stranger on a train, Day- dreaming and Smoking around America with Interruptions* illustrates how travel nature narratives can be used in order to analyse the continuity of experiences of landscapes in encounters with landscapes as travellers in a mobile situation of a train journey. A mobility marker analysis, based on practical epistemology analysis is developed in the study.

The main purpose of the Paper is to examine and illustrate how environmental meanings emerge in transactions between travellers, mobile machines and the physical landscape through which we travel. To achieve these aims, passages from Diski's narrative are used to clarify the purposes that the author ascribes to travelling, how the author's previous experiences are used in environmental meaning making as a traveller, and how mobility takes part in environmental meaning making.

Regarding how the author's previous experiences are used in the author's meaning making of the environment as a traveller we have identified the following. First, the encountered landscape is described as 'already known'. This can be interpreted as an example of the continuous nature of meaning making. In the encountering with the American landscape from the train, Diski's previous aesthetic experiences take on a positive function in the emerging of the meaning of the landscape. Second, the analysis shows in this story of the Diski-train-landscape relationship her previous experiences transact and gives new meaning of the American landscape as these specific

discourse-human-machine-nature encounters situate what Dewey calls the principle of continuity.

In terms of how mobility takes part in the author's environmental meaning making of the environment, the study shows that mobile encounters and the qualities and modes of mobility involved have an important impact on the process and content of the meaning making in question. Furthermore, it was also evident that the machine involved assumed the function of agency in the transactional process of meaning making.

Considering this Paper in the light of environmental and sustainability education and research on the role of context *for* environmental meaning making and learning, it opens up a previously overlooked space of analysis in which mobility can be regarded as a situational circumstance in environmental meaning making. According to a Deweyan transactional approach, meaning making occurs as we encounter the unfamiliar and it becomes possible for us to use our previous experiences in making meaning of that which we encounter in a non-habitual manner.

In most educational research and practices of environmental and sustainability education "encounter" is considered to be a static concept. For example in outdoor education, being out doors, encountering nature, and the consequences that encountering nature has for the development of a relationship to nature and for development of environmental concern and sustainable development is in focus as is illustrated in Paper I in this thesis. Furthermore, the same line of thought is evident in ecocriticism in the discussions of place-based literature emphasising physical nature encounters. Travelling, or, moving back and forth to natural outdoor environments are overlooked as a viable dimension of environmental meaning making valuing place-based ways of moving over technological moving and mooring. However, the results of this study suggest that it is possible and even significant to analyse how various modes of movements, including technological movements participate as situational circumstances in environmental meaning making.

Finally, the Paper suggests that acknowledging the function and meaning of human-nature-machine relationships in encounters with nature may contribute to knowledge about the process and content of environmental meaning making. Accordingly, including human-nature-machine-relationships in research on the meaning of the environment may be useful for understanding how to identify, understand and deal with environment- and development challenges such as climate change, which involves the everyday use, and emotive relationships, with mobile machines.

Paper V: The True Story of Climate Change? Aesthetic and Efferent Readings of Hardy Brix' Painted Landscapes.

The Paper, *The true Story of Climate Change? Aesthetic and Efferent Readings of Hardy Brix' painted landscapes* contributes to the discussions about the role of the arts in meaning making of climate change. It departs from the notion that different climate change narratives contribute to our understanding of present day anthropogenic climate change.

The paper first presents the results of an investigation into the scientific climate change narratives of the Polar Regions in the Intergovernmental Panel of Climate Change Report (IPCC, 2007) and Arctic Climate Impact Assessment" (ACIA, 2009) as well as in other climate change literature dealing with these issues. Within the scientific community, the significant challenge of present day anthropogenic climate change is well established and climate change science serves as one of the most important source of information providing the worldwide community with the latest facts of climate change. For example, the IPCC is the most powerful organisation for synthesising scientific facts and regularly provides the world with the latest scientific data concerning climate change matters and the potential environmental and socio-economic consequences. As such, the IPCC reports, and other similar reports are influential participants in telling the "true story" of climate change. Accordingly, the paper points to the importance of investigating how scientific evidence of climate change is narrated because in general such narratives to a large extent affect public understanding of climate change.

Within the scientific climate change discourse, the Polar Regions (the Arctic and Antarctic) are portrayed as particularly vulnerable areas to climate change where climate change takes place more rapidly than in other regions of the world. Here, the Inuit and polar bears are constituted as "icons" of climate change (Bravo 2009). Furthermore, the analysis shows that technological explanations dominate the discourse and the natural world is portrayed via diagrams, curves, climate models and global maps illustrating the rising temperatures of the Polar Regions, and other areas. The "poetics of science" that dominate the scientific climate change discourse accentuate humans detachment from the land and tend to exclude human concerns such as for example vulnerability, adaptation and mitigation. As a result, these texts illustrates the natural world as being in crisis and gives the impression that climate change is something that is going on outside and away from the human sphere. From that perspective, local knowledge and artistic expressions such as literature and the arts are omitted as a source of knowledge of

climate change and its consequences. Thus, cultural [i.e. artistic] responses are devalued in public climate change discourses even though the number of artistic exhibitions and initiatives explicitly addressing climate change issues is on the increase.

Departing from the domination of scientific narratives in telling the 'true story' of climate change, the Paper poses questions of what artistic narratives can contribute with for our understanding of climate change and how artistic narratives can be interpreted or read. In order to clarify these questions, the Paper explores the role of aesthetic narratives like literature and paintings and the role of aesthetic experience in environmental meaning making from a transactional perspective. Literary critic Louise Rosenblatt's theory of transactional reading is used as a theoretical starting point and is applied and developed as an approach in order to conduct two different readings of the Danish artist Hardy Brix' paintings of Arctic and Northern landscapes; one aesthetic and one efferent reading. Even though Rosenblatt's theory mainly concerns responses to and readings of literary texts, in this Paper her theory functions as a starting point for the readings of visual images.

The starting point for Rosenblatt's transactional theory (1994, 1995, 2005) is the acknowledgement of literature's pedagogical potentials for enhancing the development of democratic citizens in a democratic society and for preparing students for future unpredictable challenges. In addition, she gives literary experience special standing in terms of evoking immediacy and emotional responses compared to analytical approaches. The concept of transaction is central for Rosenblatt's theory of reading in which meaning is produced in the encounter between the reader and the text. Accordingly, a text first receives meaning in the encounter, which implies that the interpretation of texts is viewed as taking place in a dynamic interplay between the reader and the text. In such a perspective, the purpose of a reading always influences the meaning of the reading process and Rosenblatt distinguishes between 'efferent' and 'aesthetic' stances. This means that readers can pay aesthetic or efferent attention to a text in a reading-event. Aesthetic readings direct the readers attention to personal associations and what unfolds as 'lived through' in the reading. Efferent readings, on the other hand, have the purpose of generating some kind of information that is external to the associations of the reader.

Furthermore, the Paper introduces the artist Hardy Brix and his ways of working as a travelling artist sailing around Greenland, Svalbard, Iceland and Antarctica and portraying the Arctic landscapes as he is encountering them from the ship's deck. Brix usually sits on the ship's deck and captures the light, the weather and the atmosphere and paints quick snapshots of the passing landscape. These paintings are like cameos or miniatures and only

takes a couple of minutes to complete. This way of working resembles the idea of evoking an aesthetic experience by reading a text, as put forward by Rosenblatt. Accordingly, Brix is, in Rosenblatt's meaning, involved in an "aesthetic drawing" while he is painting the landscapes that he is encountering from his position on deck. His paintings of the Arctic landscape are the outcomes his intuitive experiences of the landscape in the situation of painting. The paintings are produced in transaction with the present environment that he is encountering in the specific situation, rather than as a result of a predetermined plan of what to paint.

The aesthetic reading conducted in the Paper illustrates the authors personal associations to Brix's paintings while the efferent reading evokes previous experiences of the Arctic as a vulnerable area and in that sense Brix portrays a vulnerable environment that is not evoked in the aesthetic reading. This means that even though the same image is read, different meanings emerge in relation to the purposes of the readings. Thus, my encounter and my readings of Brix's paintings can from a transactional perspective be regarded as a transactional reading, i.e. an ongoing and unfolding conversation between the paintings and myself and in this sense also with the "actual" landscapes portrayed i.e. the landscapes of the Arctic.

Finally, the Paper points to a few consequences for environmental meaning making and learning about climate change in relation to scientific and aesthetic narratives of climate change in a transactional perspective. As the analysis of the scientific narratives of climate change conducted in this Paper illustrates, the communication of climate change science is usually based on empirical scientific knowledge derived from observation and experimentation by scientists such as ecologists, biologists and geographers. In Rosenblatt's terminology, present day science climate change narratives are dominated by an efferent "stance", with the purpose of telling the scientific story of dangerous rises in temperatures and ice melting by the use of graphs, figures and maps, thereby leaving human aspects behind. In relation to this, the Paper points to the commonly held view of regarding knowledge as something that can be transferred from one entity to the other, such as for example from text to reader. Furthermore, he Paper argues that a transactional view of meaning making can help to dissolve such conceptions.

From a transactional point of view, meaning making happens in encounters through transactions between readers and texts, or between readers and other environments. It therefore becomes impossible to view the object of learning as a separate entity that is detached from the learners, or the researchers, previous experiences. Furthermore, a transactional view of meaning making moves beyond the gap between reality and representation, or the real and the simulated, and questions the notion of one true story, for example of climate

change. From a transactional point of view, the dominating image of scientific narratives as giving the most "authentic" story of climate change instead becomes a question of the purpose of the 'reading'. From a transactional point of view, our encounters with our environments are always inflected by our previous experiences. Following this, these will influence the meaning of our future encounters and the meaning of these encounters, regardless of whether they are aesthetic or scientific.

The Paper concludes that taking a transactional starting point for investigating artistic narratives, suggests a view of our readings of landscapes and art as being continuously shaped by our previous experiences and dependent of the purpose of the reading. Consequently, both being in the Arctic and studying a piece of art portraying the Arctic can evoke aesthetic experiences as well as reading a piece of art can evoke scientific experiences as the reading in this Paper illustrates. The two different readings of Hardy Brix' painted landscapes illustrate that artistic narratives give the opportunity to explore both previous experiences, the piece of art and the 'actual' landscapes of the Arctic.

Discussion and Future Perspectives

The overall ambition of this thesis is to investigate the approaches taken to environmental and sustainability education in outdoor education and ecocriticism in a Swedish and in an international context, to investigate environmental meaning making and to conduce to the development of analytical methods for empirical investigations of environmental meaning making. In the following, some of the general results will be discussed followed by suggested future perspectives.

The first objective of the thesis is to analyse constitutive discursive rules and traits regarding environmental and sustainability education and meaning making within outdoor education in a Swedish context and in ecocriticism. This has been achieved through discourse analyses of authoritative texts in the form of outdoor education textbooks and ecocritical textbooks and research literature. The results of these analyses demonstrate that these two fields have more in common than what was first expected. Even though outdoor education and ecocritical education are based on different modes of encountering environments in every day teaching practice, through texts or "direct", both practices share common concerns when it comes to the idea of present day disconnection from nature. Both fields motivate their educational approach by taking drawing on the phenomenon of human-nature disconnection as the starting point. The idea that humans are disconnected from nature is thus constituted as one of the main threats facing us today in both outdoor education and ecocriticism. As such, both ecocriticism and outdoor education are situated in a normative 'ecoeducational' paradigm since they share the same rules, traits and metaphors of present day culture and society, ecological crisis and the role of nature, aesthetic experience and experiential approaches in environmental and sustainability education. Accordingly, it is within an aesthetic, experiential and ecological approach to ESE that the two educational practices that are investigated in this thesis can be positioned. Thus, the constitution of features such as industrial instrumental rationalism and the domination of science as imperative threats toward sustainable development further imply that they share the same environmentalist positions. The potential of encountering nature and place experientially in outdoor education and the potential of encountering nature and place through narratives in ecocriticism are viewed as viable approaches for enhancing environmental meaning making. Such modes of encountering nature are consti-

tuted as alternative ways of getting to know our place in the world and for developing environmental concern often in opposition to present day dominating approaches to environmental and sustainability education and to present day culture. Due to the constitution the current culture as having changed humans' moral outlook towards nature, both ecocriticism and outdoor education share the idea of *restoring* a lost link to a past nature and to a past way of relating to nature and therefore to reinvigorate a renewed relationship to nature and place in order to 'heal' the bond between humans and nature that modernity and progress have cracked. This means that both outdoor education and ecocriticism share the same idea of a past human-nature relationship that needs to be restored. Hence, humans relations to nature are constituted as an imperative circumstance for environmental meaning making and learning and consequently for sustainable development.

Consequently, reconnection to nature is constituted as the most important incitement for change and for future sustainable development. Furthermore, both fields are constituted through various dichotomies. Starting from the distinction between 'ecopoetics' and 'ecoinformation' as sources for learning, both practices recognise the need for ecopoetic reconnection. Furthermore, both practices, criticise the linguistic turn in the light of the need for reconnection to that which really matters – the physical environment. From a pragmatic and transactional point of view, the dualistic treatment of matters as self evidently true becomes problematic. For example, the use of concepts such as 'genuine' and 'real' in descriptions of outdoor environments, that is frequently used in the Swedish outdoor education discourse practice, may be useful metaphors for pointing to an educational idea. However, such concepts becomes problematic if they are regarded as essentialist and universal assumptions as is the case in the Swedish outdoor education discourse practice. As offering alternatives to dominating modes of thinking, outdoor education and ecocriticism are welcomed contributions to the ESE discussions. However, such as the outdoor and ecocritical environmental and sustainability discourse practices are constituted in the studies carried out in this thesis, i.e. in opposition to indoor education and 'traditional' scientific teaching and learning, one could ask what might happen if a dialogue was opened up acknowledging different forms of knowledge and different experiences as equally valuable for working with different aspects of environmental and sustainability issues. By focusing almost exclusively on students admiration, relation and connection to nature rather than drawing attention to scientific understandings as a means for development of environmentally sustainable actions and environmental concern excludes one form of knowledge for another. Therefore, one could argue that a more combined approach would be more fruitful and from the texts that have been analysed in the studies in this thesis, I would say that ecocriticism is a few steps a head. Ecocriticism is more open to other approaches and offers interesting work on intersections

of for example biology and literary studies. Furthermore, even though ecocriticism has focused mainly on the genre of nature writing and it still has a lot of power in the discourse practice, ecocriticism to a larger extent than outdoor education acknowledge the mediated and 'disconnected' ways students live in every day lives. The Swedish outdoor environmental and sustainability discourse practice is constituted as extremely sceptical to 'new' modes of experiencing nature excluding and disregarding technology completely.

From a transactional point of view, what is real and fruitful for a specific purpose can never be apriori determined. As pragmatism does not make any distinctions between social and natural sciences when it comes to how we regard something as true, both experiencing 'real' nature and experience nature in texts or through screens can evoke environmental meaning. Furthermore, in a transactional perspective, what is real and meaningful is constituted in transactions between humans and environments and is therefore relational. This means that from a transactional point of view, whether certain texts or certain natural places will be fruitful for environmental and sustainability meaning and learning cannot be determined before the encounter is taking place. For example, learning to read always means learning to read something implying that reading a book or a landscape generate meaning if it is experienced. The Swedish outdoor environmental and sustainability discourse practice describe a priori what is meaningful and what constitute meaningful nature experiences. From the transactional perspective taken in this thesis, what an encounter with nature is, or what a genuine experience is, is not as relevant as talking about what an encounter with nature or a text *becomes*. Furthermore, in relation to the discussion that more nature is needed in ESE and that the environment is forgotten depends on how the concept of environment is defined and how environmental meaning making is considered to 'happen'. The concept of *environing* implies that humans are never separated from their environments and following this line of reasoning, the idea of a culture marked by human environment disconnection is viewed as impossible.

The approaches taken to environmental and sustainability meaning making in outdoor education and ecocriticism tend to give certain natures or certain texts more value in meaning making than other circumstances. For example, in the Swedish outdoor education discourse practice urban environments are not mentioned as potential environments for environmental meaning making and learning and encountering nature through texts and 'screens' are constituted as drawing humans away from nature and from reality. From a transactional point of view, such encounters may prove to be equally meaningful and valuable and by excluding and devaluing such encounters important experiences are perhaps excluded from every outdoor education since the

future outdoor educators are only offered the meaning that such encounters rather withdraw humans from nature than reconnect them to it. Internationally, there are examples of studies and outdoor educational practices in which such encounters are treated as important for increasing understanding the relation between outdoor and place-based education and environmental meaning making (Martin 2008) something that would be a welcomed discussion in the Swedish outdoor environmental and sustainability discourse practice. However, interestingly enough, the Swedish outdoor environmental and sustainability discourse practice shows a great interest in nature writing. The investigated textbooks include many descriptions of the textbook authors' nature experiences that are told through poetic nature narratives and the textbooks include many quotes from nature writers and other poets but they are not discussed as potential environments for environmental meaning making.

The second objective of this thesis was to investigate how different situated circumstances such as, text, place, mobility, social situations and previous experiences interplay in environmental meaning making and the third objective was to compare the ideas within the two investigated educational practices in relation to the investigations of environmental meaning making. This has been achieved through analyses of classroom communication, through nature writing and through an analysis of painted landscapes and through the discussions of the ideas in relation to the empirical results of environmental meaning making. In relation to this, the fourth objective of this thesis was to develop analytical methods based on John Dewey and Louise Rosenblatt's theories of transaction and meaning making for conducting empirical investigations of environmental meaning making in which different interplaying situational circumstances are taken into account. A pragmatic transactional methodological approach that makes it possible to systematically analyse different dimensions of environmental meaning making have been developed in the studies. Thus, the studies carried out in this thesis show that there are many situational circumstances that are taking part in environmental meaning making. The methodological development of the thesis includes analyses of reading adding to previous studies using the same methodological approach. From a theoretical point of view, the thesis addresses and adds a transactional perspective to discussions on environmental and sustainability meaning making, nature, texts, place, mobility and the content of students' meaning making in relation to reading. Furthermore, the analysis of Jenny Diski's environmental meaning making while on the move shows that mobility as a situational circumstance takes part in different ways in environmental meaning making. Considering the results of this study in the light of ESE, this study opens up a previously overlooked space of analysis in which mobility can be regarded as a situational dimension in environmental meaning making in which the concept of context and place as discussed in ESE as having pedagogical qualities can be broadened. From a transactional

point of view, meaning making occurs as we encounter the unfamiliar and it becomes possible for us to use our previous experiences in making meaning of that which we encounter in a non-habitual manner. This is an interesting result in relation to the constitutive rules and traits underpinning the outdoor education discourse practice and ecocriticism. By taking their departure from a destructive culture and the need to reconnect to something lost or move out from traditional educational domains, students culturally mediated nature experiences devalued, particularly in the constitution of the Swedish outdoor environmental and sustainability discourse practice. The results of the mobility marker analysis conducted in Paper IV shows that previous experiences, either good or bad, take part in meaning making, as well as in the investigation of the students' environmental meaning making in relation to the reading of *Walden*. This suggests, that from such point of view the students experiences of every day life are not erased just by stepping out from the classroom to another alternative environment. This can be related to the understanding of places and encounters as separate entities. By viewing them as mutually constitutive and acknowledge different dimensions and situational circumstances in environmental meaning making would broaden the concepts of place and environmental meaning making. The study of Diski's encounter while on the move, adds further dimensions to the fact that much outdoor education involves travelling out to nature, but travelling, or, mobility is overlooked as a viable dimension of environmental meaning making in outdoor education. However, following the results of this study, it is possible and even significant to analyse how various modes of movements, including technological movements participate in environmental meaning making. Another result relevant for ESE is suggests that acknowledging the function and meaning of human-nature-machine relationships in encounters with nature may also contribute to knowledge about the process and content of environmental meaning making in place. Accordingly, including human-nature-machine relationships in research on the meaning of the environment may be useful for understanding how to identify, understand and deal with environment- and development challenges such as climate change, which involves the everyday use, and emotive relationships, with mobile machines. This contribution challenges the idea of educational situations as physical and static and illuminates the relationship between mobility and environmental meaning making which can clarify how environing takes place and what becomes environment in actions when humans are on the move and encounter environments in machines where environments literally "appear framed in a window".

Furthermore, from the perspective that the investigations carried out in tis thesis, the results suggest that it is too easy to value certain encounters as a means to developing environmental concern, care and change something that investigations on outdoor education practice already show. In that respect,

the studies carried out in the thesis add further understanding to the complexity of what it means or what it can mean or what nature and text becomes in activities. From a transactional point of view, each encounter is unique and whether an encounter with a tree or a text, we cannot decide if it is meaningful before hand. In the next encounter with the same text or the same tree, a different meaning may be evoked. Thus, the discussions whether nature and texts exist, or whether they are real or not, or whether they are reality or not, or whether they are valuable springboards for environmental meaning making and for development of environmental concern become less important questions than what they become in transactional practices.

In addition, the investigation of Brix's painted landscapes discusses aesthetic narratives such as literature and paintings and the role of aesthetic experience in environmental meaning making from a transactional perspective. This Paper has come to mean new things along the way in the light of the other studies carried out in this thesis. At first, I did not reflect on the role of my approach as a researcher to Brix's painting. The two readings carried out in the study illustrate the importance of a stance as a reader. Even though I was the reader in both occasions, the readings generated different results in relation to the purposes of the reading. Furthermore, the artist's way of working illustrates an in-situ mobile aesthetic experience that can be coupled with the work on mobility in the Jenny Diski Paper. The painter stands on deck painting the artic landscape. The meaning produced in "place" of the Arctic and the meaning produced in the encounter between the painting and the reader can be considered as continuous and mobile and the meaning(s) of the paintings are conditioned by the purposes of reading. The Hardy Paper also adds insights into the fields of aesthetic and scientific understandings of the environment as continuous. Brix did not have any "environmental ambitions" with his work initially, he was mainly interested in painting the arctic landscapes per se. However, noticing the differences in ice melting when returning to the Arctic, his paintings have gained new meaning to him viewed in retrospect. This also illustrates how previous experiences take part in meaning making and that they are continuously re-contextualised. Both the Arctic and the paintings evoke new meanings. From a transactional point of view, neither environments nor texts are empty places, settings or structures, but are always in a continuing process of "becoming" constituted by the things in a person's surroundings that prove to be meaningful or *environed* in transactional practice.

The educational practices investigated in this thesis are viewed as communicative practices and in focus has been to clarify the embedded discursive rules and traits in these practices rather than argue for one or the other perspective and the question of what constitutes a viable educational response to present day environmental and sustainability issues are viewed as empirical

questions. Furthermore, the empirical investigations carried out in this thesis illustrate how environmental meaning making vary and how different circumstances interplay in environmental meaning making.

To conclude, we might not like the ways in which conventional education is taking place, we might not like that many children today spend much time in front of screens but the experiences made there or in encounters with digital and virtual worlds are never separated from 'pure' nature experience. In a transactional perspective, such issues are in constant change and cannot be decided before hand and since previous experiences can be viewed as a situational circumstance, they are viewed as constituent parts of environmental meaning making whatever environment is encountered. Thus, rather than starting from the importance of be in place or what texts are and what nature is, this thesis suggests that discussing these issues in terms of what they are becoming in transactional practice may add further insights in environmental meaning making and ESE. The idea that experiences are fixed and that there is a direct correlation between experience and situation is questionable from a transactional point of view. Accordingly, experiences of all kinds are not fixed, but always mobile.

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