Environmentalism in Transition? Emerging Perspectives, Issues and Futures Practices in Contemporary Environmentalism

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Abstract

In this article I consider desired and in-progress reframing of environmentalism to better "fit" and influence the contemporary context. This review is structured by the Transformation Cycle, a critical futures studies tool. Emerging perspectives, issues and practices are highlighted and interpreted to contribute to research and action pursuing more sustainable futures. I draw on Dryzek's model of competing environmental discourses and the concept of "waves" of environmentalism, and ask: is environmentalism in transition? The article presents evidence of increased "futurism" (as defined by Jim Dator) in environmental movements and new forms of "positive dissent" (as defined by Richard Slaughter) that demonstrate significant innovations in the use of futures methods to create desired futures. The article concludes by reconsidering and reasserting the case for the futures and environmental fields working more closely together.

Keywords: environmental movements, sustainability, environmental discourses, normative futures, positive dissent, discourse analysis

1. Introduction

In this article I consider emerging forms of environmentalism and eco-discourse to highlight new responses to the intensifying global problematique *and* provide a grounding perspective for futures practitioners. As I work more in the broad sustainability area – as futures researchers and foresight practitioners increasingly do – I frequently encounter conflicting perspectives and the

growing tension between them. Moreover, related perspectives on the future seem to be diverging rather than converging on a common future.[1] As such I have felt the need to better understand current and emerging perspectives. This article "steps back" to consider different and emerging approaches to environmental issues, and, as Garforth (2005) notes, how the future seen through the lens of environmentalism has a dual focus on "an unthinkable or utterly miserable prospect" and "recouping a better future".

My central aims are to: present key issues and emerging tensions identified through literature review, my own experiences in the sustainability sphere, and consideration of eco-discourses; and, to highlight emerging perspectives and practices as environmental movements become more futures-oriented. The context for these issues and practices is the increasing desire to go beyond incrementalism and "tokenism", and more challenging debates centred on alternative future scenarios. The issues and tensions noted, among others, may make necessary actions more difficult to achieve, whilst these practices present new ways of using futures methods to inspire change and initiate transitions. By raising awareness of these emerging issues and practices I hope to contribute to research and action pursuing sustainable futures.

Relevant interpretative frameworks and perspectives are first introduced. Next, consideration of emerging perspectives and practices is structured according to the main stages in Slaughter's Transformation Cycle (see Figure 1 below) which directs attention towards *internal* change, rather than technical or environmental change, and associated "recovery of meaning" (Slaughter, 2004). Finally, I briefly consider whether a significant new "third wave" of environmentalism is emerging, and whether new approaches will be legitimised, and the case for further collaboration between the futures field and environmental community.

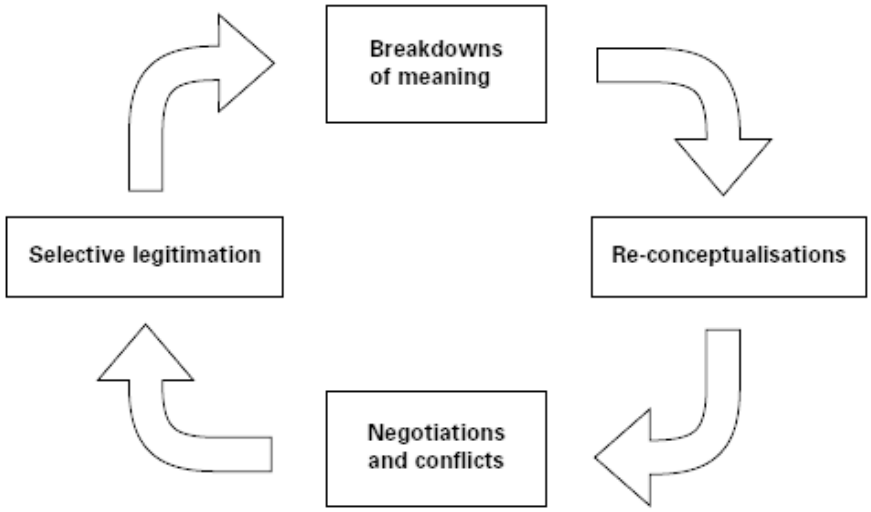

Figure 1. The Transformation Cycle or "T-cycle" (basic version presented in Slaughter, 2004, p. 6; see p.9 and p.51 of the same publication for more elaborated versions of the t-cycle)

2. Interpretative Frameworks and Perspectives

Discourse analysis can be used to analyse approaches to environmental issues and associated contests over meaning (Dryzek, 2005). Dyzek's authoritative analysis defines a discourse as a "shared way of apprehending the world" and he uses this approach to reveal and consider how environmental matters are subject to dispute between people who think very differently and pursue competing visions.[2] According to Dryzek, environmental discourses are defined according to their position vis-à-vis industrialism: whether *reformist* or *radical* departures from industrialism are sought and whether this departure should take the current "political-economic chessboard" as "pretty much given" (*prosaic* approach) or redefine it (*imaginative* approach). These dimensions produce the following interpretative framework:

Table 1.
Classifying Environmental Discourses: Four Categories (Dryzek, 2005, p.15)

	Reformist	**Radical**
Prosaic	*Problem solving* Administrative rationalism ("leave it to the experts"), Democratic pragmatism ("leave it to the people"), Economic rationalism ("leave it to the market")	*Global limits* Survivalism
Imaginative	*Sustainability* Sustainable development, Ecological modernisation	*Green radicalism* Green consciousness, Green politics

These discourses approach environmental matters in the following ways:

- *Environmental problem-solving*: this discourse advocates and pursues adjustments within the political-economic status quo to cope with environmental problems. Depending on the form, this problem-solving should be coordinated by bureaucracy (*administrative rationalism*), democracy (*democratic pragmatism*), or markets (*economic rationalism*);
- *Limits*: this discourse contends that growth is approaching fundamental limits (potentially leading to collapse, as highlighted by survivalists). Consequently, rapid reorientation away from perpetual growth is sought;
- *Sustainability*: conflicts between environmental and economic values are seen as capable of resolution; in particular by refining the concepts of growth and development (also see Ellyard, *this issue*). Adherents question what are seen as "simple" limits projections and reject abandoning the basic parameters of contemporary liberal capitalism; and
- *Green radicalism*: adherents argue a new ecological sensibility is required, rejecting the structure of industrial society, current conceptions of nature and cultural norms.

In the current context Survivalism is "back in vogue" (Barrett, 2010) and the broader limits discourse has diversified. Further analysis is examining a broader range of "natural boundaries" ranging from the rate of biodiversity loss to the level of ocean acidification (Rockstrom et al., 2009), the capacity of renewable energy sources to sustain Western lifestyles or provide these to all people (Lloyd & Forest, 2010;

Trainer, 2007 & 2010), and emerging growth trajectories (Jackson, 2009). Dryzek (2005) also notes that the initial rise in the prominence of the global limits discourse in the 1970s led to the articulation of a fifth discourse category: "Promethean" responses. Prometheans have unlimited confidence ecological concerns can be overcome, particularly via new technologies, and believe "the current trajectory of liberal capitalism is unproblematical" (Dryzek, Goodin, Tucker, & Reber, 2009, p.232).

A related perspective, as social constructivists have argued, is that what is considered "sustainable" is subject to personal and societal preferences. Assessments of sustainability and approaches to environmentalism are socially constructed and culturally mediated in particular contexts (Cary & Wilkinson, 2002; Dellink, Bennis, & Verbruggen, 1999; Eden, Donaldson, & Walker, 2006; Fisher, 2006; Johnson & Wilson, 2000; Shove, 2003; Walker & Shove, 2007; Yearley, 2008). This perspective highlights that, beyond key "non-negotiables", the pursuit of sustainable futures will remain highly contested.

2.1 Waves of environmentalism

A simplified history of modern environmental movements reveals core "waves" of activity. In the 1960s a new *protest movement* developed in response to the consequences of industrialism. This wave had a strong techno-aversion, was informed by studies such as *The Limits to Growth* (Meadows, Meadows, & Randers, 1972) and produced utopian blueprints (Brown & Shaw, 1982). In contrast to traditional utopias of universal affluence through material expansion, in these green utopias of sufficiency "human wants are reduced or reconfigured" (Garforth, 2005). By the mid-1980s a new wave emerged focussed on achieving *consensual action* through mainstream institutions (Beder, 1994), managing problems and *balancing* trade-offs in the "here and now". It introduced frameworks and ideas such as the "triple bottom line" and "sustainable development", which *aims to negotiate* a middle ground between competing claims of the economy, environment and society (Beder, 1994; Mitcham, 1995). Sustainable development has since risen to become the dominant framing of environmental issues.

These waves both succeeded and created new problems. Incorporating the environment in mainstream concerns led to the agenda being taken "out of the hands of environmentalists" and shaped by economic interests (Beder, 1994 & 2001). An unstable "light-green social order" emerged in advanced economies (Bess, 2003), which Bess describes as a hybrid: neither "green" nor "industrial". In this context, environmentalists frequently argue sustainable development is not an adequate approach (Castra, 2004; Ellyard, 2009; Fry, 2009) and the superficial consensus consequently began to give way to new discourses (Redclift, 2005). Similarly, Beder (1994) had called for a "third wave of environmentalism that transcends both protest and consensus approaches". The drivers and processes of changes towards such a wave are usefully modelled by Slaughter's Transformation Cycle.

3. Recent 'Breakdowns in Meanings'

"Breakdowns in meaning" are stimulated when the limitations of existing under-

standings, concepts and values are revealed (Slaughter, 2004). The truism that what worked in the past may be a recipe for failure in the future also captures part of this process. For example, Nordhaus and Schellenberger (2005), American advocates of a new "post-environmental" movement, contend that environmentalists must question their "most basic assumptions" about what they stand for and should be doing in order to successfully address current ecological problems.

3.1. The contemporary context

More complex issues, such as climate change and biodiversity loss, now supplement the traditional concerns of environmentalists such as wilderness preservation and the depletion of resources (Dryzek, 2005). Furthermore, climate change also introduces a new "limits debate" (Eastin, Grendmann, & Prakash, 2011): scenarios are similarly used to communicate the results of complex models and consider the potential for catastrophe. David Attenborough's (2010) documentary *"How many people can live on the Earth?"* profiled additional complex challenges, such as food security, in the context of the growing human population. Concerns are also growing that the continuity of what underpins current social and economic systems, such as energy flows, is threatened (Brown, 2008; Holmgren, 2008).

Changes to the interactions between natural and human systems are also crucial contextual factors. Two aspects stand out: the remarkable rate of urbanisation (see Figure 2) and, more abstractly, the increasingly complex interactions between natural and human systems as 'nature penetrates society' *and* 'society penetrates nature' (Bess, 2003; Latour, 2008).

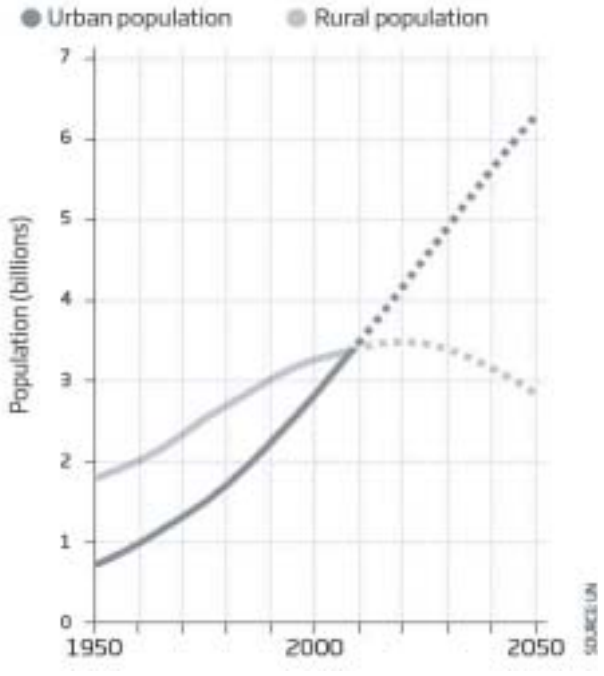

Figure 2. The Rural Exodus (from Barley, 2010)

In the contemporary context solutions also increasingly need to be global (e.g. with the amount of greenhouse gas emissions from the developing world soon to exceed the developed world[3]), and powerful forces tend to marginalise environmentalism (Anderson, 2010). Anderson highlights disconnection from everyday lives (i.e. seeing the environment as an abstract "out there"); swimming against the cultural tide of pro-consumption and development-orientation; and a perceived "self-denial" and doom-laden focus.

3.2. Breakdowns in traditional meanings

Concerns about the dominance of dystopian visions, "catastrophism", and fatalistic perspectives in ecodiscourses are growing (Flannery, 2010; Nordhaus & Schellenberger, 2004 & 2008; Turner, 2007). Flannery (2010, p.273) even argues "it's become fashionable to assume the worst, to imagine that our global civilisation has passed its peak and will soon collapse". The romanticisation of visions of a simpler life and related ideal of more stable, pre-modern forms of society is also increasingly critiqued and argued to now be inappropriate (Fry, 2009; Nordhaus & Schellenberger, 2010; Robertson, 2007). As Fry (2009), for example, asserts "nature alone cannot sustain us: we are too many, we have done too much ecological damage, and we have become too dependent upon artificial worlds". Others, such as Lewis (1992 & 2007), question the environmental implications of what they term "eco-radicalism", arguing such an anti-modernist mindset restricts the search for solutions.

Technological and climate change also problematise meanings. So-called "emerging technologies" – e.g. nanotechnology, biotechnology, and further advances in information and communication technologies – bring new possibilities and questions (Olson & Rejeski, 2005; Schwartz, 2009) that sit uneasily with underlying technological skepticism. This is important in an emerging era of 'converging technologies'. Brand (2009) argues climate change expands the perceived role of environmentalists. He believes they now see themselves as "defenders of civilization" as well as "defenders of natural systems against the incursions of civilization".[4] This is true for many of the environmentalists I have met. I too have felt such pressures.

Scholars outside the movement also question existing understandings and approaches. Latour's (2008) argument that environmentalism fails because it is not "at least as powerful as the modernizing urge" complements internal critiques. Latour argues dominant framings leave "nothing but gloomy asceticism" and also challenges belief "in the existence of Nature to be protected" (i.e. the ideal of a pure nature).[5] Yearley (2009), an environmental sociologist, similarly argues ecodiscourse problematically "treat nature as apart from culture" and contends that envisaging of sustainable societies has been "unjustifiably restricted" due to limited engagement with sociological questions (Yearley, 2005). These scholars agree, as Anderson (2010) argues, that environmentalism needs reframing to "fit" the contemporary context.

4. Proposed and Emerging Re-Conceptualisations

Over the last five years increasing efforts have emerged to reconceptualise ecodiscourses. An important current of activity aims to shift from a collapse focus towards a

more positive, possibility-centred orientation (Flannery, 2010; Madden, 2009; Moody & Nogrady, 2010; Nordhaus & Schellenberger, 2004 & 2007; O'Brien, 2009b; Steffen, 2006; Turner, 2007). As part of this shift, a new, optimistic "Bright Green" school of thought has emerged and rapidly grown around the world (Steffen, 2006 & 2009a).

Bright Greens argue we must urgently create a "sustainably prosperous society" that operates within the planet's limits. They contend that "any vision of sustainability which does not offer prosperity and well-being will not succeed" (Steffen, 2009a). Steffen (2006), a key thought leader in Bright Green, also advocates a dual-focus on "how imperilled the planet is at present" and "how great the future could be". The explicit recognition of ecological limits (Steffen, 2006, 2007a & 2009b) is aligned with radical discourses, whilst core prescriptions align with reformist discourses, creating an appealing fusion. Prominent environmentalists such as Tim Flannery (2008 & 2010) and Al Gore express this perspective.

Proponents emphasise rapid "systemic change" rather than "personal virtue" (Steffen, 2007b), with additional fields such as design, engineering, applied sciences, entrepreneurship, and marketing seen as playing crucial roles. Deeper narratives are also challenged. For example Nordhaus and Schellenberger (2007) and Madden (2009) – Bright Greens from the Breakthrough Institute (USA) and Forum for the Future (UK) – argue dominant narratives must change from "eco-tragedy" and apocalyptic stories to new ones with positive framings.

In contrast to Bright Green, prominent reconceptualisations are also evident towards spiritual practices (Taylor, 2010), a new "dark green religion", and new cultural movements seeking transformative cultural change in response to peak oil and climate change.[6] Overall, Mulvihill differentiates between "declining" and "emerging" environmentalism:

Table 2.
Evolving Tendencies in Environmentalism (as presented in Mulvihill, 2009, p.504)

Declining environmentalism	**Emerging environmentalism**
Crisis-driven; doomsday outlook	Ongoing urgency; focus on solutions
Waves of influence and setbacks	Slower, steadier gains
Ideology, advocacy, and polarization	Compromise and trade-off
Prescriptions	Adaptation and improvisation
Essentialism	Pragmatism
Solidarity and revolutions	Dispersion and complexity
Insularity	Expansiveness
Utopian visions	Heterotopian visions
Standard environmental arguments: resource scarcity, ecological limits and the need for conservation	More nuanced and sophisticated environmental arguments
Bonding networks	Bridging networks
Predominantly western influence	Diverse global influence
Alternative	Blurring of alternative/mainstream
Visionary	Subtle, sub-textual
Distrust of gray areas and relativism	Paradox, ambivalence and contradiction

These emerging and nascent shifts can be expanded on to highlight new perspectives as expressed in recent environmental literature. Here I focus on four of them.

4.1. New perspectives and visions

From utopian to heterotopian visions: Environmental visions are becoming more diverse. Jensen's (2006a & 2006b) *Endgame* and Flannery's (2010) *Here on Earth: An Argument for Hope* provide bookends. Jensen calls for the destruction of modern civilization on ecological, cultural and moral grounds whereas Flannery's vision is a global human civilisation in accommodation with the planet, enabling an "intelligent Earth". Flannery's vision is grounded in "the notion of humans as indispensible elements in the Earth system" (i.e. taking on "Gaian responsibilities") and he argues social changes, especially achieving global and social equity, must be central to the pursuit of sustainable futures. He further advocates embracing high-tech management systems (e.g. satellite systems monitoring ecosystems and damaging activities) and leading edge ICT in agriculture, and pursuing quantum leaps in technology (e.g. for "smart" energy grids and zero emissions transport) and in science to revive lost species and ecosystems.

Vast arrays of emerging visions sit between these bookends, including: visions of a "power down" in which energy and resource demands are rapidly scaled back through "graceful decline" (Heinberg, 2004; Holmgren, 2008; McKibben, 2010; Trainer, 2007, 2010a & 2010b); "enoughness" (Naish, 2008) in a "post-progress world" (Sim, 2010); "re-localised resilience" with new "distributed systems paradigm" providing food, energy and water in a more dispersed and localised fashion (Biggs, Ryan, & Wiseman, 2010; Ryan, 2008); and a "technologically-advanced sustainable society" harnessing emerging technologies (Lu, 2009; Moody & Nogrady, 2010; O'Brien, 2009b; Olson & Rejeski, 2005; Schmidt, 2007a & 2007b). The latter two are emerging Bright Green visions. Visions are also proposed at different scales, such as nations (Friedman, 2008; Wright & Hearps, 2010) and local communities (e.g. Transition Towns). Table 3 provides a representative summary across the expanding spectrum of environmental beliefs:

Table 3.
The Emerging Spectrum of 21st Century Environmentalism – Drawing on Various Sources (Bess, 2003; Jensen, 2006a & 2006b; Porritt, 2006; Robertson, 2007; Steffen, 2009 & 2006; Taylor, 2010; World Business Council for Sustainable Development, 2010)

Form	Beliefs	Prescriptions	Example visions
Dark green religion	-Nature is sacred, new spirituality needed (e.g. nature worship, Gaian religion, etc) -Industrial societies are inherently destructive; indigenous societies superior in many ways -'Development' can never be sustainable	-Provide nature with reverent care -Develop understanding of the human place in Gaian system and moral concern for the planet -Transform self, values, society; re-adopt traditional beliefs/customs -Political transformation	-Reversing the 'rush toward biocultural simplification' -Scaling back civilisation
Dark green (traditional green)	-Consumerism and industrialisation must be urgently reduced -Over-consumption and exponential growth are the central cause of sustainability problems -Belief in community-based approaches; little faith in future technoscience solutions	-Local solutions, direct connections to natural systems -Reduce consumption -Community-level action (e.g. Carbon Rationing Action Groups, Transition Towns initiatives, permaculture, etc) -Political choices, collective action	-Relocalisation, smaller-scale (e.g. 'post-Peak Oil' ready) -Radically reinvented socioeconomic order
Light green	-Ecology and technological modernity can be made to flow together more harmoniously -Consumer/individual action and responsibility are required	-Consumer/individual change -Green technology development, business, and government -Direct 'ecological management'	-Eco-technocrats shaping the 'next industrial revolution'
Bright green	-Visions must offer prosperity and sustainable wellbeing for Global North and Global South, incorporating developing world aspirations -A sustainable global civilisation is possible -Radical changes are urgently needed -'Sustainable innovation' needed; focus on 'individual lifestyle responsibility' and personal virtue insufficient and problematic	-Go beyond 'living more simply' – harnessing innovation, capitalism, and emerging technologies so that current 'standard of living' does not need to compromised - Restructure systems of production and consumption -Tackle social problems e.g. inequality, poor democracy as part change efforts	-A technologically-advanced sustainable society -Unprecedented global prosperity 'on a sustainable basis'

Bright and darker green camps agree that commonly proposed solutions, such as "living more simply" and "sustainable lifestyles", cannot deliver the necessary scale of change (Holmgren, 2008; Nordhaus & Shellenberger, 2008; Nordhaus, 2010; Steffen, 2006). Beyond this agreement many deep tensions exist. For example, some bright greens propose, as part of their vision, embracing new "high finance" models. New market mechanisms for aligning economic incentives and ecological imperatives such as "biodiversity derivatives", "environmental mortgages", and "biodiversity offsets" are being proposed (Donlan, Mandel, & Wilcoxl, 2009). The argument that maintaining biodiversity requires species to have an economic value would outrage darker green environmentalists.

From essentialism to pragmatism: The advocacy of "eco-pragmatism" is an emerging theme, particularly in response to the climate problem.

Barry Brook, Sir Hubert Wilkins Chair of Climate Change at University of Adelaide, recently called for "promethean environmentalism, a new "ruthlessly practical" approach (Brook & Lowe, 2010). This approach – which can be distinguished

from the Prometheans described earlier, as it acknowledges the seriousness of environmental impacts and challenges – would involve shunning "romantic notions", accepting "the deep-seated human propensity to revel in consuming and to hope for an easier life" and abandoning the belief that a less consumption-oriented world is possible and, and considering whether renewable energy can meet growing global demand.[7] Similarly Steffen (2007c) declared "I have no faith that people in the United States or elsewhere will voluntarily reduce their standard of living". The contrast with earlier green perspectives and utopianism could not be starker. For Brook, delivering this way of life in "a sustainable way" around the world, controversially, requires embracing next-generation nuclear power technologies among other actions (see his argument for this in Brook & Lowe, 2010; Nicholson, Biegler, & Brook, 2011).

In his "Ecopragmatist Manifesto" Brand (2009) advocates a similar reconceptualisation, arguing science must take the lead and that technology development must be accelerated. Moreover, a new mindset and perspective is called for that reconsiders and embraces biotechnology (e.g. genetically modified foods), nuclear power, geo-engineering, and urbanisation. Brand earlier advocated very different solutions and perspectives in counter-culture publication *Whole Earth Catalogue* during the *first* wave of modern environmentalism.

US think tank the Breakthrough Institute advocates similar views (Nordhaus & Shellenberger, 2009; Shellenberger, Nordhaus, Navin, Norris, & Noppen, 2008). Shellenberger et al. argue progress cannot be made on climate change if it is framed as a "choice between poverty and environmental ruin" creating what they argue is a "Gordian Knot" making the issue politically impossible to tackle. Consequently they call for a "global technology race" to reduce the cost of clean energy. Nordhaus (2010) further argues for a shift from "climate nihilism" to a "climate pragmatism", with Prins et al (2010; Nordhaus & Shellenberger are co-authors) arguing "decarbonisation will only be achieved successfully as a benefit contingent upon other goals which are politically attractive and relentlessly pragmatic".

Whilst such perspectives could be seen as replacing existing ideologies with new ones, or as "repackaging" belief systems,[8] on the other hand they could be a weak signal of a greater willingness to abandon ideology to do what is necessary to achieve environmental goals. Similarly, Taylor (2010, p.218) argues strategies with modest risks should be aggressively pursued if they reduce the potential for catastrophic future outcomes. Another way of viewing this is the challenging of deep green perspectives, which are viewed – correctly or not – by some activists as a limiting political ideology.

From standard to more nuanced and sophisticated arguments: Rhetorical shifts are developing to go beyond "preaching to the converted" and engage new audiences. Crucially, this is argued to require adopting more positive, aspirational narratives and avoiding narrow framing of environmental problems (Brulle & Jenkins, 2006; Evans & Abrahamse, 2009; Futerra, 2009; Nordhaus & Scellenberger, 2008; Steffen, 2008). Environmental issues are explicitly linked to other concerns, such as economic ones in the "green jobs" agenda, and social aspirations are highlighted. An interesting example is the promotion of urban farming and related growth of a new breed of urban environmentalist. Urban Reforestation, an NGO in my home town of Melbourne, promotes

urban farming by advocating "bringing back community" and the development of "creative communities" (i.e. promoting social and cultural goals).

From distrusting grey areas to paradox, ambivalence and contradiction: Grey areas now abound in environmentalism. Consider cities: denser living is greener in some ways to country living (Barley, 2010; Owen, 2009), however social indicators suggest cities are worse for health and wellbeing (Schultz, 2010) and contribute to disconnection from nature. "Black-and-white" assessments are impossible. Anderson (2010) proposes a reframing away from binary poles, of 'green' and 'not-green', to "reflexively engage with issues of complexity and inconsistency in an open way." He argues:

> *Actioning environmentalism is... never to practise absolute consistency or purity; practising environmentalism becomes a performance of the problematic, joining our 'green' aspirations to our industrial behaviours in conversations and imaginings that may change history.*

Anderson argues this approach is needed to reinvigorate environmentalism by working with and through current "structures, institutions, ecologies and cultures that we exist in." Such a shift is similar to a move towards eco-pragmatism. This reconceptualisation aims to "reinstall a middle ground" in order to make further experimentation possible.

4.2. Novel experiments and futures practices

Mulvihill also noted an emerging shift towards an urgent focus on finding new solutions. Identified exemplar experiments and emerging practices bring this to life.

The *Sustainable Technology Development (STD) Programme* (Weaver, Jansen, Grootveld, Spiegel, & Vergragt, 2000) argues the core requirement is "path-breaking innovations" providing factor-10 to factor-20 improvements in resource use and waste. The program experimented with methods to manipulate innovation processes, aimed at creating the "technical possibility of major jumps" through new "synergistic clusters of technologies brought together to achieve specific purposes" (Weaver et al., 2000, p.86). Backcasting was the central methodology, proposing highly challenging requirements such as asking what is possible in a world without fossil fuels and generating shared visions and actions in relevant networks. Visions and proposals were developed for nutrition, mobility, buildings and urban spaces, services provided by water, and services provided by materials/chemicals such as developing novel protein foods, collective centralised washing services, and mobile hydrogen fuel cells for transport.

The *Sustainable Everyday Project* (SEP), an eighteen country investigation of community visions, experiments with new approaches to steer change via "social conversation on possible sustainable futures" (Manzini & Jegou, 2003). Three core activities are conducted: scenario laboratories, in which visions of "sustainable everyday life" are proposed; case study development of promising innovations; and public exhibitions. The guiding philosophy is drawing more attention to promising signals of change (Jégou, Thoresen, & Manzinil, 2009; Manzini, 2006). In contrast to the STD program, SEP focusses on social innovation and learning. In this regard, Manzini and

Jegou (2003) assert that "a new skill is required: the ability to 'put on stage' possible futures, enabling them to be discussed democratically and for us to decide which of them are more desirable".

The scenarios generated by SEP envision new social systems and behavioural patterns that incorporate existing technologies. Concepts brought to life in "videosketches" include concepts for maintaining mobility with reduced car usage (e.g. new "real-time" shared mobility networks), optimised collective services, and moving from ownership-based to sharing models. These scenarios also communicate desired cultural changes, such as greater collectivism. The strength of the SEP is that it provides a sense of what social practices and institutions could be part of a "sustainable society".

Another novel initiative is the *Victorian Eco-Innovation Laboratory* (VEIL). VEIL is an "experiment in changing commitments to past patterns of development", operating as a government funded partnership between universities to promote "emerging technical and social innovations that could form part of future sustainable systems" (Ryan, 2008). It has two strategic goals. First, to influence community expectations so business-as-usual futures are not expected. Second, VEIL aims to seed new ideas by stimulating visionary work by design students and producing publications on ideas for system-change (e.g. the concepts of "food sensitive urban design" and "water sensitive cities").

The project has a 25-year envisioning horizon (Victorian Eco-Innovation Laboratory, 2010). The central vision is "systemic change" for a "low-carbon and resilient future", emphasising more distributed systems for production and consumption that are a radical reversing of past trajectories (Ryan, 2009). Further, like SEP, VEIL aims to identify new emerging changes via social media which currently "may be 'invisible' because they sit 'outside' the mainstream or are small and 'localised'" (Victorian Eco-Innovation Laboratory, 2010).

Another notable project is the *Great Transition Initiative* (GTI). GTI operates as an international network of scholars and environmental activists "that analyzes alternative scenarios and charts a path to a hopeful future", with a core aim to counter resignation and pessimism. A set of global scenarios, with supporting modelling and regional analysis, is used along with initiatives examining aspects of this desired transition. It also aims to grow awareness of the "transition" so a citizens' movement can be mobilised. The project is notable for its normative focus on global futures and a "planetary civilisation" and for achieving influence via policy, education and network-building (Riedy, 2009).

A final noteworthy experiment is the "Zero Carbon Australia" project led by Beyond Zero Emissions (BZE). BZE seeks to demonstrate the feasibility of rapidly transitioning Australia to a zero emissions economy. The first scenario study aims to provide a technical roadmap for transitioning to a 100% renewable energy supply over the next ten years (Wright & Hearps, 2010). The project is noteworthy for its thought leadership, however, like most such exercises (Dreborg, 1996), BZE only superficially addresses social and economic feasibility.[9] For example, skills shortages make the plan unworkable in-practice (Diesendorf, 2010) and some argue such a rapid transition will also require a more authoritarian society. The later concern is raised about the climate limits discourse (Dryzek & Stevenson, 2010).

Novel futures-like practices are also emerging. Notably, "transition management" has emerged in Europe, with initiatives in energy, mobility, water management, buildings, and healthcare (Loorbach & Rotmans, 2010). It combines theorising of large-scale change processes (Loorbach, 2007 & 2010) and experiments with using new governance strategies to accelerate change. The approach embraces uncertainty and complexity and, in practice, brings actors together to develop long-term visions and images of feasible concepts. For example, the "roof transition" project produced the vision of "functional" roofs that contribute to local sustainability (e.g. green roofs to clean air, used for energy generation, and so on) in the Netherlands (Loorbach & Rotmans, 2010).

Fry (2009) has also conceptualised the practice of "design futuring". Design, broadly conceived, is reframed as a sustainability-focussed "redirective" practice. This is in the formative stage with new design practices and change strategies being theorised and experimented with. A recent example is the conceptual re-designing of an existing Australian town (for a competition requiring the design of a "sustainable city") as a self-sustaining resettlement for climate refugees, using a precautionary design approach to prepare for potential futures (Fry, 2009).

Redirective practice critiques and aims to go beyond current practices such as eco-design and turning products into services – including other novel experiments such as SEP, which are seen as insufficiently radical (pp.151-5). An intriguing idea noted by Fry (2009, p.155) is holding "scenario events" – in addition to standard design conferences – that "explore the methods and possibilities of how things can be other than they are on the basis of what they 'need' to be". The experiments and practices described above are compared below:

Table 4.
Comparative Summary of Identified Exemplar Experiments and New Practices

Experiment / practice	How to initiate or accelerate transitions?	Futures techniques used	Agency
Sustainable Technology Development Programme	▪ Work with networks of innovation actors the capacity to address key problems and initiate "trend-breaking change" ▪ Develop shared visions to inform innovation ▪ Use backcasting frames of reference)	▪ Backcasting ▪ Forecasting of key innovation requirements	▪ Science and innovation ▪ Identification of transformative synergies
Sustainable Everyday Project	▪ Publicise emerging futures to stimulate a social conversation on the futures ▪ Identify new 'weak signals' of futures embedded in the present	▪ Simple scenarios (videosketches of future "daily life") ▪ Environmental scanning	▪ Social innovation ▪ Democratic 'steering'
Victorian Eco-Innovation Laboratory	▪ Independent "vision-agents", "amplifying" emerging paradigm change ▪ Use agency of design to create "seductive, intriguing visions of future possibilities" ▪ Identify new 'weak signals' of futures embedded in the present ▪ Stimulate innovation through backcasting ▪ Attempt to influence key decision-makers	▪ Visioning exercises to co-produce (with stakeholders, innovators) visions of sustainable futures ▪ Backcasting ▪ Environmental scanning	▪ Creativity – design, ideas ▪ Empowerment of affected actors
Great Transition Initiative	▪ Rigorous assessment and creative imagining of a "great transition" ▪ Develop a new global vision to challenge, inspire, broaden political base for change	▪ Visioning ▪ Global scenario modelling	▪ Developing awareness and mobilisation
Zero Carbon Australia	▪ Develop possible prescriptive interventions for new/more 'sustainable systems' ▪ Stretch the thinking of key decision-makers	▪ Technical roadmapping ▪ Backcasting, with a focus on technical feasibility (NOTE: the guiding principles do consider socio-economic impacts)	▪ Technology ▪ Lobbying
Transition management	▪ Identify and assist emerging pioneers, relevant niche players and change-inclined major players ▪ Create scope for experimentation and niches for new innovations/systems ▪ Combine practice with theory-building	▪ Visioning ▪ Scenario creation and planning ▪ Backcasting	▪ Coordination and governance – i.e. smooth change processes
Redirective practice (design futuring)	▪ Develop willingness and courage to truly confront problems of unsustainability and go beyond 'sustaining the unsustainable' ▪ Grow critical design community that also contributes to a public debate on futures ▪ Responsible design and ethical action	▪ Scenario building, with a focus on the question: 'what potentialities beg interrogation?' ▪ Critical futures: deconstruction to 'undercut working from existing unexamined foundations of thought'	▪ New agents of change ▪ Personal courage

The energetic re-engagement with futures evident in these perspectives and practices is a stark contrast to the mostly here-and-now focus of sustainable development. The examples also illustrate the centrality of visioning and backcasting in this context (Dreborg, 1996) and contention regarding what should be desired futures. Different promoted visions align with different eco-discourses. For example, STP and BZE are well aligned with the bright green vision and SEP is more traditional. These examples also indicate the more widespread use of futures tools, new applications of environmental scanning focussed on particular signals of change (i.e. in-line with desired futures), and suggest new approaches to "positive dissent" (see Slaughter, 1999, pp.359-367; also see Parkin, 2010, for a related discussion of "positive deviance").

Additionally, we can observe the rapid growth in futuristic concepts at contributing to positive environmental futures and *futures-oriented* environmental organisations and initiatives.[10] Two of the more thought-provoking concepts are for "vertical farm towers" to provide large-scale agriculture in cities, and desert-based "super energy grids" (e.g. that German-led consortium Desertec claims combines "energy security and climate protection with fresh water generation") shown below in Figure 3. VEIL's proposal of food productive sensitive urban design, for food security, is an example of a less technology-oriented concept.

Figure 3. Vertical Farm and Clean Super-grid Concepts (Retrieved March 2, 2011, from http://www.desertec.org/en/concept/ and the official Vertical Farm Project website at http://www.verticalfarm.com/)

4.3 Discussion

Before moving on to the other stages of the Transformation Cycle, futures frameworks can be drawn on to consider what's emerging. Dator's (2002) framework of generic images of the future – Collapse, Disciplined Society, Continuation, and Transformation – provides a useful initial lens that is well-known in the futures field.

Despite the obvious danger of over-generalising from limited examples it appears that a new diversity is emerging across this framework. Past green images have tended to be split between *utopian eco-localism* (an example Disciplined Society image "organized around some set of overarching values or another – usually considered to be ancient, traditional, natural, ideologically-correct, or God-given") and *dystopias* (Collapse). Whilst these images remain – indeed, Dator (2005) recently positioned sustainability as the key contemporary Disciplined Society image and collapse images are rising in prominence – green visions are clearly evolving. The general acceptance of the capitalist economic order in bright green and promethean environmentalism partly proposes a re-orientation towards "green growth" (Continuation). However, the building desire for unprecedented technological and systemic changes also proposes radical alternatives (Transformation). In particular, emerging technologies are increasingly seen and promoted as playing key roles in "extending limits".

Similar distinctions are made by the *Great Transition Initiative* (Raskin, 2006a & 2006b). GTI alternatively distinguishes between "Eco-Communalism" scenario, a Disciplined Society future, and a "New Sustainability Paradigm" future and similar archetypal possibilities.

In part, these reconceptualisations can be seen as emerging responses to the challenge of furthering environmentalism during industrial modernity. Indeed, emerging related research appears to necessitate a focus on *preserving* current ways of life to address psychological barriers to change (Feygina, Jost, & Goldsmith, 2010). Many additional responses not explored here also seek to address the noted problem of reconnecting the environment to everyday lives. An example is the "Slow Food" movement. Its core concept of "eco-gastronomy" aims to develop recognition of the connections "between plate and planet".

A second, crucial point can be made regarding Olson's (1994) claim that the image of a "sustainable society" is the one capable of rekindling the social imagination and counter claims that environmentalism tends to drive down aspirations (e.g. Williams, 2008). Environmentalism is leading to a growth in "futurism", defined by Dator (2002) as "concerned about the achievement (or avoidance) of one particular kind of future" – in this case, futurism focussed on achieving a sustainable future.

5. Emerging Issues and Futures

These perspectives and practices can be further considered in terms of the final two stages of the Transformation Cycle. They can be interpreted with a view to identifying emerging issues (Inayatullah, 1990; Molitor, 1977).

The challenging of traditional green images by new visions and concepts, such as vision of a high-tech global sustainable society and concept of "sustainable prosperity" (Steffen, 2006; Ellyard, 2009), appears to be prompting new 'conflict and negotiation' processes with some green thinkers challenging these images (Fry, 2009; McKibben, 2010; Sim, 2010; Trainer, 2010a). Further, counter-processes can often be generated and "conflicts may rise and fall" during intense change processes (Slaughter, 2004).

5.1. Emerging issues in 'conflict and negotiation' and 'legitimation'

Three emerging issues stand out. The first is the potential for increasing conflict over preferred futures. Past environmentalism provided simpler prescriptions that were much more widely agreed within the movement. A trend away from this is, on the one hand, positive as the pursuit of sustainable futures "involves high levels of uncertainty, which requires a strong degree of exploration and recognition of the limits of prediction and prescription" (Mulvihill & Kramkowski, 2010). I would further argue we do not yet fully know what a sustainable society looks like. On the other hand this shift also creates the potential for conflict. As O'Brien (2009a) asserts, the complexity being confronted "will frustrate those with a clear vision of what the world should or must look like". Many of the environmentalists I have met hold such visions. Similarly Dryzek (2005) observes that the "imagery of certainty" of Survivalists "leaves little space for search and experimentation", a characteristic especially evident in the climate debate.

The second emerging issue is the more intense interactions between adherents to different eco-discourses. This is an important shift. Over the past few decades intense interactions have predominantly been between the limits discourse and prometheans responses (Dryzek, 2005).

A central challenge to achieving the increasing exploration being advocated will likely be fostering productive engagement between those adhering to different discourses. New tensions are already starting to appear that raise the possibility of counter-processes. For example, these tensions led Brand (2009) to argue the movement will soon split into "traditional greens" and those who are "science and technology loving". Already the movement is splitting into groups supporting emerging high-tech innovation and dramatic scientific interventions (O'Brien, 2009b) and others fiercely oppose and question such potential pathways (Illuminato & Miller, 2010; Hamilton, 2010a). Further, unsustainable approaches to innovation, evident in the recent genetically modified foods controversy, presents new problems for approaches to environmental futures "that take technological innovation for granted" (Yearley, 2005).

This issue is partly driven by conflicting views on how to catalyse change. As the change imperative grows we should expect increasing debate about how to deliver it. Emerging voices strongly disagree with efforts to focus on 'changing people' (i.e. the *green radicalism* approach). There is also deep disagreement regarding whether such change can be achieved within the existing economic order.

Finally, old and new are colliding with respect to the new narratives and framings. For some members of the environmental community, the emerging context means we must relinquish a wholly positive view of how the future will unfold (Dennis & Urry, 2009; Hamilton, 2010b; McKibben, 2010). For example, prominent Australian public intellectual Clive Hamilton's (2010b) argues, in *Requiem for a Species*, that "the reluctant conclusion of the most eminent climate scientists is that the world is on a path to a very unpleased future and it is too late to stop it" and that "our task will be to avoid dystopia". What is needed, according to this view, is to prepare for the future we face whilst also avoiding passivity, fatalism and nihilism. More broadly, Porritt (2006) raises the dilemma of selling the vision of "9 billion people learning to live sustainably within the Earth's biophysical limits" when it is, in his view, overwhelmed by the

dominant vision of "ever greater wealth forever for everyone". That is an important statement from the recent Chair (2000-2009) of the UK Sustainable Development Commission.

If positive, alternative visions are needed to build greater social commitment to change then this issue must be addressed. Porritt (2006) goes so far as to argue "we are inevitably stuck with business-as-usual" if this challenge cannot be overcome. The collision of old and new also threatens to fall back into the old Survivalism versus Prometheans debates, which were most prominent in the 1970s and early 1980s. Falling back into old debates would likely lead to intense conflict between limits and techno-futures perspectives. New paradigms and discourses are required. Further, the tensions often evident between futures viewed as sustainable and those that are viewed as *desirable* must be addressed.[11]

5.2 Environmentalism in transition?

The reconceptualisations explored here, along with additional innovations such as in community scale action (Mulugetta, Jackson, & van der Horst, 2010), could be evidence of the emerging third wave advocated by Beder (1994) transcending protest and consensus approaches. This may be too optimistic. A more accurate assessment could be that a third-wave *may emerge* from the sharper contestation we are starting to see between more prominent and diverse eco-discourses – which emerged in the second-wave – as they evolve, adherents seek to engage the mainstream, and efforts made to address "wicked" problems. It is certainly unclear what changes will be legitimised by this clash between old and new. A fully expressed third-wave of modern environmentalism may only fully emerge from a crisis, should radically diverging perspectives lead to a significant crisis in the environmental community. A related emerging theme in the literature is that environmentalism is facing a significant crossroads.

This process of change could ultimately be a *cyclical* one. Many movement participants are calling for forms of radical activism (Hamilton, 2009) that amount to a return to a resistance protest movement. An editor of the well-known sustainability website www.treehugger.com recently argued (McDermott, 2010) that:

> *We need to reconcile what I tend to call Green 1.0, the simple green steps mentality that prevailed when TreeHugger was founded and started to bring more people on board, with the Green 2.0 brand of political activism that prevailed over the past two years or so and which began once it became obvious that changing light bulbs, recycling and buying organic jeans wasn't sufficient to create enough change to solve the (still) looming problems of climate change, natural resource depletion of many types, and astonishing biodiversity loss.*

Alternatively the process could be *integrative* one that 'transcends and includes'. Some concepts and perspectives noted here indicate potential integration of understandings and concepts from different discourses into *new* understandings, concepts and related discourses. This seems to me to be the preferred future. As Reidy (2005, pp.315-351) has thoroughly analysed, no current core discourse identified by Dryzek can be said to be "more developed" than the others and "each has apparent contributions to make" to policy and progressive change. The apparent shift back to *old*

Survivalism versus Prometheans debates suggested by the emerging perspective and practices reviewed here makes this future appear unlikely. What is clear, at this stage, is that these discourses and associated practices are rapidly evolving in response to what was termed "breakdowns in meaning" in the Transformation Cycle. These evolving breakdowns, reconceptualisations and, increasingly, "conflict and negotiation" and "legitimation" processes will ultimately shape fuller expression of contemporary environmentalism.

6. Concluding Remarks

An important theme in this article is the emerging trend towards more possibility-oriented ecodiscourses and practices. The "positive dissent" emerging in the environmental community demonstrates important new experiments with futures methods and concepts. These trends suggest an opportunity for the futures field to consider how it can contribute to these developments and related debates. In this regard, Yearley's (2005, pp.176-184) differentiation between "thin" and "thick" consideration of potential future sustainable societies is instructive. As noted earlier in the paper Yearley contends that such futures thinking has been too restricted. He argues "thicker" consideration requires exploration of questions about how such a society could be *enacted* and *reproduced overtime*. In Dryzek's (2005) terms, this would help to avoid "ungrounded wishful thinking". Yearley, further, calls for associated improvements in anticipation, such as examining the possibility of living in "sustainable" ways and how future sustainable societies would function. What roles could futures researchers and practitioners play in this? If the futures field wishes to see a "next wave" of environmentalism emerge, then helping the environmental field meet these challenges could be a good place to start.

Additionally, the emerging practices demonstrate potential emerging models for change-oriented futures research and practice. These could be further analysed, developed and rolled-out. Advanced futures approaches and the sorts of interpretative frameworks outlined here could also be helpful. The additional clarity provided by these frameworks would have assisted my earlier work in this area – especially in terms of reflexively understanding my views, the perspectives I encountered, and where perceived and potential solutions sit in the spectrum of possibilities – and they will be useful into the future.

Finally, both the futures and environmental fields wish to see a more effective *politics of transformation* emerge and have a mutual interest in understanding opportunities for and barriers to such changes. As part of this process, futures practitioners must understand eco-discourses, a task this paper also aimed to help address.

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Notes

1. The reference to a "common future" is adapted from the title of the first major international work on sustainable developed entitled "Our Common Future" (World Commission on Environment and Development, 1987).
2. See Dryzek (2005) for a detailed discussion of each environmental discourse according to: basic entities whose existence is recognised or constructed, assumptions about natural relationships, agents and their motives, and key metaphors and other rhetorical devices. See also Reidy (2005, chapter 7) for a detailed integral analysis of these discourses. Dryzek and Stevenson (2010) similarly categorise climate change discourses, focussing on the political and economic orientation of each discourse. See also Yearley's (2005) research into cultures of environmentalism which highlights the role of social institutions, cultures, and beliefs.
3. See United States Environmental Protection Authority (EPA) data available at: http://www.epa.gov/climatechange/emissions/globalghg.html
4. This sort of shift in perspective is evident in the changing subtitle of *Plan B* (L. R. Brown, 2008), a popular reference text in the movement. The subtitle was changed from 'Rescuing a planet under stress and a civilization in trouble' to 'Mobilising to save civilisation'. Brown asserts that the new subtitle reflects "the scale of the challenge we face and the wartime speed of the response it calls for" (2008, p.xi).
5. The capital "N" in Nature in this quotation refers to a belief in an objective, pristine nature. Some criticism of environmentalism, similarly, discusses what is termed the "wilderness myth".
6. An example project of the later is Dark Mountain Project, started in 2009, that aims to build a "cultural movement for an age of disruption" and question what it terms the "myth of civilisation" (www.dark-mountain.net/). These initiatives have strong historical roots in philosophies like deep ecology.
7. Lewis (1992) first used the term promethean environmentalism, in his case distinguishing it from the "arcadian environmentalism" (or "eco-radicalism") which argues we "must dismantle our technological and economic system". Promethean environmentalism, as described by Lewis, seeks to "disengage humanity from nature by cleaving to, but carefully guiding, the path of technological progress" and "actively manage the planet to ensure the survival of as much biological diversity as possible" (p.251; see also pp.253-256). Views on science and technology are a key differentiation. The term "promethean" refers to a god in ancient Greek mythology: Prometheus is best known for stealing fire from Zeus for the mortals and, consequently, increasing the human capacity to manipulate the world. In both concepts of environmentalism (i.e. Brook's and Lewis's) "promethean" refers to a different attitude towards the use and further advance of science and technology. Tim Flannery's (2010) vision, as expressed in *Here on Earth*, is a clear expression of promethean environmentalism.

8. Thanks to Chris Reidy for prompting these questions and comment about "eco-pragmatism". I offer these contrasting interpretations to readers to stimulate additional discussion.
9. Critiques of the technical analysis in the Beyond Zero Emissions report are also starting to emerge, e.g. at http://bravenewclimate.com/renewable-limits/
10. Only a limited number could be highlighted due to space restrictions. I also recommended considering the work of the Forum for the Future (in the UK), The Climate Group (an international NGO and think tank that support forward-looking studies such as SMART 2020), peak oil focussed organisations (e.g. the Association for the Study of Peak Oil and Gas, Post Carbon Institute, etc) and innovative local initiatives such the Future Cities Project which was run by the Melbourne-based Sustainable Living Foundation (information can still be found online). Additional innovative projects such as 'The Edge Futures' short book series are also clear expressions of this trend (for these books see http://www.blackdogonline.com/all-books/edge-futures.html).
11. In making this point I am drawing on my recent experiences in running visioning exercises with younger members of the Australian environment movement (see also Evans & Abrahamse, 2009, for a discussion of key intentions and contradictions experienced by people aiming to "live sustainably" in the UK). A key area that emerged during these exercise was mobility and transportation. Younger generations have grown up in a world of unprecedented mobility and transportation, only to find out that these may need to be compromised as part of addressing sustainability and climate problems. One participant also remarked during a visioning exercise that seems to be a need to "inject life" into sustainability visions – i.e. the strict moral discipline seemed restrictive and lacking an enjoyable life.

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