Chapter 1

Introduction

As evidence is mounting that the earth is undergoing a period of change that is unparalleled in the history of human civilisations (Solomon *et al.*, 2007; Allison *et al.*, 2009; Stocker *et al.*, 2013), it is increasingly incontrovertible that complex, modern societies are faced with unprecedented challenges in curtailing and reversing the damage caused by industrial modes of organisation, over-consumption of natural resources and the concurrent degradation of the environment. At the heart of these challenges lie long-established social and cultural assumptions about 'nature' and the human position within it (Latour, 1992; Norgaard, 1994; McIntosh, 2008; Moore, 2013). There is increased recognition that "widely based cultural change" is needed (Ehrlich and Ehrlich, 2013, p. 5) to contend with the social-ecological crises of the 21st century and that "socio-cultural and political processes need greater attention" (Butzer and Endfield, 2012, p. 3628) in understanding transformations of the social. While recent scholarship on sustainability transitions has probed into the feasibility of creating more sustainable forms of social organisation both from 'above' (Geels, 2011; Farla *et al.*, 2012) and from 'the grassroots' (Seyfang and Smith, 2007; Smith and Seyfang, 2013), little is known about the practical implications of transformations in worldviews for societal transitions in the context of current social-ecological change. This gap is what motivates this thesis.

Understanding the dynamics of sustainability transitions – which revolve around the meanings and visions of what a sustainable society might be – entails inquiring not only about how sustainability is envisioned and enacted but also about the ways in which such beliefs and visions are formed by wider social norms and cultural assumptions about the world at large. This involves examining the ontological and epistemological foundations of particular worldviews and connected understandings of sustainability within interpretive communities. Seeing 'grassroots innovations' as potential sites of transitions in onto-epistemology – understood as transformations in beliefs about the structure of the world and how it is known – this thesis explores questions about how such changes takes place in relation to sustainability narratives: How are ideas about sustainability narrated and enacted within interpretive communities? What is the significance of dominant cultural narratives in shaping situated understandings of sustainability? In what ways do shared inquiries into social-ecological crises affect everyday lives? How can mutual narration

reframe the challenge of sustainability and give rise to new meanings and actions within participants' lives? While such questions are not new, they have not yet been asked within social research on transitions where a theoretical and practical understanding of transformations in worldviews is currently lacking.

To address the need for a better understanding of the role of assumptions inherent to particular worldviews in sustainability transitions, this thesis brings insights from Radical Human Ecology, eco-linguistics and narrative sociology to bear on transitions theory, creates a methodological framework for researching transformations in onto-epistemology and conducts an empirical study of changes in worldviews and sustainability narratives. The case study was undertaken with participants in the Dark Mountain Project, a network which arose out of a critique of the meta-narrative of progress (Kingsnorth and Hine MA). The remainder of this chapter will outline the motivation behind the study, situate the thesis within the wider research on sustainability and transitions, summarise the questions that guide the empirical inquiry and provide an overview of the structure of the thesis.

1.1   Motivation and rationale behind this research

This study grows out of my interest in how environmental change is known and given meaning as well as how personal identities are impacted or shaped by social-ecological crises. It is in many ways a continuation of some of the questions that arose during my MSc Climate Change about the disjunction between the scale and nature of contemporary social-ecological change and the lack of effective responses within mainstream culture and politics. As a student of climate change, I learnt how humanity is affecting the structure and composition of different parts of the earth system adversely through collective behaviours that produce detrimental amounts of waste and pollutants (cf. UNEP, 2012; WI, 2013) and which alter terrestrial habitats (cf., Goldewijk, 2001; Field *et al.*, 2014), ocean chemistry and ecology (cf. Doney *et al.*, 2012; Poloczanska *et al.*, 2013) and atmospheric composition (cf. Forster *et al.*, 2007; Hartmann *et al.*, 2013) on a planetary scale. The resulting changes in local and global environments have severe effects on resource availability (cf. Steffen *et al.*, 2005; Field *et al.*, 2014) and cause accelerating extinction of animal and plant populations (cf. Barnosky *et al.*, 2011; Wake, 2012) which in turn undermine the ecological foundations for human habitation. The possibility for (abrupt) shifts in parts of the earth system towards states which diverge significantly from the climates that humans have inhabited during the Holocene (cf. Scheffer *et al.*, 2001; Alley *et al.*, 2002; Lenton *et al.*, 2008; Rockström *et al.*, 2009) is a matter which has caused both anxiety and delight as I have gasped alternately in fright and awe of our inter-connected and inter-dependent world.

At the same time, it became clear to me that climate change has failed as a social narrative because it has framed debates negatively and left out the element of wonder. Rather than being a source of wonderment it has become a source of fear: a narrative which ultimately divides collective efforts into 'for' and 'against' rather than connecting

people around shared concerns. Reframing the narratives of climate change and social-ecological crises therefore seems a necessary step for enabling pro-active responses. As Professor Mike Hulme suggests:

> "Understanding the ways in which climate change connects with foundational human instincts opens up possibilities for re-situating culture and the human spirit at the heart of our understanding of climate change. Rather than catalysing disagreements about how, when and where to tackle climate change, the idea of climate change should be seen as an intellectual resource around which our collective and personal identities and projects can form and take shape" (Hulme, 2009, p. 326).

However, 're-situating culture' also means confronting those cultural assumptions that climate science is challenging. We cannot simply choose which aspects of social-ecological crises to look at: it is necessary to accept *both* wonder and fright for a sober understanding of the future(s) that climate change is revealing. Why is it so hard for us to collectively come to terms with the prospects of climate change? And how did a culture where waste and toxic by-products are normalised as inexorable 'externalities' emerge in the first place? To answer such questions involves taking a deeper look at the assumptions and habits that shape the way that we collectively think about, and relate to, 'nature', and to elucidate what is meant when something is designated 'sustainable'.

My approach to researching particular ideas and practices of sustainability begins from an observation that the effects of *un*sustainable ways of life are not a result of separate environmental, social and economic crises but rather part of an interconnected problematic with deeper roots in the worldviews, cultural values, and organisational modes connected with modernity and late-capitalism (cf. Ekins, 1992). As an 'all-encompassing idea' (Blowers, 1997) or a 'grand compromise' (Kates *et al.*, 2005) the notion of sustainability is inherently ambiguous, so much that "our ability to conceive what it would really be in an operational sense is very limited" (Norgaard, 1994, p. 15). To me, this calls for directly engaging with the ways in which sustainability is imagined, storied and corroborated within peer groups and interpretive communities. Further, the scale of the sustainability challenge is such that scientists and commentators are discussing the possibilities of short-term failures in key systems and infrastructures that sustain modern civilisation (cf. Ehrlich and Ehrlich, 2013). This points to the *nature* of the sustainability challenge: it is not simply about finding ways to sustain contemporary society through optimisation or efficiency gains but about the relations that humanity sustains with more-than-human nature. Wendell Berry has explicated the cultural dimension of this problematic:

> "The problem of sustainability is simple enough to state. It requires that the fertility cycle of birth, growth, maturity, death, and decay—what Albert Howard called "the Wheel of Life"—should turn continuously in place, so that the law of return is kept and nothing is wasted. For this to happen in the stewardship of humans, there must be a cultural cycle, in harmony with the fertility cycle, also continuously turning in place. The cultural cycle is an unending conversation between old people and young

people, assuring the survival of local memory, which has, as long as it remains local,
the greatest practical urgency and value" (Berry, 2012, na.).

In this perspective, the sustainability challenge is about finding practicable responses to
establish viable relations between humans and more-than-human nature for the long-term.
In other words, it is not just a challenge to human ingenuity and prowess, it is a challenge
to our self-understanding as a species and to our consciousness of the planet we inhabit.
Thus, the sustainability challenge is 'onto-epistomological' as it concerns our experience
of reality and what we consider to count as knowledge – our worldview and 'vision of
what is real and possible' (Williams *et al.*, 2012, p. 1) as the field of Radical Human Ecol-
ogy affirms (section 2.2 in the following chapter delves into the question of worldviews
and onto-epistemology in detail). The next sections explain how I examine human-nature
relationships in this text and expand on the conceptual basis for this study.

1.1.1 Sustainability: framing humans and nature

It is critical to acknowledge the deeper assumptions implied by the concept 'sustainability'
to be able to appreciate the outcomes of particular enactments of this term. The Oxford
English Dictionary includes the following definitions for the words 'sustainability'[1] and
'sustainable'[2]:

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sustainability, *n.*

2.

a. The quality of being sustainable at a certain rate or level.

b. *spec.* The property of being environmentally sustainable; the degree to which a
process or enterprise is able to be maintained or continued while avoiding the long-
term depletion of natural resources.

sustainable, *adj.*

3.

a. Capable of being maintained or continued at a certain rate or level.

b. Designating forms of human activity (esp. of an economic nature) in which en-
vironmental degradation is minimized, esp. by avoiding the long-term depletion of
natural resources; of or relating to activity of this type. Also: designating a natural
resource which is exploited in such a way as to avoid its long-term depletion. Cf.
SUSTAINABILITY, *n.* 2b.

As this definition shows, 'sustain-ability' designates a quality or measure of an entity
or process to be 'maintained or continued' without (long-term) depletion. This implies

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[1]"sustainability, n.". OED Online. June 2014. Oxford University Press. http://www.oed.com/view/Entry/
299890 [accessed 10.07.14].

[2]"sustainable, adj.". OED Online. June 2014. Oxford University Press. http://www.oed.com/view/Entry/
195210 [accessed 10.07.14].

questions about the degree to which something remains the same (e.g. in appearance, content, components, internal relations) while it also poses questions about *what* is being maintained, *why* and *how* it is being sustained. The definitions shown above imply a relation where humans are actively maintaining natural processes which in turn are seen as passive: definitions 2.b and 3.b describe sustainability in terms of processes or enterprises which involve human use of natural resources, specifically as activities which minimise or preclude their degradation. According to this definition, sustainability entails a particular relationship between humans and their natural environment, one which perceives nature as 'resources' which are used or 'exploited' by humans. I will call this the *user-resource relationship* in this thesis in order to designate how the prevalent understanding of sustainability implies a radical separation of humans and the natural world, one where the health of one is subsumed to the interests of the other. The user-resource perspective thus refers to worldviews – and related onto-epistemological assumptions about the world – which are rooted in beliefs that cast self-other, human-environment and nature-culture as essentially different rather than inextricably connected (this is discussed in more detail in section 2.3 in the following chapter).

As a dominant construct in environmental discourse, sustainability has emerged over the last decades to become a central concept for envisioning, theorising and managing the various social, political and economic endeavours to address the long-term challenges of over-consumption and exploitation of resources (cf. Norgaard, 1994; Jamieson, 1998; Mebratu, 1998; Kates *et al.*, 2005; Grober, 2007). Conceived as a problem of balancing present human needs with those of future generations by protecting the regenerative capacity of natural resources (WCED, 1987), sustainability has been implemented as a policy target in various forms at local[3], national[4] and global[5] levels. The understanding of sustainability as balancing human needs and environmental protection has emerged largely as a consequence of the concept's evolution within the nexus of ideas and values centred on the interlinked institutions of capital, scientism and the nation-state (cf. Ekins, 1992). The cultural implications of this history has been a re-imagining of plural nature in terms of the singular category of 'environment' (Banerjee, 2003) and the gradual subordination of the natural world to the realm of the market (Prudham, 2009). In this way, the natural world has come to be subordinated to the needs and, more often, wants of humans (cf. Jackson *et al.*, 2004). This is exemplified in the story of the Canadian lumberjack who sees 'money' when he sees a tree: the way he goes on to treat the tree is, of course, different than if he had first seen a living being (Jensen, 2004).

However, over the last decades, environmental scholarship has explored both the power and the limits of 'nature' and 'society' as an explanatory framework for understanding history and social change. In various disciplines the division of the human and natural spheres – what Latour (1992) describes as the 'modern constitution' – has given

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[3]E.g. Local Agenda 21 initiatives.

[4]In national sustainabilities strategies, see e.g. Swanson, 2004.

[5]E.g. the UN Plan of Implementation of the World Summit on Sustainable Development.

way to seeing humanity and nature as interconnected, interdependent and entangled; what Moore (2013) aptly describes as *humanity-in-nature* rather than humanity *and* nature. Within this shift in perspective, growing and diverse academic literatures are exploring the ways in which humans are not only the producers of environments but also the products of those environments. This is a move which overturns the collapse of pluralistic nature into singular environment. It opens up for understanding the manifold ways in which nature is imagined and represented socially and culturally as well as it asks questions about the political nature of those representations. As Swyngedouw puts it: "what enters the domain of politics is the coded and symbolised versions of nature mobilised by scientists, activists, industrialists and the like" (2007, p. 21). The point here is not to provide a detailed account of this burgeoning literature (I will return to some of these literatures later) but rather to explore what it means for understanding sustainability and how I employ the concept in this study. For this purpose I summarise below what I consider to be the core elements of this perspective based on three different but related bodies of work.

First, it is worth reiterating what an awareness of humanity-in-nature is *not* in order to avoid reproducing the vocabulary and meanings of the binary humanity vs. nature. Humanity-in-nature is not a perspective where humans collectively (as in societies, nations, or civilisations) 'interact' with nature (whether conceptualised as the environment, climate, or the natural world). In the words of Moore, nature is better understood as "the matrix within which human activity unfolds" (2013, na.). Neither is it meaningful to treat the agency of humans and the agency of nature as separate because one is impossible without the other. Moore proposes that human agency is better understood within, and in relation to, nature as a whole: as "specific 'bundles' of human and extra-human nature, dialectically joined rather than interactionally fused" (ibid., na.). Within such bundling, humans and their natural environments are continually making and un-making each other. This means that a concern with sustainability is not primarily about intervention in human systems to make modes of organisation and production less degrading to the environment. Rather, the focus of sustainability is *environment-making*, understood as "the ever-changing, interpenetrating, and interchanging dialectic of humans and environments in historical change" (ibid., na.), and, more specifically, "the *relations that guide* environment-making, and also the *processes that compel new rules* of environment-making" (ibid., na., my emphasis). In this way, environment-making can be seen as the enactment of particular onto-epistemological assumptions, of a worldview. And to study sustainability, then, is to study how these assumptions are expressed in the kind of relations we have, individually and collectively, within nature-as-matrix (section 2.1.2 in the next chapter discusses environment-making in more detail).

Second, although environment-making is an activity in which humans are particularly forceful, it is an activity of all other life forms as well (and we humans are ourselves environments shaped by more-than-human natures). This is an explicit rejection of the historical framing of the human-nature relationship as one of dominion. It is part of a project that Mick Smith (2011) calls a decentering of human exceptionalism. In *Against*

Ecological Sovereignty, Smith interrogates the connections between the metaphysical distinctions that elevate the human above the natural world and political decisions based on this premise. He shows how ecological sovereignty – i.e. human dominion over ecologies – simultaneously subjects the more-than-human to, and excludes it from, the realm of politics and ethics. At the same time, the reduction of more-than-human nature into resource, or 'standing reserve', is a reduction of humanity and the possibility of being alive to the world: "[i]f we regard the natural world as nothing but a resource then humanity is left, at best, with nothing to become other than the orderer of that resource" (ibid., p. 105). The danger is that we in this way partake in a self-fulfilling (and self-negating) process where "we come to consider everything of worldly significance a product of our own doing" (ibid., p. 106). What this means for our understanding of sustainability is that sustainable relations with more-than-human nature are free from claims of human sovereignty. This is the political dimension of sustainability: "to release [the more-than-human] into their singularity" (ibid., p. 103), as Smith puts it.

Third, to give the more-than-human world political and ethical agency is a move towards a moral pluralism where there can be no recourse to objective truth but meanings and valuations of sustainability are contingent, that is to say "competing in a complex rhetorical economy of claims and counter-claims, values and counter-values, all of them with actual and potential losers" (Curry, 2006, p. 111). This is a consequence of leaving behind abstract monism and universalism but it does not correspond with a relativist rejection of truth as such. It is a commitment to the intrinsic value of nature which cannot be exhausted by any particular use or understanding. In Curry's words it is "deeply appreciative of, and involved in, the so-called material world in all its *sensuous particulars*, and recognizes that being ultimately and fundamentally [is] a mystery, [more-than-human natures] are not only or merely 'material'" (ibid., p. 105, original emphasis). In the absence of an absolute moral guideline, values can at times conflict and working out the ethical dimensions of an action is a kind of deliberation similar to many other aspects of life. This means that acting ethically (or sustainably) is primarily a *skill* with roots in compassion, intelligence, practical wisdom and cunning that need to be honed rather than deferred to an external codex. This shifts the notion of truth from abstract thought and verbal statements to the relations that we sustain with each other and the more-than-human world (ibid.). Sustainability, in this perspective, is a recognition that it is impossible to remove ourselves from these relations and judge them from the 'outside'. Evaluating what sustainability means in practice is only possible by participating in a relationship with what is known and by assessing that relation from 'inside' without recourse to ostensible, preceding, 'independent' facts or criteria.

These philosophical, political and ethical considerations lay the foundation for an understanding of sustainability which sees nature as intrinsic to human societies and perceives human actions as flowing through nature rather than acting upon it. This integrates insights from across various disciplines in an attempt to move beyond the limitations of the modern constitution. It is a present scholarly endeavour which is continually being explored and expanded and I do not claim to have presented a full view of it here. For

now, I conclude that rather than seeing the sustainability challenge as a question of harmonising human needs for – and demands on – natural resources with protection and maintenance of those resources, it is a matter of enquiring into, and coming to terms with, what kind of relations we wish to sustain within nature-as-matrix and how this can be achieved. In contrast with the user-resource perspective, this understanding begins from an onto-epistemological position that perceives an inherent *connectivity* and *relationality* between human and more-than-human worlds (cf. Williams, 2012) and which gives rise to a radically different understanding of relationship and agency. This approach, and the meaning of the perspective outlined above, will be developed further in the course of this study.

1.1.2   Transitions: fostering alternative sustainabilities

Discerning the 'relations that guide environment-making' thus involves engaging with the deeper 'rules' that compel new forms of living (cf. Moore, 2013). The nascent literature on sustainability transitions provides a theoretical starting point for understanding the emergence of sustainable practices, technologies and social networks around alternatives to unsustainable forms of environment-making. This field approaches societal change towards sustainability as a process of destabilising and reconfiguring relationships in dominant systems of provision by supporting and propagating radical innovations in alternative, protected spaces (Markard *et al.*, 2012). Sustainability transitions has rapidly established itself as a research area with an associated research network[6], an academic journal[7] and a series of international conferences[8]. It has also gained traction as a political project with the notion of transition being adopted into Dutch environmental policies (Kemp and Loorbach, 2006) and attracting resources and funding across different (mainly European) sectors and programmes[9]. Within this emerging framework for studying sustainability a research agenda on 'grassroots innovations' has been formulated (Seyfang and Smith, 2007) to examine the role of 'bottom-up' approaches to the sustainability challenge, and this research area provides the theoretical starting point for this thesis.

Growing out of the wider literature on 'transitions theory', this approach to studying social and technological change originates in the fields of science and technology studies (STS), evolutionary economics and innovation studies (Van den Bergh *et al.*, 2011) – see also section 2.2.1. Sustainability transitions encompasses research into "institutional, organizational, technical, social, and political aspects of far-reaching changes in existing socio-technical systems [...] which are related to more sustainable or environmentally friendly modes of production and consumption" (Markard *et al.*, 2012, p. 959). The field broadly examines how adjustments in the "cognitive routines, regulations and

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[6]Sustainability Transitions Research Network (STRN), see http://www.transitionsnetwork.org.

[7]Environmental Innovations and Societal Transitions, see http://www.journals.elsevier.com/environmental-innovation-and-societal-transitions/.

[8]In Amsterdam (2009), Lund (2011), Copenhagen (2012), Zürich (2013) and Utrecht (2014).

[9]See e.g. the section on associated projects on the STRN website: http://www.transitionsnetwork.org/projects/associated-projects.

standards, societal norms and practices, and specialized assets and competencies" (Garud and Gehman, 2012, p. 981) guide longer-term social-technological developments. Thus, sustainability transitions views the sustainability challenge as achieving broad scale, "major changes in technological, organizational and institutional terms for both production and consumption" (Farla *et al.*, 2012, p. 991) through qualitative changes in social and technical relationships by new innovations.

Such change is conceptualised as occurring through "social (inter)actions within semi-coherent rule structures that are recursively reproduced and incrementally adjusted by interpretive actors" (Geels, 2010, p. 505) and transitions research is interested in understanding how emerging and alternative rule structures that 'might work' become configurations 'do work' among a plurality of transition pathways (Berkhout *et al.*, 2004). At the level of socio-technical 'regimes', where rule-sets are mostly susceptible only to marginal change, innovation processes tend to be incremental and new innovations are consistently adapted to suit existing socio-technical configurations (Schot and Geels, 2008). Radical or path-breaking innovations take place in 'niches', where rules, institutions and motives are different from the regime; these are 'protected spaces' where "nurturing and experimentation with the co-evolution of technology, user practices, and regulatory structures" take place (Schot and Geels, 2008, p. 538). Developments within and between niches and regimes take place against the background of the socio-technical 'landscape' which describes broader social, economic, political and cultural changes that are not open to unilateral change from actors within any single regime (Berkhout *et al.*, 2004). The three analytical levels of niche, regime and landscape form the theoretical basis of the multi-level perspective (MLP), a model which describes socio-technical systems as comprised of different levels of structuration (see Figure 1.1).
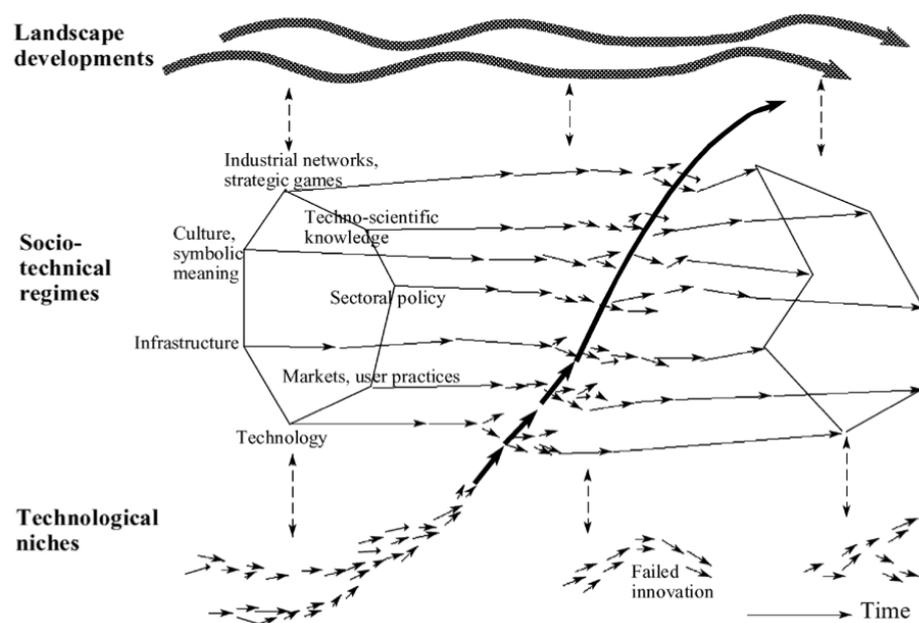

Figure 1.1: The multi-level perspective. Source: Geels, 2002, p. 1263.

While there are a number of different approaches to transitions theory (cf. Markard *et al.*, 2012), sustainability transitions generally applies this heuristic of systemic, socio-technical change to social innovations which are guided by normative, long-term (and contested) visions of sustainability (Farla *et al.*, 2012). The inquiry here focuses on social learning processes and socio-cultural context as well as specific technologies (Verheul and Vergragt, 1995), seeing reconfiguration of socio-technical relationships as opening up new realms of collective sustainable behaviours (Truffer, 2003). In this way, niches are conceptualised as a space for the emergence and transformation of new subjectivities framed around sustainability issues (ibid.). This occurs through learning processes which gradually lead to the embedding of particular sustainability visions in the social fabric (Hegger *et al.*, 2007), and visions occupy a central place in the sustainability transitions literature. Farla *et al.* (2012) identify three main challenges for future research on sustainability transitions: 1) developing the importance and dynamics of larger networks and collective action; 2) finding agency-sensitive approaches to understand what actors can (and cannot) achieve; and, 3) conceptualising how actor strategies and resources impact sustainability transitions at the system level.

In light of the foregoing observations about sustainability, and considering various critiques of the lack of clarity about the implicit assumptions and politics in many studies of socio-technical transitions (cf. Shove and Walker, 2007; Genus and Coles, 2008; Meadowcroft, 2009) as well as the 'quasi-evolutionary' theoretical assumptions and implicit knowledge mode which effectively divides the analyst and the analysed (cf. Ingold, 2000; Gibson-Graham, 2008), it is relevant to add a fourth concern about what kind of (sustainability) relations are implied and performed by this approach to studying social change. This thesis draws on insights from Radical Human Ecology and the philosophy of science to critically engage with transitions theory and create a theoretical framework for studying onto-epistemological transitions as transformations in the rules and visions that structure environment-making as a social activity. This is explored in detail in the development of the theoretical understanding of this thesis in the following chapter.

1.1.3 Transitioning to new forms of environment-making

On this background, the present study examines if and how transitions away from 'user-resource' conceptions of human-nature relationships can be studied as enactments of alternative onto-epistemological assumptions in alternative forms of environment-making. I believe that this kind of research has to acknowledge how current 'rules of environment-making' in Western societies are tied up with socio-material systems that are 'hard-wired' for consumption (Burgess *et al.*, 2003) and how socio-cultural beliefs, norms and practices underpin 'inconspicuous' consumption and tacit assumptions about nature as resource or 'standing reserve' (cf. Smith, 2011). Individuals are 'locked-in' to this social context, which is not just about material reality but includes everyday practical consciousness. Jackson (2005) puts it in the following terms:

"... we must think of individual behaviour as being 'locked-in' not just in a static but also in a dynamic sense. We are locked into behavioural trends as much as and possibly more than we are locked into specific fixed behaviours" (p. 105).

Thus, finding ways to address the implicit nature of the 'rules' which guide dominant forms of environment-making seems to me to be a key challenge for sustainability research. The sustainability literature is riddled with paradoxes, like the (micro-economic) rebound effect[10] and the (macro-economic) Khazzoom-Brookes postulate[11], which highlight the problem of pursuing techno-centric forms of sustainability without considering the deeper assumptions embedded in such forms of environment-making. If efficiency gains alone are envisioned as the route to sustainability, it may well be that sustainability simply becomes a mere pursuit of elite forms of knowledge (Hobson, 2002).

Given the counter-intuitive nature of many of the problematics involved in debates about sustainability, it is imperative that the underlying 'rules and visions' of particular forms of environment-making are examined. As Røpke (1999) puts it: "the environmental benefits of a change in consumption practices in one area can easily be counterbalanced by increased consumption in other areas, if overall growth is not limited" (p. 401). The literature on sustainability shows a need to address the cultural narratives of growth, development, and progress and engage with the deeper social ideals and practices that shape everyday consumption patterns (Urhammer and Røpke, 2013). This requires interdisciplinary perspectives which acknowledge that "sustainability requires a realigning of development priorities away from the primary goal of economic growth towards wellbeing instead" (Seyfang, 2009, p. 23). Because sustainability transitions involve the transformation of subjectivities around normative, long-term visions of the future it is requisite to inquire into the role of cultural narratives in enacting alternate rules of environment-making. This in turn calls for directly engaging with the ways in which the notion of sustainability is imagined, storied and corroborated within peer groups. And it highlights the importance of community: notions of 'sustainability' or 'the good life' which guide the direction of social change are established and validated in interpretive communities (Hatton, 2007).

Grassroots innovations, conceptualised as situated sustainability experiments with an explicit focus on social learning and where rules and visions are different to the mainstream (Seyfang and Smith, 2007), provide a good starting point for an inquiry into new forms of environment-making. As catalysts of new knowledge and learning processes, grassroots innovations are prospective sites of transformative sustainability visions and (counter-)narratives, and when alternative knowledges become embodied in new practices grassroots innovations become sources of socio-cultural transformation, creating new possibilities for living differently. In this way, grassroots innovations are potential

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[10]Where energy (or resource) savings from more energy efficient technology can be offset by increases in consumption (Binswanger, 2001).

[11]Which shows that increased energy efficiency on a macro-economic scale can actually increase energy use because, overall, more money is invested in energy-intensive goods and services than would be the case without the efficiency gain (Monbiot, 2007).

sites of transition not just in material practices but in worldviews: sources of transformation in the experience and interpretation of reality which give rise to new ways of being and thinking. Current research on grassroots innovations has furthered an understanding of how alternative sustainability visions are driving participation in, and growth of, grassroots initiatives by conceptualising subjectivities as co-constructed in social learning processes which gradually lead to the embedding of new sustainability concepts in social contexts (cf. section 2.1). However, more emphatically developing an understanding of how grassroots innovations become sites for transformation in onto-epistemological assumptions about the world is needed to discern how they nurture particular forms of sustainabilities and how different (radical) visions of sustainability shape the kind of actions grassroots initiatives engage with.

1.2 Framing and composition of the thesis

A perhaps obvious, but necessary, point to make is that this research is by nature interdisciplinary combining understandings from sustainability transitions, Radical Human Ecology and eco-linguistics with ethnographic, narrative and participatory methods. It is now almost a given that research on sustainability is interdisciplinary in style considering the complexity of the problematics pertaining to this topic (Gallopín *et al.*, 2001). Examining worldviews or onto-epistemologies only adds to this imperative: the nature of the knowledges involved in such research calls for a variety of approaches to knowing *about* them. Furthermore, as Morin (2007) affirms, theorising profoundly complex issues like sustainability means that "[t]he principle of disjunction, of separation (between objects, between disciplines, between notions, between subject and object of knowledge), should be substituted by a principle that maintains the distinction, but that tries to establish the relation" (p. 11). In parallel, we can say that worldviews are not simply 'in our heads' we are also *in them* and knowing about them requires that we accept positions – and gain competences – as both producers and products of our onto-epistemological beliefs about the world. As a performative research project that seeks to overcome the tendencies of the modern project to erect new conceptual dualisms (cf. Ekins, 1992), the theoretical and methodological orientations of this thesis aim to embody a knowledge mode which avoids (re)producing the binary framework of society/culture vs. environment/nature by proceeding in a way which "neither imitates the older orders nor denies their validity altogether" (Bohm, 2004a, p. 17). This resolve has not always been an easy practice: as a product of my own worldview I have frequently encountered my own inabilities, habits and limits. And so this study is also an exploration of researching as a transformative practice as it is my contention that speaking of and evaluating sustainability in practice is necessarily a form of participation in the relations and activities that are being examined.

The empirical research has been undertaken with the Dark Mountain Project, a cultural movement that has recently emerged from the UK and which describes itself as "a

network of writers, artists and thinkers who have stopped believing the stories our civilisation tells itself"[12]. The sustainability challenge, in the terms used by the Dark Mountain Project, entails *uncivilising* and unlearning many of the assumptions embedded in the Western meta-narrative of progress. The work challenged both my ideas about social change and my identity as a researcher and it is therefore also marked by the gradual evolution of my own worldview and way of thinking. As an in-depth qualitative study of onto-epistemologies undertaken with participants in a network which has formed in part around online interactions, I have had to engage with a variety of methods which convey differing knowledges in different activities and contexts. I have also had to include my own experience and lifeworld as an object for reflection (I explain the implications of this further in the methodology). In this way, the empirical chapters are written as an ethnography drawing on participatory methods, phenomenological practice, and narrative inquiry. The aspiration has been to create an immersive 'virtual reality' (cf. Flyvbjerg, 2006) for readers to be able to explore my findings on their own terms.

1.2.1 Research questions

The starting point for this thesis is, as outlined above, the need to understand the ways in which the sustainability challenge is narrated within interpretive communities and how this affects individual and collective worldviews and actions. Therefore, the overarching question that guides the research is:

How do sustainability narratives affect lifeworlds within grassroots innovations?

In the course of developing the theoretical framework and undertaking the empirical research, four further questions were identified in order to help answering that broader question:

1. *How do sustainability narratives inform what kinds of knowledge and action participants engage with in grassroots innovations?*

2. *How are transformations in individual and collective cultural narratives expressed in participants' worldviews and actions?*

3. *How do sustainability narratives affect the organisation and diffusion of grassroots innovations?*

4. *What is the role of stories in enabling emerging practices and tools for social change?*

These questions grew out of an understanding of mutual narration of the sustainability challenge as an activity which positions narrators within wider cultural narratives, generates a sense of self/other and gives meaning to human-nature relationships. In addressing these questions, this thesis seeks to make a contribution to understanding transformations

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[12]See: http://dark-mountain.net/.

in worldviews within situated interpretive communities and to conceptualising how alternative sustainability visions are imagined and embodied in grassroots innovations. It does so by building a theoretical understanding of qualitative changes in the rules and visions that guide particular forms of environment-making, constructing a methodological framework for researching onto-epistemological change and conducting an empirical case study. In this way, the thesis moves three related research agendas on sustainability forward as it aims to: 1) show how social change and innovation can be studied without reproducing the division between analyst and analysed inherent to transitions theory; 2) construct a transformative, transparent and emergent methodological framework for studying onto-epistemological change *with* research participants; and 3) enable new sustainabilities by creating a 'virtual reality' which allows the reader to query the arguments of this thesis and become sensitised to the problematics it addresses.

I have come to see my personal process as part of a wider cultural and academic current which is in the throes of transforming modernistic and reductive assumptions about the self and the wider world (cf. Varela *et al.*, 1991; Ekins, 1992; Bohm and Hiley, 1993; Norgaard, 1994; Capra, 1996; Lovelock, 2000; Gibson-Graham, 2008; McGilchrist, 2009; Latour, 2010; Ingold, 2011; Williams *et al.*, 2012). Into what, is a question that cannot be answered quite yet – at least for me – and for this reason it is necessary to acknowledge budding sustainability experiments for what they are: seeds of change that have yet to flourish, and to avoid projecting unrealistic hopes or powers onto them in our search for ways of addressing the momentous challenge of sustainability. Nonetheless, I hope to have shown that a wider qualitative change in experiencing and perceiving 'nature' and the problematics pertaining to 'sustainability' is possible and to have established theoretical and practical pointers for further work in this vein. The following section provides an overview of the structure of the thesis.

1.2.2   Outline of the thesis

The next chapter begins with a review of the existing literature on grassroots innovations, its objectives and current research challenges. This provides the starting point for building a theoretical understanding of sustainability innovations as instances of re-imagining human-nature relationships and conceptualising grassroots sustainability experiments as sites of transformation in worldviews. The chapter then explicates how onto-epistemological transitions can be studied as transformations within social life, that is, as qualitative changes in how the world is experienced and known. It does this by contrasting the theoretical framework of transitions theory, which ultimately isolates actors and their environments, with approaches that take relational coherence and context as their starting point. This exposition suggests that research on onto-epistemological transformation needs to avoid certain modes of theorising if it wishes to discontinue the assumptions inherent to the user-resource perspective on sustainability. The rest of the chapter continues to expound how onto-epistemological transitions can be studied by examining the rules and visions that guide particular forms of environment-making. To do this, it draws on

insights from across literatures on the philosophy of science, Radical Human Ecology, eco-linguistics and narrative sociology.

Chapter 3 then proceeds to create a methodological framework for studying changes in onto-epistemologies. Grounding the research in approaches spanning ethnography, phenomenology, narrative inquiry and participatory research, the chapter explains how the methods for this study were designed to introduce a radical transparency into the research and generate an emergent framework for the case study. Through the approach of 'following the narrative', the aim has been to produce a 'virtual reality' which allows the reader to access and assess the findings on their own terms. This method is explained in detail as are the ethics and specific strategies for ensuring accountability. The chapter then describes how the data was collected, interpreted and patterned in a recursive movement between observation, reflection, analysis and theory. Lastly, the construction of the empirical chapters is discussed and, as much of the data which forms the empirical basis of this thesis is publicly available, guiding comments for following the various data points back to their sources are provided.

Chapters 4-6 present an in-depth ethnographic narrative of the Dark Mountain Project and the ways in which participants explore aspects of individual and collective worldviews in mutual inquiries. Chapter 4 considers how the Dark Mountain narrative constitutes an alternative narrative framing of current social-ecological crises which allows participants to position themselves differently in relation to mainstream narratives about climate- and environmental change. It shows how the Dark Mountain Project can be viewed from different perspectives and proposes that a key quality and point of attraction for participants is its ambiguity as a space of inquiry. Chapter 5 inquires into the ways in which participants re-imagine their lifeworld by exploring new ways of speaking and interacting in conversations and creative practices. It also explores how new meanings can emerge outside deeper, acculturated ways of seeing by questioning language and concepts that has been naturalised as 'real'. And Chapter 6 probes how new ideas and experiences are embodied in participants' lives through acquiring new attitudes and skills as well as it considers how new social institutions emerge from the activities within the Dark Mountain Project. The three chapters each address different aspects of the research questions outlined above.

Finally, Chapter 7 concludes this thesis by answering each of the research questions, explicating how re-narrating cultural narratives of sustainability opens up for transforming the meanings, stories and practices that are shaped by the user-resource view of human-nature relations, and discussing the implications of the empirical findings for the theoretical understanding of sustainability transitions. This chapter suggests that the critical factor in transforming modes of environment-making is not so much particular sustainability visions or narratives but the creation of supportive spaces which can hold open and inclusive inquiries into the meaning of particular sustainabilities. This has, if accepted, wide-ranging significance for practicing and theorising sustainability and the chapter ends with proposing ways that further research on onto-epistemological transitions can create new possibilities for changes in worldviews beyond grassroots innovations.