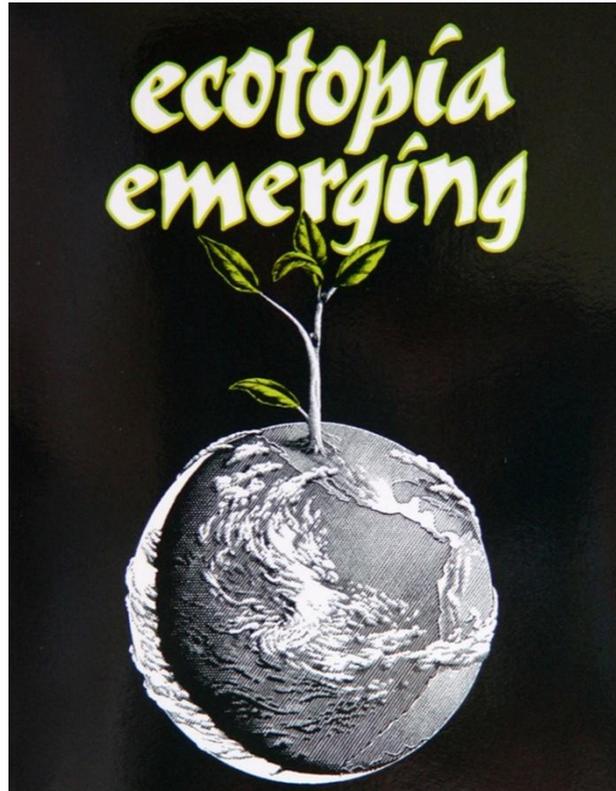


Transition Towns: Ecotopia Emerging?

The role of Civil Society in escaping Carbon Lock-In



© Callenbach 1981

Because growth economics backfired,
Relocalisation's required,
Heal the trees and the soil,
Yearn for life beyond oil,
And get yourself thoroughly Gaia'd.

Ben Brangwyn
Transition Network Co-founder¹
6th November 2006

Transition Towns: Ecotopia Emerging?

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By

Richard Seán O'Rourke

B.Sc. (Hons) Industrial Chemistry, University of Limerick (1996)
M.Sc.Eng (Hons) Sustainable Energy, University College Cork (2007)



THE LONDON SCHOOL
OF ECONOMICS AND
POLITICAL SCIENCE ■

Foreword

A few years ago, one of the great figures of contemporary biology, Ernst Mayr, published some reflections on the likelihood of success in the search for extraterrestrial intelligence. He considered the prospects very low. His reasoning had to do with the adaptive value of what we call "higher intelligence," meaning the particular human form of intellectual organization. Mayr estimated the number of species since the origin of life at about fifty billion, only one of which "achieved the kind of intelligence needed to establish a civilization." It did so very recently, perhaps 100,000 years ago. It is generally assumed that only one small breeding group survived, of which we are all descendants.

Mayr speculated that the human form of intellectual organization may not be favored by selection. The history of life on Earth, he wrote, refutes the claim that "it is better to be smart than to be stupid," at least judging by biological success: beetles and bacteria, for example, are vastly more successful than human beings in terms of survival. He also made the rather somber observation that "the average life expectancy of a species is about 100,000 years."

We are entering a period of human history that may provide an answer to the question of whether it is better to be smart than stupid. The most hopeful prospect is that the question will *not* be answered: if it receives a definite answer, that answer can only be that humans were a kind of "biological error," using their allotted 100,000 years to destroy themselves and, in the process, much else.

The species has surely developed the capacity to do just that, and a hypothetical extraterrestrial observer might well conclude that humans have demonstrated that capacity throughout their history, dramatically in the past few hundred years, with an assault on the environment that sustains life, on the diversity of more complex organisms, and with cold and calculated savagery, on each other as well.

From *Hegemony or Survival* (2004, p. 1-2) Noam Chomsky ©

Preface & Acknowledgements

Lady S. *Not at all; but, you know, there's none so blind as they that won't see.*

Jonathan Swift (1667-1745, Dublin) *A Tale of a Tub and Other Satires* (1704)

Progress, far from consisting in change, depends on retentiveness. When change is absolute there remains no being to improve and no direction is set for possible improvement: and when experience is not retained, as among savages, infancy is perpetual. Those who cannot remember the past are condemned to repeat it.

George Santayana (1863 – 1952, Madrid) *Life of Reason, Reason in Common Sense* (1905)

My 'Peak Oil Moment', as we Peakers/Peakists/Peakniks like to call it, occurred while visiting an old friend in San Francisco in November 2004. I'd just handed over the reigns at a software company I'd started and been running for the previous five years and for the first time since found myself with time on my hands. My friend handed me a book called *'The Party's Over: Oil, War, and the Fate of Industrial Societies'* by Richard Heinberg (2003). Skimming the outside back cover I handed it back dismissively, telling him what I'd been told six years previously while doing fuel cell research in Switzerland: 'there's another forty years of oil, another eighty of gas, and a few hundred of coal' (Global Warming was another issue of which I was blissfully ignorant). I didn't mention that one of the reasons I got out of fuel cell research and into the software business was because I was also told that as long as oil remained at \$16 a barrel there would never be a serious investment in renewable technology. I made the common mistake of assuming that oil would continue to come out of the ground to meet demand until the fortieth year, upon which it would stop.

Thankfully, he convinced me to read the book, which I did more or less immediately - this was my 'Peak Oil Moment'. As soon as I finished it, I turned back to the front page and read it again because, I'd obviously missed a fundamental flaw somewhere in the logic that would allow me to dismiss the central point being made. Not finding it, I turned once again to the front of the book and read the preface by a retired oil geologist, Dr. Colin Campbell, who signed himself as being in Ballydehob, Ireland. A small town in the furthest south western corner of the country, it was the last place I would have expected to find him.

I made arrangements to meet Dr. Campbell on my return to Ireland later in December, returning home for Christmas. Unfortunately, I found him to be an utterly credible person and Pandora's Box was now forever open.

Modern society is as fraught with conflicts of secular dogma as was medieval society with religious dogma. To acquire a new world view, a change of paradigm, is comparable to a religious experience.

(Cotgrove, 1982, p. 119)

Dr. Campbell kindly afforded me the opportunity to work with him increasingly from that initial meeting. I subsequently became a director of ASPO Ireland, one of over 25 national chapters of an organisation Dr. Campbell initiated with Dr. Jean Laherrere in 2001, the Association for the Study of Peak Oil & Gas. In 2006, at the 5th International ASPO conference² in Pisa, Italy, ASPO Ireland proposed that it should host the 6th conference in Cork. Shortly thereafter I started a masters in sustainable energy at University College Cork.

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Through Dr. Campbell, the ASPO network, and organising ASPO6 in particular, I've had the opportunity to meet and speak with a vast array of the world's leading experts in energy related issues. But it has not been sufficient to recognise the problem for, in the words of Al Gore, if you recognise it, you are morally obliged to do something about it. I naively thought that ASPO6 might be such a something. Despite the success of the event I was ultimately dissatisfied. I felt we were preaching to the converted and had made little or no progress at engaging mainstream society, even with the oil price rocketing on its trajectory to US\$100³.

Probably for that reason, of the many memorable things from the ASPO6 conference, three stand out. The first is a statement by the opening speaker, former US Secretary of Defence during the first oil crisis and US Secretary of Energy during the second, Dr. James Schlesinger, and it's not the obvious one: "*we're all peakists now,*" for he was clearly premature and I believe he said it because he knew we wanted to hear it. It was, "*the conclusions from political reality is that in order to have real movement the public has to be hit over the head with a two-by-four.*" The second is from the closing speech given by newly appointed Minister for Energy, Communications, and Natural Resources, Eamon Ryan TD. He said "*we need a myth to be created, a modern myth that people can identify with which actually explains this future that we're heading into*". The relevance of both statements will hopefully become clear in the thesis set out below. However, despite the calibre and lofty titles and careers of many of the speakers, the one for me who stole the show was Rob Hopkins. His was a story of optimism, a beacon of light in a dark and foreboding sea.

ASPO6 concluded, the following week I submitted my thesis to UCC and departed for London to start a second masters, of which this thesis is a product. Having studied the solutions technology and the natural sciences can offer and remaining unconvinced (Trainer 2007, MacKay 2008), I hoped to understand what solutions, if any, politics and the social sciences might offer.

It's been an interesting if infuriating exercise attempting to raise the subject of *Peak Oil* at the LSE; in short, I can only conclude that I have summarily failed. Somewhat ironically, one of Dr. Campbell's biggest critics and the quintessential Cornucopian (and Climate Change sceptic), Professor Peter Odell (2004), was a lecturer at the LSE in the Sixties and a visiting professor at the Geography department in the mid-Eighties. On the surface of it he appears to have left a strong legacy.

Commensurate with its reputation, the LSE manages to attract quite an impressive array of guest speakers. Through the 2007/2008 Ralph Miliband Programme⁴ 'Oil, Energy Security and Global Order' Series I had the opportunity to hear lectures from and ask questions of BP's former Chief Executive, Lord John Brown⁵, Professor Michael Klare⁶, and Lord Professor Nicholas Stern⁷, currently a professor at the LSE where he chairs the Grantham Research Institute on Climate Change and the Environment. I was impressed with the brass neck of Brown to tell me not to worry about *Peak Oil* despite my not asking him about it. Klare is a regular speaker at ASPO events. Lord Stern, to my despair, was of the opinion that oil will remain in a \$50 to \$100/barrel range, in any case, we have the Canadian Tar Sands! In parallel to this series and with the help of the OIKOS Society at the LSE, I took advantage of relationships established at ASPO6 to invite Jeremy Leggett, Lord Ron Oxburgh, and Rob Hopkins to the LSE to speak in an effort to spark a discussion about the issue.

In a private conversation with a renowned politics professor at the LSE I had a brief but sadly very typical exchange. It started with 'so you believe in this Peak Oil stuff do you?'; 'I believe the high oil price is due to speculators'; and 'I agree with Nick Stern that *Peak Oil* is a distraction from the real issue of Climate Change', to which I refer the

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reader to a similar observation made by David Strahan in his book *The Last Oil Shock* (2008) in which he describes the sad 'confusion about the rudiments of oil depletion' (p. 84). Attempting to side-step the stale-mate over our respective beliefs (although I will suggest mine are the better informed) I asked, referring to Stern's latest proposal⁸ prepared in the run-up to the next round of Kyoto in Copenhagen next year, that if European governments had implemented a carbon tax that produced the kind of energy prices we are seeing today, which in turn were engendering the kinds of responses we've seen from farmers, fishermen, and truck drivers, how likely is it that the government would stand over them? And a critical assumption of Stern's proposal is that the revenues generated from a carbon tax would be reinvested into creating a clean energy society. The higher energy prices go, the lower the scope for implementing such a tax. My closing argument was to ask, rather than fall, what could we expect to happen should the oil price continue to rise, as it has done for the past five years? The answer came quickly: there would be social unrest and civic disorder, but that would be a good thing for Climate Change. My response was, are you sure?

The decision to study the Transition Town movement was part of a conscious decision to avoid such debates and trying to construct 'fact' based arguments to proselytise. This thesis is not intended to be an exercise in rhetoric to convince the reader that *Peak Oil* is a problem with which they should be concerned. I decided it might be more fruitful to simply study a group of people who believe *Peak Oil* is a problem and are taking what steps they believe appropriate to prepare for its, in their view and mine, imminent arrival.

My *Peak Oil* journey over the past four years has in many respects lead me to this thesis and, thankfully, new realisation and a new direction. So in that sense the journey has served its purpose and I found that for which I set out: hope in the face of a truly daunting challenge.

I've also learned from this exercise that many of the solutions to the problems we now face were left behind 30 years ago and there is little of value I can contribute other than to remind us. The value of the Transition movement is in its call to pick up those solutions and to finally put them to use.

The better part of a week I spent in Totnes at the end of July, mostly in the company of Jacqi Hodgson attending her presentations of the Energy Descent Pathways project to the different Transition Town Totnes subgroups and watching the scenario planning process unfold, my interviews with the Transition Network Founders, Rob Hopkins and Ben Brangwyn, getting my hands on a Totnes pound, simply walking around the town in the sunshine and rain, I came away with a feeling that felt new because I hadn't felt it since my *Peak Oil Moment*: hope. But not desperate or idle hope, possibly naive, but the hope of someone who can see a pragmatic and constructive way forward that just might get us, if not closer to the utopia we desire, certainly further from the dystopia we wish to avoid.

There are many people that have helped and guided me along my road to Damascus. I wish to thank them all, for they have informed my conclusions about the state of the world and my views on its possible future. I will only mention one by name as he has been with me from the very beginning, Dr. Colin Campbell, and whose untiring pursuit of his passion will continue to inspire me for the rest of my life. Turning 76 shortly before ASPO6, I look forward to seeing how the world unfolds between now and when I will hopefully be the same age in 2050.

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For their contribution to this thesis, I must thank:

Dr. Michael Mason, my thesis supervisor. His direction to the WWF UK *Weathercocks & Signposts* report and the work of Professors Stephen Cotgrove and David Pepper was instrumental in the preparation of this thesis.

For agreeing to be interviewed: Ernest Callenbach; Prof. Stephen Cotgrove, and his notes on values; Prof. David Pepper, and a copy of his book *Communes and the Green Vision*.

At the Transition Network: Rob Hopkins, co-founder and author of the *Transition Handbook* and Ben Brangwyn, co-founder. I'm particularly grateful for his work collecting the 50 application documents used in this thesis.

At Transition Town Totnes (TTT): Jacqi Hodgson, EDAP Project Manager, for inviting me to participate in her Scenario Planning presentations and supplying the output from those meetings. Steph Bradley and Hannah Mulder for sharing their experiences running the 'Transition Tales' project.

I wish to thank my sister, Catherine, and cousin, Kitty, for reading very early drafts of this thesis, and Rob Hopkins, Dr. Colin Campbell, Jeremy Gilbert, and Dr. Colin Sage at UCC for feedback on the final draft.

Richard O'Rourke
rsorourke@gmail.com

London, September 2008

Dedication

To Mothers:

Mum, Nana, a dear friend's who passed away suddenly, Eve, Earth.

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1. Introduction

"But in their public campaigns, not one of America's environmental leaders is articulating a vision of the future commensurate with the magnitude of the crisis. Instead they are promoting technical policy fixes like pollution controls and higher vehicle mileage standards — proposals that provide neither the popular inspiration nor the political alliances the community needs to deal with the problem."

The Death of Environmentalism (2004)

Civil Society & 'Carbon Lock-in'

The role of civil society in addressing social and environmental problems has been the subject of much research since their organisation into the new social movements of the sixties (Goodwin & Jasper, 2005; Newell, 2005; Lowe & Goyder, 1983; Rawcliffe, 1998).



"We will make electricity so cheap that only the rich will burn candles."
Thomas Alva Edison (1847–1931), on his left Henry Ford (1863–1947), on his right Harvey Samuel Firestone (1868–1938)

'Carbon lock-in arises through technological, organizational, social and institutional coevolution, "culminating" in what was termed as *techno-institutional complex* (TIC). In order to resolve the climate problem, an escape from the lock-in condition is required. However, due to the self-referential nature of TIC, escape conditions are unlikely to be generated internally and it is argued here that exogenous forces are probably required.' (Unruh, 2002)

As we are seeing in China and India, the globalisation of carbon lock-in rather than leapfrogging to a new carbon-free energy society appears to be the route being taken by the industrialising world, 'further constraining climate change mitigation options.' (Unruh & Carrillo-Hermosilla, 2006)

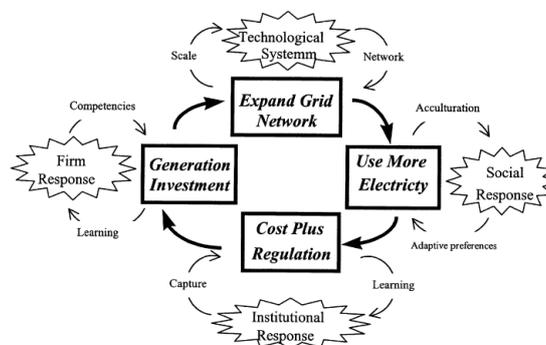


Figure 1.1: A simple illustration of the techno-institutional complex (Unruh G. C., 2000)

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Transition Towns

This thesis is a study of a relatively new and emerging social movement originating in the UK but already establishing outposts around the globe, the Transition Town movement. Having only been formed in late 2006, it has already caught the public imagination in unexpected ways. The perennially popular BBC Radio 4 soap opera *The Archers*, with a daily listenership in the millions, now features a storyline on Transition Ambridge, the fictional English village wherein the drama is set. And the Transition Town originator, Rob Hopkins' just published *Transition Handbook* (2008) has within months made it onto the Waterstone's Top Ten MP Reads this summer⁹. Certainly of more political significance is the recently passed resolution by Somerset County Council pledging support for any Transition Town initiatives that emerge in the county and its seeking "to become the first Transition Authority in the UK."¹⁰

Transition Initiatives are based on four key assumptions:

- 1) That life with dramatically lower energy consumption is inevitable, and that it's better to plan for it than to be taken by surprise
- 2) That our settlements and communities presently lack the resilience to enable them to weather the severe energy shocks that will accompany 'Peak Oil'.
- 3) That we have to act collectively, and we have to act now.
- 4) That by unleashing the collective genius of those around us to creatively and proactively design our energy descent, we can build ways of living that are more connected, more enriching and that recognise the biological limits of our planet.
(Hopkins, 2008, p. 134)

Peak Oil (à la Hirsch Report ¹¹)	When seen as two aspects of the same problem:	Climate Change (à la Stern Report ¹²)
<ul style="list-style-type: none"> • Coal to liquids • Gas to liquids • Relaxed drilling regulations • Massively scaled biofuels • Tar sands and non-conventional oils • Resource nationalism and stockpiling 	<p style="text-align: center;">Building Resilience</p> <p style="text-align: center;">Plus</p> <p style="text-align: center;">Cutting carbon emissions</p> <p style="text-align: center;">Planned relocalisation (building local resilience)</p> <ul style="list-style-type: none"> • Tradable Energy Quotas • Decentralised energy infrastructure • The Great Re-skilling • Localised food production (food feet) • Energy descent planning • Local currencies • Local medicinal capacity 	<ul style="list-style-type: none"> • Climate engineering • Carbon capture and storage • Tree-based carbon offsets • International emissions trading • Climate adaptation • Improved transportation logistics • Nuclear power

Figure 1.2: What happens when you look at Peak Oil and Climate Change as two intertwined problems. (Hopkins, 2008, p. 38)

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Six principles that underpin the Transition model

1. Visioning
2. Inclusion
3. Awareness-raising
4. Resilience
5. Psychological insights
6. Credible and appropriate solutions

“One of the reasons behind what we might call the ‘light-bulb syndrome’ is that people are often only able to conceive two scales of response; individuals doing things in their own homes, or the government acting on a national scale. The Transition model explores the ground between these two: what could be achieved at a community level.” (Hopkins, 2008, p. 142)

So what is it about the Transition Town movement that seems to have caught the public’s imagination? Particularly in light of the current UK Government’s beleaguered EcoTowns initiative which seems plagued with difficulties¹³.

The answer may lie in two recent and controversial introspections into the nature and success, or lack of, of the environmental movement in dealing effectively with Climate Change. The WWF UK published earlier this year a report entitled *Weathercocks and Signposts: The environment movement at a crossroads* (WWF UK, 2008). Starting from the premise that, ‘it is now beyond serious doubt that a proportional response to climate change will entail fundamental shifts in both policy and lifestyles in the very short term,’ it recognises ‘that environmental challenges will not be met while maintaining a narrow focus on the happy coincidence of economic self-interest and environmental prudence’. By constructing an argument for a ‘radically different approach,’ they make the case that in order to ameliorate our consumptive tendencies, because even if they’re ‘green,’ it won’t be enough, they are challenging our consumer lifestyles at the root, our values, and seek to shift mainstream society away from consumerism.

The second report, *Death of Environmentalism*, (Shellenberger & Nordhaus, 2004) and the subsequent book, *Breakthrough: From the Death of Environmentalism to the Politics of Possibility* (Nordhaus & Shellenberger, 2007), criticises the environmental movement for its preoccupation with ‘eco-tragic narratives’, ‘eco-apocalypse’, ‘limits to growth’, and an inability to paint a compelling vision of the future based on a set of values consistent with human aspirations. “Above all else, we need to take a hard look at the institutions the movement has built over the last 30 years. Are existing environmental institutions up to the task of imagining the post-global warming world? Or do we now need a set of new institutions founded around a more expansive vision and set of values?” (ibid p. 34)

Using these two critiques of environmentalism as lenses through which to investigate this emerging movement, this thesis will attempt to investigate and draw its conclusions from how the movement articulates its vision of the future and the values of the people drawn to this vision. Specifically it is desired to understand how the Transition Vision compares with previous articulations of a vision of an ecological society and if and how the values of the people drawn to the movement are different from the members of traditional environmental organisations and mainstream society.

As the phenomenon of *Peak Oil* is central to the movement, on an equal footing with Climate Change, the Transition Movement is different from other environmental organisations and government campaigns attempting to modify public attitudes and

behaviour and therefore the secondary question as to whether this approach is proving more effective will be studied.

Finally, the concept of *Transgressive Potential* (Sargisson, 2000) will be explored and the question asked 'How significant is the transgressive potential of the Transition movement vision?' Pepper (interview with author, 8/2008) suggests that the most important question to be answered is how to find truly transgressive potential.

2. Literature Review

Ecotopia & Visions of an ecologically benign society

'We are only just beginning to scratch the surface of the power of a positive vision of an abundant future: one which is energy-lean, time-rich, less stressful, healthier and happier. Being able to associate images and a clear vision of how a powered-down future might be is essential' (Hopkins, 2008, p. 94)

The value of utopian (in the sense of *eu-topos* or good place as opposed to *u-topos* or no place (Best, 2000)) thinking and writing is seen to be in its ability to create 'space' for things to happen (Sargisson, 2000). In these spaces, the constraints of the current paradigm (Kuhn, 1996) can be ignored and new futures imagined. While there is doubt in some quarters as to the value or legitimacy of utopian thinking (Fukuyama, 2006; Nordhaus & Shellenberger, 2007), even Rob Hopkins expressed discomfort with the idea of his vision of 2030 being called a utopia (interview with author, 7/2008), there are those who argue in its favour.

de Geuss (1999 p.29) lists daydreaming about an ideal world, breaking with the past, holding up a mirror, experimenting with forms, and a source of ideals among the factors in the appeal of utopias.

Sargisson (2000, p.4) argues that Transgressive utopian thought works thus:

- It breaks rules and confronts boundaries.
- It challenges paradigms.
- It creates new conceptual and political space.

The term 'Ecotopia', a contraction of Ecological Utopia appears to have been coined by anarchist writer Murrery Bookchin (Bookchin, 1980)¹⁴. However, it is the novel of that name (Callenbach, 1975) which has assured its popular hold on wider society having cumulatively sold over a million copies.

de Geuss (1999) distinguishes between utopias of abundance versus utopias of sufficiency and finds that utopias of sufficiency are those which are most consistent with an ecologically benign society. His 'safari' through the utopias of Thomas More, Henry Thoreau, Peter Kropotkin, and William Morris are demonstrative of the milieu. He also includes Howard, Skinner, and Huxley in his lead up to the two 'Modern Ecological Utopians' considered further below.

The Values of an Ecologically Benign Society

'the environmental groups formed in the late 1960s and early 1970s took on a new and distinctive direction..., their message was that environmental catastrophe could be avoided only by fundamental and radical changes in the values and institutions of industrial societies.' (Cotgrove, 1982, p. 2)

Cotgrove (1982) and Nordhaus & Shellenberger (2007, 2007), despite the 30 year gap in their work, both use Maslow's hierarchy of needs as the starting point for their studies into human values. Inglehart's (1997; Inglehart & Welzel, 2005; Inglehart et al, 2008) studies of the transition of societies from materialist to post-materialist values is explained as an inevitable process of modernisation and increased standard of living. Yet Cotgrove's earlier study points out that the new green social movement is not simply the new affluent middle-class but a radical subset to be differentiated from their banking and engineering colleagues who are still committed to the market economy. "Membership of the radical environmental associations we studied is heavily skewed towards a specific cluster of occupations. A high proportion are employed in the personal service professions and creative arts – as teachers, social workers, lecturers, doctors. That is to say, they are employed in occupations outside the market sector, where goods and services are sold." (Cotgrove, 1982, p. 19) A finding repeated by Norris (1997) fifteen years later "As expected, green activism was far stronger among the well-educated affluent salaried than among the traditional working class."

Nordhaus & Shellenberger (2007) describe a new type of economic refugee in the US, the 'insecure affluent' who are worried about losing their standard of living. Their argument is very much in the same vein as Sen (Anand & Sen, 2000) and Sachs (Sachs, 2005), that only by developing people's standard of living beyond their basic material needs into the realm of post-materialism where self realisation becomes the priority and higher-order postmaterial needs for belonging, esteem, status, and self-creation, then will people start to properly care for the environment.

3. Methodology

It is endeavoured to determine two things:

- 1) Vision: Is the Transition Town movement's vision of the future consistent with previous articulations of an ecotopia?
- 2) Values: According to Cotgrove's research(1980), members of environmental movements generally fall into a particular profile of non-market oriented job types. Does the membership of the Transition Town movement also match this profile?

In order to answer these questions, a number of techniques were employed:

With regard to Vision:

- Comparative literature study
- Face-to-face interviews (Rob Hopkins, Ernest Callenbach, Prof. David Pepper, and Prof. Stephen Cotgrove)
- Analysis of the output of the EDAP Scenario Planning Exercise

With regard to Values (for which this study is using profession as a proxy):

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- Analysis of 50 Transition Project application documents, specifically the autobiographical notes included of approx 325 people

Comparing visions of a future ecological society

In order to comparatively assess Hopkins' vision of the future within the canon of ecological utopian literature, it was decided to focus on what de Gues (1999) categorises as the 'Modern Ecological Utopias' which includes the work of Callenbach and Bookchin.

Their respective works were studied, in the case of Callenbach, *Ecotopia* (1975) and *Ecotopia Emerging* (1981), in the case of Bookchin, *Post-scarcity anarchism* (1971) and *Toward an Ecological Society* (1980).

Both Rob Hopkins and Ernest Callenbach were interviewed, both interviews lasting just over an hour. Hopkins was interviewed in person, in Totnes, while Callenbach was interviewed by telephone from his home in Berkeley, CA.

The semi-structured interviews were designed to illicit their motivations for writing and the writings and experiences that influenced them prior to writing. It was, in essence, an attempt to understand the creative process and by so doing attempt to observe if common patterns emerged between the two writers.

As their work had been this authors original introduction to the subject of utopian thought and values in environmentalism, Prof. Stephen Cotgrove (1976; 1980; 1981; 1982) and Prof. David Pepper (1991, 1993, 2005, 2007), emeritus Brooks University, Oxford, were interviewed to discuss the Transition Town movement and solicit their thoughts and observations following careers spanning the modern environmental movement since its emergence in the late sixties.

The Energy Descent Action Plan (EDAP) Scenario Exercise

"If you have built castles in the air, your work need not be lost; that is where they should be. Now put the foundations under them."

Henry David Thoreau, Walden, p. 214

The Transition Town Totnes (TTT) project is currently the most advanced Transition project of the seventy plus now underway (their first year is described in chapter 12 of the Handbook). The Handbook describes the '12 Steps of Transition', the process through which to get a Transition project up and running and to the point of preparing what is called an 'Energy Descent Action Plan', the twelfth and final step, although in reality, it is the real beginning of a transition. 'An EDAP sets out a vision of a powered-down, resilient, relocalised future, and then backcasts, in a series of practical steps, creating a map for getting from here to there.' (Hopkins, 2008, p. 172)

The very first EDAP was prepared in the town of Kinsale, Ireland, in 2005 while Hopkins was teaching a permaculture course at the local Further Education College. The plan was prepared by his class of students and is used within the Transition community as a template for the EDAP exercise. It is estimated that the document has been downloaded from the Transition website approaching ten thousand times.

Step five of the process is the forming of groups to focus on specific aspects of the Transition. TTT has set up a number of groups identified on their website as Building & Housing, Economics & Livelihoods, Education, Energy, Food, Health & Wellbeing, Heart

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& Soul, Local Government, The Arts, and Transport.

As part of the process of preparing the Totnes EDAP, the EDAP Project Manager, Jacqui Hodgson, met with each of the groups and presented on her work to date and took each group through a series of exercises, the main one being the Scenario Planning exercise. Scenario Planning is a process popularised by Royal Dutch Shell (2005) and used extensively by commercial and policy organisations to speculate about the future. However a number of groups have also prepared scenario planning exercises within the specific context of Peak Oil, namely Feasta¹⁵ in Ireland and the Dynamic Cities Project¹⁶ in Vancouver, Canada.

The Scenario Planning exercise is a two step process. The first step is to agree a set of assumptions about how it is believed the world will unfold and what factors will be determinant. For the Transition movement, the availability of oil is a critical one. The second step then is to construct a four-square map based on an x-y axis. The horizontal axis was specified as one of either willingness or resistance to change. The vertical axis was specified as one of either price of or availability of energy. From the extents of the two axes the four scenarios emerged:

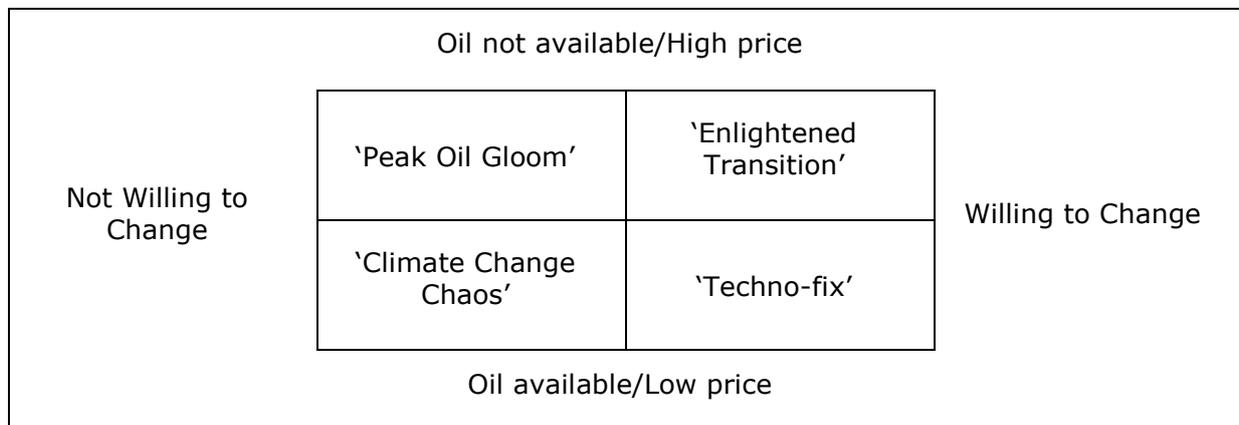


Figure 3.1 Future Scenarios

The axes and scenarios were drawn on a whiteboard and coloured post-it notes were given to the group members so that they could write down their views on what would be likely to happen in each of the scenarios. These were then collected and transcribed later. Details of the meetings are listed below.

TTT Energy Group Scenarios Workshop	10th & 22nd July 2008
TTT Education Group Scenarios Workshop	14 th July 2008
TTT Building & Housing Group Scenarios Workshop	17 th July 2008
TTT Health & Wellbeing Group Scenarios Workshop	21st July 2008
TTT Arts Group Scenarios Workshop	25th July 2008
TTT Heart & Soul Group Scenarios Workshop	29th July 2008
Transport & Traffic Forum Scenarios Workshop	30th July 2008

The author participated in the last two meetings, the Heart & Soul Group and the Transport & Traffic forum. The output from the second meeting was recorded by dictaphone.

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Figure 3.2 Scenario Outputs

What are the Values of the people drawn to the Transition Vision?

The work of Cotgrove (1980; 1981; 1982) and Searle-Chatterjee (1999) indicates that choice of profession indicates an expression of post-material values (Inglehart, 1997; Inglehart & Welzel, 2005). Thus in order to answer the question of the values of the people drawn to the Transition movement it was endeavoured to imply such from peoples' descriptions of themselves and their work.

The process of initiating a Transition project begins with an application to the Transition Network through their standard application form which can be downloaded off their website. This form asks for details of the proposed project, short biographical notes on the core team, including how long they've been a member of their communities, and a series of screening questions that are essentially to qualify the applicants and ensure they know what they're signing up for.

Fifty of these application documents were provided and the data collected into a single spreadsheet for analysis. The data included over 325 biographical notes, over 14 thousand words of text, the shortest two words, the longest over 400.

Limits of the Methodology

The least rigorous aspect of the methodology proposed is attempting to infer the values of people drawn to the Transition Town movement based on their autobiographies. Potential limitations arise on two levels:

- Assuming Cotgrove's conclusion is correct, and choice of profession can be taken as a proxy for expression of post-material values.
- Not all the biographies include a description of profession.
- The biographies studied are specifically for a subset (albeit over 75%) of the members of the core group from a subset of Transition projects. The application documents indicate a cumulative community ten times greater (see Appendix VI). As such, we are studying only, what is likely, the most dedicated members of the community.

4. Results

Comparing visions of a future ecological society

A Vision for 2030: Looking back over the Transition¹⁷

"In effect it is like throwing a whirlpool in front of you which then draws you towards it." (Hopkins, 2008, p. 98)

The interview with Hopkins lasted 87 minutes and when transcribed ran to over seven thousand words. The interview started with a discussion of sources and inspiration for Hopkins' vision, moving to the issue of values and the movement going mainstream, and concluded with a discussion about the EDAP. The discussion below draws from this interview and the Transition Handbook (2008) to attempt to understand how Hopkins arrived at his vision for 2030.

The sections under which Hopkins outlines his vision in the Transition Handbook (2008) include Food & Farming, Medicine & health (tele-medicine, organic medicine), Education (2008 woefully inadequate, conflict resolution and community leadership classes), Economy (LETS [Local Exchange Trading Systems/Schemes], Time Banks, local currencies), Transport, Energy, and Housing.

In the Handbook, Hopkins describes himself as a voracious 'vision-harvester' (Chapter 7) and describes interviews with Stephan Harding¹⁸, Brian Goodwin¹⁹, Fritjof Capra²⁰, Meg Wheatley²¹, Tony Juniper, former executive director of Friends of the Earth, and Dennis Meadows²² as sources of inspiration for his vision of 2030.

In interview however, Hopkins points me to the 'Trailblazers' in the Handbook's acknowledgements. The first people he mentions as sources of inspiration are architects: Christopher Alexander²³, Christopher Day²⁴, and Ianto Evans²⁵.

Being a permaculturist²⁶ by profession Hopkins cites Bill Mollison²⁷ and David Holmgren²⁸ as seminal influences. Hopkins considers Holmgren's permaculture book (2002) as the most important of the last fifteen years. Hopkins says his vision comes from being grounded for the last fifteen years in teaching permaculture, from what he's seen and done and knows to work and mentioned fellow permaculture practitioners in Ireland and the UK. In that regard he was not comfortable with the idea of his vision being called a utopia and doesn't consider it as particularly utopian²⁹. He said his motivation is not to create a utopia but to avoid the dystopia of *Peak Oil* and *Climate Change*.

Hopkins' Dystopia:

"It is worth remembering that it takes a lot of cheap energy to maintain the levels of social inequality we see today, the levels of obesity, the record levels of indebtedness, the high levels of car use and alienating urban landscapes. Only a culture awash with cheap oil could become deskilled on the monumental scale that we have," (Hopkins, 2008, p. 98)

Reflecting the influence of 'Peak Oil' he said that, about a fifth of the books on his bookshelf are a product from the oil crises of the Seventies. However, it is important to point out that while Peak Oil and Permaculture underpin Hopkins' vision, it is their respective shortcomings, in his view, which motivated his need to create the Transition Vision. He is critical of the 'Peakists' for their inability to paint a picture other than

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societal collapse or techno-fix through nuclear power and coal-to-liquids. He is critical of the Permaculture movement for largely choosing to disengage from society in order to pursue their lifestyles in self-chosen isolation from mainstream society.

Hopkins' proximity to Schumacher College in Dartington has also exposed him to other sources of his vision. Economist E. F. Schumacher³⁰ (1911 – 1977) himself, philosopher and anarchist social thinker Ivan Illich³¹ (1926 - 2002) and neo-Luddite and secessionist Kirkpatrick Sale³² (1937). Ireland-based economist and founder of Feasta³³, Richard Douthwaite³⁴, is also mentioned.

A Snapshot of the Transition Movement in 2011

In a separate document (Hopkins & Lipman, 2008) published July on Hopkins' blog (transitionculture.org), he, with fellow Transition Network Trustee and Chair Peter Lipman, articulates a 'Snapshot of the Transition Movement in 2011'. In it they describe how the movement has grown over the next three years to include other Transition processes: Transition Business, Transition Local Government, Transition Skills, Transition Universities, and National Transition hubs liaising with national governments. "By this stage, Transition Network's funding comes 50% from a diverse base of funding organisations, and 50% from a combination of selling services and expertise, publications, consultancy and subscriptions, with the emphasis over time moving towards increasing financial self-reliance."

The Role of Government

Where does government fit (p.76) into Hopkins' Vision of 2030?

National Government appears only three times in Hopkins' vision in regard to food security, education in what Hopkins calls the 'Great Reskilling', and stimulating the local economy through the use of local currencies.

"About twenty years ago, rising oil prices, international climate change agreements, and the findings of the Royal Commission on Food Security - Government reconsidered its commitment to the WTO's pro-globalisation, liberalised, unrestricted free-trade approach, leading to its re-prioritising national food security above international trade." (p. 109)

Local government is referred to twice with regard to local food procurement and finding new uses for their 'large expanses of underused tarmac'.

Value change

'People look back to the wastefulness of twenty years ago with astonishment and a certain amount of distaste.' (p.115)

'People now appreciate that one's degree of personal happiness does not directly correlate to the size of one's energy consumption.' (p.115)

'Years ago, one's sense of social worth was based on the size of one's house; now it is based on its compactness and efficient design.' (p.116)

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Callenbach's Ecotopia

The interview with Callenbach lasted 72 minutes and its transcription stretches to nearly 5,600 words.

Having been rejected by all the major publishing houses in New York, Callenbach decided to self publish and sold the first 500 copies through an independent bookstore in Berkeley, CA. Its subtitle is 'The Notebooks and Reports of William Weston' and is written in the first person, the journalist William Weston, comprising both his articles sent back to his employer, the Times-Post, and his personal observations. He is the first American journalist allowed to visit the new country of Ecotopia since its secession 20 years earlier from the United States, comprising the Western seaboard states of Washington, Oregon, and northern California.

Comparing and contrasting Hopkins' future with that of Callenbach's 1975 fictional novel 'Ecotopia', there are many parallels to be drawn and I suspect Hopkins would feel very much at home in Ecotopia. However, Callenbach's 167 page description of Ecotopia in the twentieth year since its secession is naturally much more vivid than Hopkins' 3,500 word description of 2030.

Unlike Hopkins' vision of the future where energy limits force civilisation down a path of enlightened relocalisation, in Callenbach's future it is enlightenment itself which is the driver of change. This is brought about through a new political party, The Survivalists, lead by Vera Allwen who goes on to become president of Ecotopia. The details of how this political party were formed and the secession of Ecotopia is the basis of Callenbach's prequel *Ecotopia Emerging* (1981).

When interviewed about his frame of mind and influences on his vision he first mentions anthropologists. When asked to specify an anthropologist that particularly influenced his work, he couldn't, and simply said he read it at university in Chicago and was 'hanging around with a bunch of anthropologists' at Berkeley. However, in his foreword to the fictional novel 'Storm'(Stewart, 2003 (1941)), a book which Callenbach cites as seminal in his early formation and the model for *Ecotopia Emerging's* (1981) narrative structure, he does refer to cultural anthropologist Alfred Kroeber (1876-1960), Professor of Anthropology at Berkeley, as someone who must have influenced Stewart and we might infer that he also influenced Callenbach.

Paralleling the influence of Schumacher College on Hopkins, living next to University of California, Berkeley, appears to have exposed Callenbach to many of his influences: cultural geographer Carl Sauer (1889 - 1975), Professor of Geography; George R Stewart (1895 - 1980), Professor of English; and Christopher Alexander (1936), Professor of Architecture. He thus shares the influence of Alexander with Hopkins. They also share influences in Schumacher and Kirkpatrick Sale.

While there are many parallels between Hopkins and Callenbach's visions, there are three areas covered in detail by Callenbach and notable by their absence with Hopkins, namely, population, feminism, and the organisation of the means of production.

Ecotopians, who Callenbach describes as 'idealists and biologically savvy', have decided that it is in their best interests to reduce the population, but William Weston reports back that this has been achieved through humane measures, going from 15 million to 14. 'The horrible "Green Revolution" famines, in which tens of millions perished in Pakistan, India, Bangladesh, and Egypt, had provided new and grim lessons in the dangers of overpopulation.' (1975, p.66) The three stage program adopted included education and abortion on demand, relocalisation reduced crowding in urban areas

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(‘radical decentralization of the country’s economic life’, p.67), and what is described as ‘watchful waiting’. Callenbach cites Malthus³⁵ as the origin of his thoughts on population.

Hardly democratic, the political elite in Ecotopia is exclusively female, including the president, Vera Allwen. Callenbach mentions the women around him at the time and *Herland* (Gilman, 1915) by American utopian feminist Charlotte Perkins as influences on his feminist thinking.

Undoubtedly the most radical aspect of life in Ecotopia is the organisation of the means of production:

“Ecotopian militants...spread the point of view that economic disaster was not identical with survival disaster for persons...a financial panic could be turned to advantage if the new nation could be organised to devote its real resources...to the basic necessities of survival...financial chaos was to be not endured but deliberately engineered’ (1975, p. 48)

To stave off massive unemployment the working week has been reduced to 20 hours. In the ensuing inevitable flight of capital GNP dropped by a third (an eerie parallel with what happened during Cuba’s ‘Special Period’, see Appendix XI). Despite this Ecotopians describe the period in terms of a ‘wartime excitement’, an analogy that Hopkins frequently uses.

In interview, Callenbach says that he had been a student radical in college at Chicago and describes his politics as “anti-communist socialist having studied Marxist inspired revolutions and saw how they usually didn’t [work].” When asked if he had been influenced by the work of Murray Bookchin, the other of de Gueuss’s (1999) modern ecological utopians, he said he had read *Post-scarcity anarchism* (1971) with great interest and later came to know Bookchin personally. He recounted telling Bookchin once ““You know Murray, it’s just luck in these things, I happen to be a film critic and like to imagine things visually and tell stories about them and you happen to be a brilliant social thinker and you work out all the ideas but we’re all digging in the same field’ – but I don’t think it made him feel better.”

Bookchin’s Ecotopia

‘Either we will create ecotopia based on ecological principles, or we will simply go under as a species.’ (March 1974, in Bookchin 1980).

‘From that point onward, human beings were regarded as mere resources, as objects instead of subjects. The hierarchies, classes, propertied forms, and statist institutions that emerged with social domination were carried over conceptually into humanity’s relationship with nature. Nature too became increasingly regarded as a mere resource, an object, a raw material to be exploited as a mere resource as slaves on a latifundium.’ (1980)

As Callenbach says above, “we’re all digging in the same field” and while Bookchin might view it that Callenbach was digging in his field, Bookchin’s views on an ecological society are consistent with Callenbach’s, if not a little more difficult to discern, as he did not collect them into a single novel as Callenbach did. And he too has his influences, de Gueuss calling them the merging of the utopian ideas of Peter Kropotkin³⁶ and William Morris³⁷. In what de Gueuss (1999) describes as ‘the most fascinating aspect of Bookchin’s theory is his thesis that the enlargement of liberty and participatory democracy are crucial conditions for achieving an ecological society,’ is one which shall

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be returned to in the discussion below.

The EDAP Scenario Planning Exercise

The output from the Scenario Planning exercises described in the methodology above, is summarised below.

Step 1: Assumptions/Drivers of Change

104 statements were collected regarding the starting set of assumptions about the state of the world or drivers of change. Table 4.1 below shows a sample of these from each of the arbitrary 'category' labels I assigned based on my own judgement. The full list reveals a range of perspectives, demonstrating either peoples' degree of optimism about the future or confusion about what this step should be versus the subsequent scenario planning step. The full list is included in Appendix VI.

Group	Category	Item
Heart	behaviour	Potential for things to get better compared to worse
Building	behaviour	Some may not adapt – difficult to change
Health	economic	Will travel less – impact on world of work - people living closer to work place - require re-skilling to fill local jobs
Building	economic	Mass unemployment possibly
Building	economic	New peasantry
Education	government	People will have given up on politics and be looking for answers outside of the box
Building	government	More interest in local politics – less trust in politicians
Heart	government	Increase in state control
Education	conflict	Big wave of social unrest
Building	conflict	Increased migration from the South
Energy	scarcity	Hard choices – what can we save or abandon?
Building	scarcity	Energy more scare & expensive
Energy	planning	Re-invention of town & city planning; bike to work
Traffic	climate	Loss of railway line between Netwon Abbot & Exeter due to sea level rise
Energy	energy	Additional nuclear power - dependent on investment being available
Arts	energy	All houses will have some sort of micro-generation – including existing stock
Building	food	Changes in crops – from global warming
Traffic	food	Local food prices will benefit from rising transport costs

Table 4.1: Sample output from the assumptions step.

Category	Building	Arts	Heart	Energy	Traffic	Education	Health	Grand Total
economic	8	9	3	4	2	3	2	31
behaviour	3	3	7	1	4	2	2	22
localisation	1	3	2		1	1	3	11
conflict	2	1	2	1	1	1		8
politics	2	1	1	1		1		6
education						5	1	6
energy		1		3	1			5

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scarcity	1		2	2				5
climate	2		1	1				4
planning		1	2	1				4
food	1			1				2
Grand Total	20	18	16	15	14	13	8	104

Table 4.2: Summary of themes of responses by group

Step 2: Scenario Outputs

In all, 226 statements were gathered from the seven groups for the four scenarios. The number of statements is roughly the same for each scenario although 'Enlightened Transition' is better represented.

TTT Group	Enlightened Transition	Climate Change Chaos	Peak Oil Gloom	Techno-fix	Grand Total
Arts	14	8	8	12	42
Building & Housing	14	11	9	9	43
Education	3	5	3	4	15
Energy	7	5	8	6	26
Health & Wellbeing	5	4	3	4	16
Heart & Soul	19	16	16	12	63
Transport	5	8	4	4	21
Grand Total	67	57	51	51	226
	30%	25%	23%	23%	

Table 4.3: Scenario Outputs from the different groups

Analysing the statements in further detail, it is clear that the utopia of 'Enlightened Transition' (ET) is starkly different from the other three dystopias. The ET statements were grouped by theme, again as for the assumptions above, these were arbitrarily chosen based on what seemed to make sense.

Category	Enlightened Transition	
Community	19	28%
Food	11	16%
Environment	8	12%
Transport	6	9%
Attitude	5	7%
Technology	5	7%
Economy	4	6%
Health	4	6%
Education	4	6%
Population	1	1%
Grand Total	67	

Table 4.4: Enlightened Transition scenario outputs for all groups categorised

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Of note is the anthropocentric nature (Callicott, 2002) of their concerns, by a significant margin, 'community' emerged as the strongest theme, the environment ranking only third behind food. Given the emphasis on community and food security in the Transition philosophy this should not be surprising.

Unlike for the utopian scenario, the dystopian statements fit quite neatly, with one exception, into what Kassman (1997) calls the 'Four Horsemen of the Green Apocalypse: Violence, Ecological Destruction, Injustice, and Alienation'.

	injustice	Violence	environmental destruction	alienation	(outliers)	Grand Total
Climate Change Chaos	19	21	10	3	2	55
Heart & Soul	8	3	3		1	15
Peak Oil Gloom	19	16	4	7	5	51
Building & Housing	1	6		2		9
Heart & Soul	2	7	2	3	2	16
Techno-fix	8	5	14	3	21	51
Arts	2		2	2	6	12
Heart & Soul	2	1	1	1	7	12
Grand Total	46	42	28	13	28	157

Table 4.5 Dystopian scenarios grouped using Kassman classification showing selected subgroups.

Kassman's criteria for the dystopian society is a mirror of the criteria he uses for a utopian ecological society which are the four pillars of the German Green movement (p. 18), namely: ecological harmony, social justice, democratic participation, and nonviolence.

The exception to the fit with these dystopian criteria is the responses for the 'Techno-fix' scenario. 21 of them could not be categorised as fitting into any of the four criteria and were generally positive statements about the utility of technology. Examples include: cheap solar panels, 100mpg car invented, lots of windmills all over the countryside. It appears that the cautious view regarding the appropriate use of technology is being confused with scepticism about a false faith in technology to allow business-as-usual to continue. However, it does demonstrate that these people are not neo-Luddites.

In keeping with the sentiment expressed by Bookchin above, concerns about injustice and violence outranked concerns about environmental destruction.

Scenario	Category	
Techno-fix	alienation	It could work but we may still be a spiritually poor isolated society
Peak Oil Gloom	alienation	More depression, anxiety, blame
Climate Change Chaos	environmental destruction	Ecological disasters GM farming Seed control Widespread starvation
Techno-fix	environmental destruction	Environmentally unsafe technologies pursued
Climate Change	injustice	Rise of racism in new forms

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Chaos		
Peak Oil Gloom	injustice	Poorer people will sell their oil ration to the rich & this will reduce poorer people's opportunities & increase social differences
Climate Change	violence	Violence @ the petrol pumps. Arguments in homes about energy use
Chaos		
Techno-fix	violence	Russia annexes EU

Table 4.6 Sample outputs from the different scenarios.

Membership Profiles

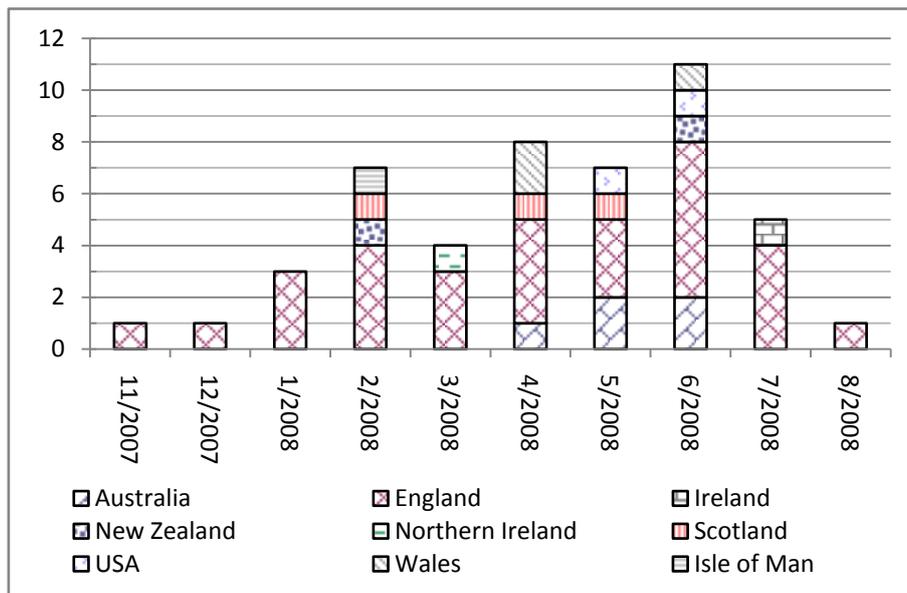


Figure 4.1: Where the Transition Projects are from and when they joined (of the 50 provided)

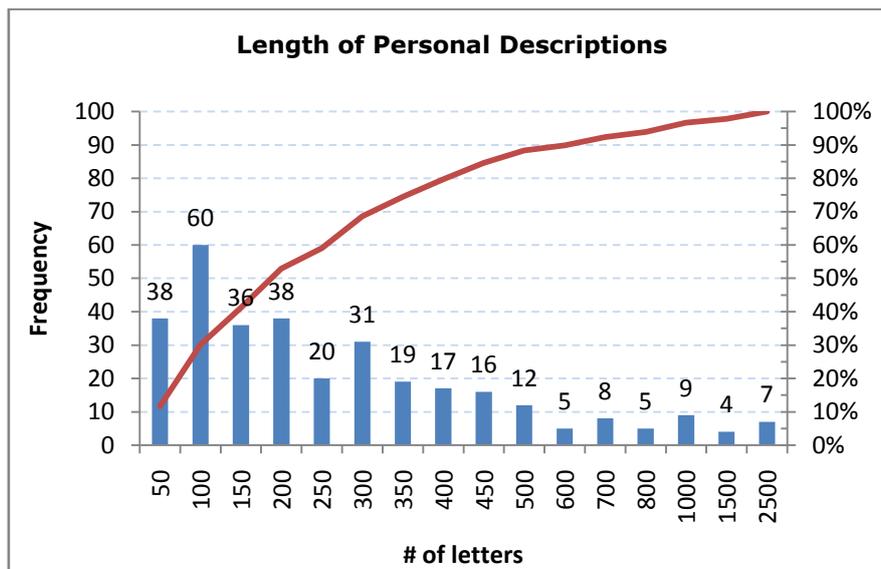


Figure 4.2: 70% of the descriptions are less than 300 letters, approximately 40 words.

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A summary of the results from an analysis of the biographical notes is included below.

Profiles: 325 (although a small number represent couples, <5)

Gender (inferred from name) Male: 160 (52%) Female: 145 (48%)

The challenge with drawing conclusions from the 325 biographical notes is the unstructured nature of the data. There is little or no consistency in how people choose to describe themselves, so it is difficult to draw strong conclusions.

An attempt was made to impose structure on the data using keyword searches and counting their occurrence, shown in Table 4.7 below. Again, the single word that occurred most often was 'community'.

Keyword	Count	% of Total
Green/Ecol/Enviro/Sustainable	147	45%
'Activist'	17	5%
Friends of the Earth	17	5%
Greenpeace	5	2%
Teach/Educator/Instructor/Student	78	24%
Business/Engineer (12)/Bank (2)	49	15%
Council	35	11%
Consultant	25	8%
Health/Medicine/Nurse	23	7%
Social/Psych	16	5%
Retired	16	5%
Community	97	30%
Allotment/Food	58	18%
Permaculture	46	14%
Peak Oil (11)/Climate Change (12)/Both (13)	36	11%
Resilience	2	1%

Table 4.7: Keyword analysis of biographies, in how many profiles did the keyword occur

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Sample profiles

A small sample of profiles is included below and more are included in Appendix VIII. While no definitive conclusions can be drawn from the biographies, the overall impression is that they are as we would expect for an environmental movement, the well-educated middle-class (Cotgrove & Duff, 1980, 1981; Searle-Chaterjee, 1999)

Retired banker (27years), energy bundle, Toastmaster president (public speaking)

Eco worrier, allotment slave, pacifist

...moved here two years ago, partly to be close to eco-community, having learnt about Peak Oil. Has been instrumental in distributing information about Peak Oil and encouraging people to engage with the issue. This work led to the formation of our Transition Initiative.

Degree in Chemical Engineering and Fuel Technology, worked 20 years in industry, now self employed doing Freight Facilities Grant applications (gets lorries off roads). Active in Greenpeace (as volunteer activist and as UK board member) and Amnesty International (chairs local campaign group) and has an allotment. Publicity experience, public speaking, good contacts with local community.

...has lived downtown for 30 years. He is president of [company]. From the beginning his practice is based on holistic integrative principles of design. He has been incorporating Permaculture principles in his work since 1997. He has attended several Permaculture workshops. He has been aware of Peak Oil since 1980 when he established his first business Energy Management Center that provided energy reduction strategies, sold solar hot water panels, and designed passive solar homes.

I believe that transition Whitstable is the way forward for our community and believe that oil has really peaked.

New Zealand (South Island) I am 45 years old, married with 2 children 9 and 5. I first learnt about Peak Oil 3 years ago. Since then, and in response to reading and understanding the consequences of Peak Oil, my wife and I have moved out of the city and bought a property with half an acre of land. I did a Permaculture course last year and together my wife and I are developing our property to grow food for us and our neighbours. I have sold my car and now bike and train to work. I went to the Eco show in [town] last year and learnt about Transition Towns at Richard Heinbergs talk. Since then I have been actively involved in promoting TT and helped to run a TT stall at the Organic River Festival in January this year. I believe that building strong communities is the only way to have a healthy vibrant Humanity and a future for my Children.

5. Discussion

Inspired by the recent publication of the WWF Report *Weathercocks and Signposts*, this thesis set out to answer a series of questions about the Transition Town movement's vision and values.

Specifically it asked how the Transition vision compares with other ecotopian visions and if the values of the people drawn to this vision differ from what might be expected. As the Transition Town movement is unique among environmental movements in the prominence it gives to *Peak Oil* it is desired to know what difference this strategy is making in the effectiveness of delivering their message or the people they are attracting. Finally, it is desired to assess the Transgressive Potential (Sargisson, 2000) of the movement to pull mainstream society towards realising its vision of the future.

Visions of Ecotopia, Values of Ecotopians

"The problems of the world cannot possibly be solved by sceptics or cynics whose horizons are limited by the obvious realities. We need men who can dream of things that never were."

John F. Kennedy

"We need a myth to be created, a modern myth that people can identify with which actually explains this future that we're heading into"

Minister Eamon Ryan TD (ASPO6 2007)

Is Hopkins' vision of an ecologically benign society a radical break from those of his predecessors, Callenbach and Bookchin in particular? While all journeys to Ecotopia are as unique as the individuals that go in search of it, for a place that exists only in the heads of its explorers, the place they arrive at remains remarkably consistent. And so the simple answer is no, Hopkins vision is consistent and, if anything, much less radical than that of Callenbach or Bookchin. But then, he doesn't need it to be. For him it is the only rational way to deal with the 'limits to growth' imposed by *Peak Oil* and is the only place a rational person would want to go in light of the other dystopias on offer. While he likely believes that *Peak Oil* will be the end of globalisation and neo-liberal market capitalism out of which a new social paradigm will hopefully, and not inevitably³⁸, emerge he, in keeping with the recommendation of Nardhaus and Shellenberger (2004), focuses on a positive vision of the future.

Peak Oil is not the reason Hopkins has a fifteen year career in Permaculture and any reading of environmental literature since the early seventies forewarned its imminent arrival. Discovering *Peak Oil* and the work of ASPO³⁹ provided new motivation, new urgency, a re-invigorated belief that Permaculture was not only the answer but that business as usual will end in his lifetime and it's either ecotopia or dystopia.

Hopkins makes the argument (2008, p. 39), admittedly cautiously, that *Peak Oil* 'can do more to engage and involve people and communities than climate change'. This is not borne out by the evidence thus far presented. And the economic argument is a rational self-interest one, not one of enlightened belief in *Peak Oil* or the benefit of resilience and stronger communities.

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Likewise for those who appear to be drawn to the movement based on an analysis of how they describe themselves. In the main they are the well-educated middle-class that one expects to find in an environmental movement, confirming the argument that only post-materialists can afford to care about the environment (Cotgrove & Duff, 1981; Nordhaus & Shellenberger, 2007). Only a very few articulated the kind of profound paradigm shift (Kuhn, 1996) that suggests *Peak Oil* has been some sort of new enlightenment or conversion event (Cotgrove, 1982, p. 33). For the rest, their value system, most likely well established by their teens has meant that they've been environmental activists for some time and *Peak Oil* is something which simply conforms with the 'limits to growth' paradigm that they've already accepted. It may bring this belief into sharp relief and provide enhanced motivation but its acceptance is because of predisposition not because of new awareness or the 'fact-laden', rational way it's been explained.

Transgressive Potential

"But the conclusions from political reality is that in order to have real movement the public has to be hit over the head with a two-by-four"

James R Schlesinger (ASPO6 2007)

"...there are two possible courses to affluence. Wants may be 'easily satisfied' either by producing much or desiring little. The familiar conception, the Galbraithian way, makes assumptions peculiarly appropriate to market economies: that man's wants are great, not to say infinite, whereas his means are limited, although improvable: thus the gap between means and ends can be narrowed by industrial productivity, at least to the point that 'urgent goods' become plentiful. But there is also a Zen road to affluence, departing from premises somewhat different from our own: that human wants are finite and few, and technical means unchanging but on the whole adequate. Adopting the Zen strategy, a people can enjoy an unparalleled material plenty, with a low standard of living."

Marshall Sahlins, Stone Age Economics, 1972 (2003)

Ultimately the potential weakness of the Hopkins strategy is that, as many hope, oil prices may fall or our economy adjusts in some other way that means that globalisation can somehow sputter along putting off until tomorrow those fundamental changes that increasing numbers of environmentalists state as required to mitigate the worst effects of Climate Change. Even if oil production does max out under 100 million barrels per day (current production is around 80), some models suggest that rather than a peak in the production profile there will be a plateau which could be maintained for a number of years such that price rations demand to that level and as the wealthy West can afford to pay that price it just means that those in the developing world won't get access. With regard to *Climate Change*, the issue, as many recognise, is coal (Kharecha & Hansen, 2008). The world needs to be convinced to leave it in the ground, either through a mass conversion to Voluntary Simplicity (Elgin, 1981; Doherty & Etzioni, 2003) or Trainer's 'Simpler Way' (2007) or through a mass conversion to affluence and post-material values through a massive investment in the clean energy economy (Nordhaus & Shellenberger, 2007).

Rather than the whole of civilisation deciding en-masse to this binary option it is likely each will choose the path that makes most sense to them, the one that appeals most to their values. Ironically, if Inglehart is correct, the end result of modernization is *Voluntary Simplicity*. The double irony is that *voluntary simplicity* may become *involuntary simplicity* through destruction of our ecosystem.

The Rocky Road to a Real Transition⁴⁰

Pepper, speaking frankly in interview, noted that 'the green movement is very good at recycling and one thing it recycles a lot is ideas, and not only other people's ideas but their own ideas'. And on the surface of it, as this thesis has attempted to show, there is nothing new in the philosophy of the Transition Town movement nor in the kinds of people it's attracting. Yet this is despite Hopkins' admission, speaking equally frankly, that 'if all that Transition projects do is to make a nice cosy club for people who are already on board to hang out and talk then I would regard it as a complete failure'. He wants nothing less than the radical transformation of society that environmentalists have been demanding for over forty years.

Returning to where I started with the WWF report and *The Death of Environmentalism* two critical issues emerge. The first is regarding the view expressed by Nordhaus and Shellenberger in *Break Through* that in order to solve the ecological crisis we face we must stop talking about limits and get to the end of history (Fukuyama, 2006) or modernisation (Inglehart & Welzel, 2005) through a massive investment in creating a clean energy economy⁴¹ such that we can all have post-material values and with our collective new-found affluence and resultant 'increased sense of freedom' choose to stop damaging our environment (see Figure 5.1, Figure 5.2. below).

In Hopkins view however, *Peak Oil* will not only mean that the developing world will not move up the 'GNP per capita' and 'Survival and well-being' curve but that the developed world will slip down, the implications of which are far from trivial.

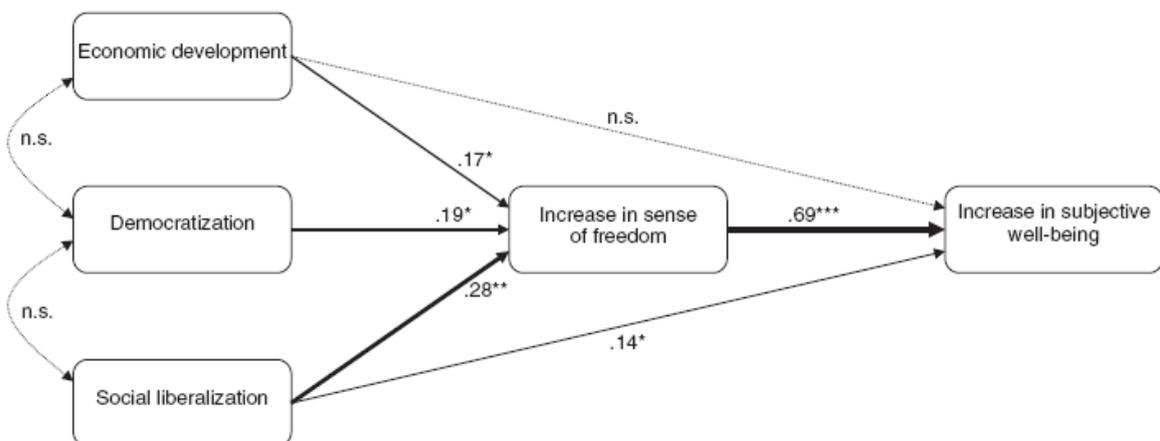


Figure 5.1: Socioeconomic change, growing freedom, and rising happiness: The human development path. (Inglehart et al, 2008)

Transition Towns: Ecotopia Emerging?

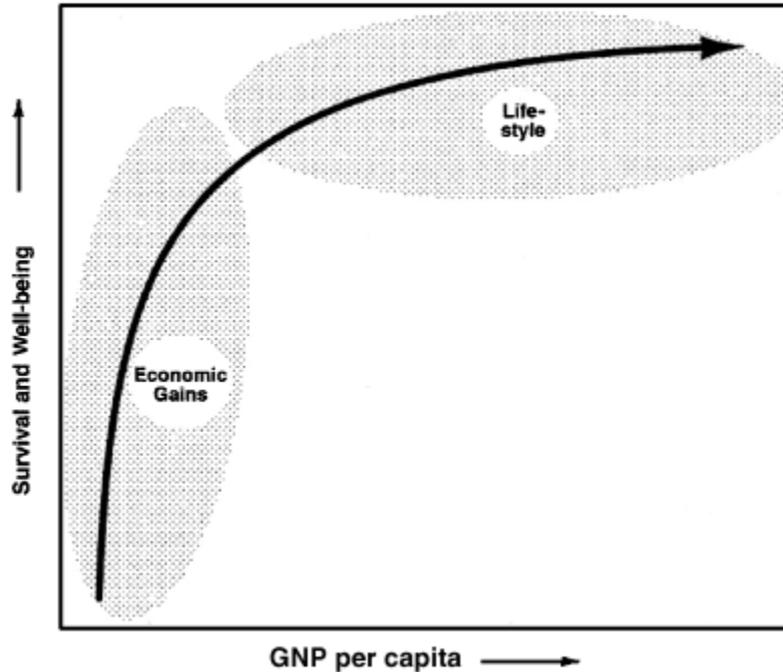


Figure 5.2: Economic development leads to a shift in survival strategies. From *Modernization and Postmodernization: Cultural, Economic, and Political Change in 43 Societies*, by R. Inglehart, 1997 (Inglehart et al, 2008)

The second issue, which has within it the kernel of hope, is from the WWF report. It refers to recent work on the nature of 'intrinsic' and 'extrinsic' values and goals. 'Intrinsic' values are those oriented towards personal growth, relationships, and community involvement versus 'extrinsic' values which are status oriented related to the acquisition of material goods. 'There is a great deal of evidence that an intrinsic value orientation leads to higher levels of well-being, and that such orientations also lead to greater engagement with pro-environmental behaviour.' (WWF UK, 2008, p. 30) Intrinsic goals are inherently rewarding to pursue, while the pursuit of extrinsic goals 'does not lead directly to the satisfaction of innate psychological needs (such as belonging) – rather, the satisfaction they confer is contingent upon the responses of others.'

The outputs from both the EDAP Scenario Planning exercise and the keyword analysis of the Transition core team members' biographies both point to the importance of community which would indicate that peoples' involvement is satisfying an intrinsic value and goal to belong to a community. If that is the case and through the movements success it can cultivate a desire to satisfy this need among those outside the movement in mainstream society, then that could be the answer to Pepper's question as to where lies 'true transgressive potential'.

6. Conclusion

Rob Hopkin's vision for 2030 fits neatly into existing literature on Ecotopias of sufficiency (de Geus, 1999). That Hopkins calls it abundant stems from his Zen (Sahlins, 1972), it's abundant because he wants less and feels compensated by rich and rewarding community relationships. Because of the external pressure from *Peak Oil* he feels no need to call for a radical change in society as his predecessors have done. He simply argues to prepare for its eventuality. As long as oil prices go up and oil production goes down, his strategy may prove correct.

However, the evidence all points to the nature of our social paradigms precluding us from rationally arriving at his vision of the future. You are either predisposed to believing the 'limits' argument or you believe that human ingenuity will continue to deliver, and which you believe is a matter of where your faith lies.

The people currently drawn to the movement match Cotgrove's profile for 'post-materialists' - their values do not reflect the continued hegemony of mainstream market values. The evidence would suggest that such a 'transition' by mainstream society is far from trivial and likely to require an external shock - undermining/destroying the current paradigm. If *Peak Oil* is such a catalyst for paradigm collapse then, as Hopkins contends, we don't have a choice, it's his way or Mad Max. 'Converting' the public en-masse to a new faith of limits in advance of its reality arriving looks like it might take the Second Coming. Failing that, continuing to work as they are on satisfying their intrinsic goals to be members of a community, they may cultivate a similar desire in mainstream society and pull it towards Transition.

I will conclude with a conclusion drawn a quarter century ago:

'It would seem prudent, for the long term interests of us all, to pay particular attention to the warnings of the Catastrophists. The cards are stacked against them: their view of reality must struggle against considerable odds. But they *could* be right. And if their vision of the future is closer to reality, and if we ignore it, then the results could well be disastrous for the future of civilization as we know it today.' (Cotgrove, *Catastrophe or Cornucopia: The environment, politics, and the future*, 1982, p. 120, concluding sentences.)

Afterword

The Scorpion and the Frog

A scorpion and a frog meet on the bank of a stream and the scorpion asks the frog to carry him across on its back. The frog asks, "How do I know you won't sting me?" The scorpion says, "Because if I do, I will die too."

The frog is satisfied, and they set out, but in midstream, the scorpion stings the frog. The frog feels the onset of paralysis and starts to sink, knowing they both will drown, but has just enough time to gasp "Why?"

Replies the scorpion: "It's my nature..."

One afternoon a fisherman was lying on a beautiful beach with his fishing pole propped up in the sand and his solitary line cast out into the sparkling blue surf. He was enjoying the warmth of the afternoon sun and the prospect of catching a fish. About that time, a businessman came jogging down the beach trying to relieve some of the stress of his workday. When he saw the fisherman sitting on the beach with the one line in the water he said: "You aren't going to catch many fish that way, you should be working rather than lying on the beach!"

The fisherman looked up at the businessman, smiled and replied, "And where will that get me?"

"Well, you can get more fishing gear and catch more fish!" was the businessman's answer.

"And where will that get me?" asked the fisherman, still smiling.

The businessman replied, "You will make money, from the extra fish you catch, and you'll be able to buy a boat which will then result in larger catches of fish!"

"And where will that get me?" asked the fisherman again.

The businessman was beginning to get a little irritated with the fisherman's questions.

"You can buy a bigger boat and hire some people to work for you!" he said.

"And where will that get me?" repeated the fisherman.

The businessman was getting angry. "Don't you understand? You can build up a fleet of fishing boats, sail all over the world, and let all your employees catch fish for you!"

Once again the fisherman asked, "And where will that get me?"

"The businessman was red with rage and shouted at the fisherman, "Don't you understand that you can become so rich that you will never have to work for your living again! You can spend all the rest of your days sitting on this beach looking at that sunset. You won't have a care in the world!"

The fisherman, still smiling, simply looked up, nodded and said: "And how is that different than where I am now?" He then turned, looked at the sunset, with his pole in the water, and smiled. The business man jogged off, without a clue.

"Everyone should believe in something. I believe I will go fishing"

Henry David Thoreau

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APPENDIX

I. Physics and Politics

Power is the subject under study in politics. In the context of energy and energy security, politics plays a very central role. The politics of Climate Change is intrinsically bound up in energy, to use or not to use coal, nuclear, the extent of renewables. However, energy, power, and force, in physics have very specific meanings and it might be insightful to reflect on them. The reader is directed to 'Sustainable Energy - without the Hot Air' [www.withouthotair.com] for a fuller and enlightening treatment.

Energy: • **noun** (pl. **energies**) **4** Physics the property of matter and radiation which is manifest as a capacity to perform work. OED Measured in joules

Power: • **noun** **9** Physics the rate of doing work, measured in watts or horse power. OED Measured in watts = joule/second

Force: • **noun** **2** Physics an influence tending to change the motion of a body or produce motion or stress in a stationary body. OED Measured in newtons = joule/meter

Crudely, force needs energy, the faster the force the greater the power.

Oil is energy, one barrel containing approximately 5.7GJ or 1.4 million Calories. If you enjoyed a daily food intake of 2,200 Calories and could eat oil, one barrel would keep you alive for 623 days, almost two years! Oil is currently consumed at a rate of approximately 85 million barrels per day (mbpd). This is a measure of power, energy per unit time. 2,200 Calories per day is the power required to 'drive' a healthy human being, or about 100 watts (think of a light bulb). 85 million barrels per day is equivalent to 5.6 terawatts, TW (tera = 10^{12}), which is a number too enormous to conceive, but if it were humans, it would be 56 billion of them, or nine times the worlds current population. And that's only oil. According to the IEA only 34% of World Primary Energy Supply in 2004 was from oil, 25% from coal. The total figure: 11, 059 million tonnes of oil equivalent in one year (again, energy per unit time = power) using the crude converter above, is about 147 billion people. And that's a significant underestimate of the human equivalent of the energy services we enjoy today. If we had humans provide us with all those energy services, as in the Wachowski brother's 1999 movie 'The Matrix', only a fraction of the energy they consume is available to do work, equivalent to about 40 watts.

Recalling Newton's Laws of Motion, to get a car to move requires a force to overcome friction and the car's inertia. If you want the car to go faster you need to apply a greater force, requiring greater power. If you want the car to go up a hill at the same speed you need to apply a greater force. If you've driven a small car you will probably have experienced its speed drop as it climbs a hill and putting the accelerator to the floor makes no difference. You're at the cars maximum power. A maximum in global oil production is equivalent to reaching this maximum power. That there is still lots of oil in the ground is of little consequence, the issue is how quickly you can consume it, that's power. If you can't consume it at the same rate you simply have less power for a longer period of time. Alfred Lotka developed a theory called the 'Maximum Power Principle' in which he proposed that natural selection was, at its root, a struggle among organisms for available energy; organisms that survive and prosper are those that capture and use energy at a rate and efficiency more effective than that of its competitors.

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II. The men behind Carbon Lock-in

"In the excitement over the unfolding of his scientific and technical powers, modern man has built a system of production that ravishes nature and a type of society that mutilates man. If only there were more and more wealth, everything else, it is thought, would fall into place."

Schumacher E. F., 1973



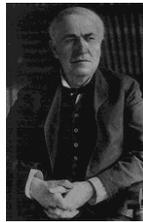
JP Morgan
(1837 – 1913)



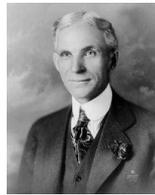
JD Rockefeller, Sr.
(1839 – 1937)



George Westinghouse
(1846 – 1914)



Thomas Edison
(1847 – 1931)



Henry Ford
(1863 – 1947)



Nikola Tesla
(1856 – 1943)

RANK	COMPANY	COUNTRY	INDUSTRY	SALES (\$BIL)	PROFITS (\$BIL)	ASSETS (\$BIL)	MARKET VALUE (\$BIL)
17	Wal-Mart Stores	United States	Retailing	348.65	11.29	151.19	201.36
7	ExxonMobil	United States	Oil & Gas Operations	335.09	39.50	223.95	410.65
8	Royal Dutch Shell	Netherlands	Oil & Gas Operations	318.85	25.44	232.31	208.25
11	BP	United Kingdom	Oil & Gas Operations	265.91	22.29	217.60	198.14
513	General Motors	United States	Consumer Durables	207.35	-1.98	153.23	18.04
49	DaimlerChrysler	Germany	Consumer Durables	199.99	4.26	235.11	68.78
19	Chevron	United States	Oil & Gas Operations	195.34	17.14	132.63	149.37
12	Toyota Motor	Japan	Consumer Durables	179.02	11.68	243.60	217.69
19	Total	France	Oil & Gas Operations	175.05	15.53	138.82	152.62
22	ConocoPhillips	United States	Oil & Gas Operations	167.58	15.55	164.78	107.39
4	General Electric	United States	Conglomerates	163.39	20.83	697.24	358.98
532	Ford Motor	United States	Consumer Durables	160.12	-12.61	278.55	14.94

Forbes Magazine ranking of public companies, forbes.com, accessed August 2008

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III. Somerset County Council Resolution RE: Transition Towns

Somerset COUNTY COUNCIL SUMMARY OF DECISIONS 23 JULY 2008

<http://www.somerset.gov.uk/council/board1/2008%20July%2023%20Summary%20of%20Decisions.pdf>
[accessed 17/8/2008]

(2) Transition Town Movement

The Council **RESOLVED** to adopt the following resolution:

That this Council

1. acknowledges the work done by communities in Somerset on Transition Towns and that the independence of the Transition Movement is key to its grass roots appeal
2. as demonstrated in its Climate Change Strategy, fully endorses the Transition Town Movement and subscribes to the principles and ethos of the organisation's goals to reduce dependence on fuel oil and create more sustainable communities
3. commits to providing support and assistance to all towns in Somerset that wish to join this initiative to help them achieve the goals they set for themselves as local communities, as demonstrated under the 'Community Initiatives' section of the Climate Change Strategy
4. therefore, requests the Scrutiny and Executive Committees to consider through the council's strategic planning process:
 - allocating funds to assist in achieving the outcomes of the Transition Towns Movement in Somerset.
 - requiring all directorates to engage with and provide support for Transition Initiatives in Somerset
5. through the work outlined above, seeks to become the first Transition Authority in the UK
6. agrees to undertake a review of its budgets and services to achieve a reduction in dependence on fuel oil and produce an energy descent action plan in line with the principles of the Transition Initiative

IV. Waterstones' MPs' Top 10 Summer Reads 2008

Ffion Hague	The Pain and the Privilege: The Women in Lloyd George's Life
Khaled Hosseini	A Thousand Splendid Suns
William Hague	William Wilberforce: The Life of the Great Anti-Slave Trade Campaigner
Sebastian Faulks	Devil May Care
Barack Obama	The Audacity of Hope
Barack Obama	Dreams From My Father: A Story of Race and Inheritance
William Hague	William Pitt the Younger
Alastair Campbell	The Blair Years
Robert Harris	The Ghost
John Prescott	My Story: Pulling No Punches
RS Thomas	Poems
John O'Farrell	An Utterly Impartial History of Britain
Rob Hopkins	The Transition Handbook: From Oil Dependency to Local Resilience

<http://news.bbc.co.uk/1/hi/entertainment/7552481.stm> (accessed 21/8/2008)

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V. BBC - Radio 4 - The Archers - Transition Ambridge

<http://www.bbc.co.uk/radio4/archers/backstage/transition.shtml> (accessed 21/8/200)

Transition Ambridge

24 April 2008

This week, Pat is visiting Stroud in Gloucestershire to research her idea that Ambridge should become a "transition community". But what would this process involve, and why?

A Transition Town is "a community in a process of imagining and creating a future that:

- addresses the twin challenges of diminishing oil and gas supplies and climate change
- and creates the kind of community that we would all want to be part of.

Peak Oil

We're all familiar with the issues surrounding climate change, but Peak Oil has had less publicity. It refers to a point where the world will start to face diminishing supplies of oil and gas. Some experts think we may already have reached this point, and others that it is not too far away. Last year, former BP chief petroleum engineer Jeremy Gilbert said he expected to see a peak sometime before 2015.

Campaigners then predict an extended period of energy decline when, year on year, the world will have decreasing amounts of oil to fuel its industrialised way of life. Eventually the world's remaining stocks of oil will be extremely difficult and expensive to harvest. And once it takes an oil barrel's worth of energy to extract a barrel of oil, then extraction will become pointless.

Action Plan

In 2005, in response to this challenge, a group of students from the Irish town of Kinsale drew up the first draft of an Energy Descent Action Plan (EDAP) for the town. The report, which was formally adopted in a unanimous vote by the town council, set out how Kinsale could make the transition from a high energy consumption town to a low energy one.

Transition Town Totnes

The students' tutor Rob Hopkins later became one of the leaders in an initiative in Totnes, which became the world's first Transition Town. They stated their objectives as:

- "To explore and then follow pathways of practical actions that will reduce our carbon emissions and dependence on fossil fuels.
- To build the town's resilience, that is its ability to withstand shocks from the outside, through being more self-reliant in areas such as food, energy, health care, jobs and economics."

The thinking behind Transition Town Totnes was that a town using much less energy and resources than currently consumed could, if properly planned for and designed, be more resilient, more abundant and more pleasurable than at the present.

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VI. Transition Town Projects studied

Count	Date	Country	Name	Core Team	Community	Population	Type	Name
1	21, Nov 07	Wales	Bro Ddyfi	5	60			
2	22, Nov 07	England	Whitstable	11			Town	Transition Town Whitstable
3	2, Dec 07	England	Brampton	12		8,500	Town	
4	1, Jan 08	England	Dunbar	15	60			
5	24, Jan 08	England	Maidenhead	6	150	60,000	Town	
6	29, Jan 08	England	Seaton	6	17	6,500	Town	
7	1, Feb 08	England	Bath	25	115	85,000	City	
8	12, Feb 08	Man	Isle of Man	13	35	85,000	Island	
9	12, Feb 08	England	Exeter	10	150	120,000	City	
10	15, Feb 08	Scotland	Biggar	10	24	2,000	Town	
11	18, Feb 08	England	Scilly	4	50	2,000	Islands	
12	21, Feb 08	England	Canterbury	5	46	40,000	City	
13	25, Feb 08	Zealand	Kapiti	5	50	40000	District of 5 coastal towns	
14	10, Mar 08	England	Leicester	7	150	279,921	City	
15	11, Mar 08	England	Wolverton	7		9,000	Town	Transition Town Wolverton
16	15, Mar 08	Ireland	Hollywood	13	0	13,000	Town	Transition Hollywood
17	20, Mar 08	England	Westcliff	5	20	40,000	Town	
18	3, Apr 08	Wales	Presteigne	8	75	2,500	Town	Transition Town Presteigne
19	10, Apr 08	England	Norwich	5	80	126,000	City	
20	11, Apr 08	England	Crediton	12	220	18,000	Town & Hinterland	Crediton Climate Action
21	14, Apr 08	England	Tring	7	10	14,000	Town	Tring in Transition
22	21, Apr 08	Scotland	Howe	4	27	1,000	Rural - collection of small villages and farms	
23	26, Apr 08	Wales	Lampeter	35	250	3,500	3 Towns, 3 Rural areas	
24	26, Apr 08	Australia	Armidale	7	100	25000	Town	Transition Armidale
25	29, Apr 08	England	Breathe	5	14	3,500	village, rural	
26	4, May 08	Australia	Bell	6		10,000	2 suburbs of city (250k)	
27	5, May 08	England	Chichester	4	200	22,000	City Shire (3 small towns and hinterland)	Bellingden Shire Transition Town (BeSTT)
28	13, May 08	Australia	Bellingden	12	250	12,400		
29	15, May 08	England	Berkhamsted	7	50	19,000	Town	
30	16, May 08	Scotland	Forres	12	40	10,000	Town	Transition Town Forres Group TTFG
31	19, May 08	England	Coventry	8	200	300,000	City	Transition Coventry
32	20, May 08	USA	Sandpoint	7	30	8,105	Town	Sandpoint Transition Initiative (STI)
33	1, Jun 08	Zealand	Opotiki Coast	4	34	9,000	Town	

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34	2, Jun 08	Australia	Newcastle	7	70	500,000	City	Transition Town Newcastle
35	5, Jun 08	England	Bungay	9	20	4,895	Town	Sustainable Bungay
36	7, Jun 08	Wales	Llandeilo	12			Town	
37	8, Jun 08	England	Chepstow	14	53	15,000	Town	
38	8, Jun 08	USA	Ketchum	5	750	3,226	Town	Transition Ketchum - Community Rising
39	14, Jun 08	Australia	Hervey Bay	8	129	50,000	City	
40	17, Jun 08	England	Mersea	6	60	7,000	Island	Transition Island Mersea (TIM)
41	21, Jun 08	England	Leek	8	28	20000	Town	Transition Leek Transition Ladock and Grampound Road
42	23, Jun 08	England	Truro	11	20		Rural/Parish	
43	26, Jun 08	England	Cambridge	12	270	120,000	City	
44	3, Jul 08	England	Stafford	6	55	50000	Town	
45	4, Jul 08	England	Exmouth Kingston Upon	6	120	35,000	Town	Transition Town Exmouth
46	7, Jul 08	England	Thames	8	59	150,400	Suburban Town	
47	9, Jul 08	England	Buxton	6	21	23,000	Town	Transition Buxton Kildare Transition Town
48	19, Jul 08	Ireland	Kildare South	5		7,000	Town	
49	3, Aug 08	England New	Liverpool	6	105	60,000	City	
50		Zealand	Waiheke	6	300	7,500		

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VII. EDAP Results – Assumptions

Group	Category	Item
Arts	social	Population is going to be aging dramatically – fewer babies born
Energy	social	Population of Totnes will remain around the same
Arts	social	Nature will flourish – as we can't destroy / cut as at present. Fewer pesticides
Health	social	Work less hours to allow time for personal productivity: more gardening time / more shopping time (takes longer in local shops)
Arts	social	More time spent on survival activities eg collecting wood, making clothes
Building	social	More part-time work
Arts	social	Far fewer managers
Education	social	Huge amount of change: current institutions will have to change
Arts	social	Corporate structures will - resist this tooth & nail
Building	social	- be controlling society
Building	social	Greater divisions of haves and have-nots
Traffic	social	People on low incomes hit first
Education	behaviour	Wheel of community will turn again
Heart	behaviour	Greater community living
Energy	behaviour	Increasing take up of sharing eg ecovillages
Heart	behaviour	Potential for things to get better compared to worse
Heart	behaviour	Rise in heart based – grass roots projects
Heart	behaviour	Global consciousness / co-operation will change
Arts	behaviour	Strengthening of community – people stay around more
Traffic	behaviour	Look at pre-oil society – inc WWII
Arts	behaviour	People will respond and pull together (as per WWII)
Arts	behaviour	Western Cultural paradigm may become Eastern ie Chinese & Indian influence through current trading
Education	behaviour	Expectations about individual ownership will change ie. society will be more likely to share items eg vacuum cleaners
Energy	behaviour	Access to a service compared to personal ownership eg cars
Traffic	behaviour	UK holidays in place of abroad
Heart	behaviour	New ways to relate to each other
Building	behaviour	Villification for waste
Building	behaviour	Change of values
Heart	behaviour	Polarization
Heart	behaviour	Rise in fear, anxiety, depression
Traffic	behaviour	Consumers can only be curtailed by rationing or prices
Building	behaviour	Some may not adapt – difficult to change
Traffic	behaviour	A lot of time convincing people: 75% don't believe } follow fashion Sheep mentality }
Health	behaviour	Population increase in obesity – currently estimated at 50% by 2030
Health	behaviour	Growth in the number of people taking responsibility for their own health
Building	economic	Any industrial product that uses fossil fuels will be exorbitantly expensive – (true costs reflected)
Arts	economic	Barter economies
Arts	economic	Flourishing of cottage industries

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Heart	economic	Globalization will collapse = self protective
Heart	economic	Revival of skills
Heart	economic	New kinds of jobs
Arts	economic	Market capitalism likely to change
Traffic	economic	Money will drive change Changes in the way we use money: More black market economy (as per last war) More LETS More local autonomy
Education	economic	More community exchange Will travel less – impact on world of work - people living closer to work place - require re-skilling to fill local jobs
Health	economic	
Education	economic	Reserved occupations will be identified.
Building	economic	Mass unemployment possibly
Building	economic	Different employment eg in recycling
Building	economic	New peasantry
Building	economic	Land reform – occupation
Building	economic	Movement back to the land
Arts	economic	More people working on the land.
Energy	economic	Land owned more by groups / stewards compared to houses
Energy	economic	Wholesale land re-distribution to small-holdings
Energy	government	Governments will support Renewable Energy grants Oil available to some Governments but not to others Strategic resource – no longer a market
Building	government	Britain still able to obtain some oil
Arts	government	Governments are not going to lead this / Transition towns will do this People will have given up on politics and be looking for answers outside of the box
Education	government	
Building	government	More interest in local politics – less trust in politicians
Heart	government	Increase in state control
Education	education	More Steiner type of education More apprenticeships:- craft & trade skills
Education	education	young people will leave school earlier for more meaningful work / activities
Education	education	Schools become more democratic and involve students more
Education	education	More attention to education based on feelings and relationships
Education	education	Practical skills, DIY for self build, growing food etc will be developed Need to make changes in education: -about cooperation, communication } at a feeling level - relationships, community }
Health	education	
Building	localisation	Hardly any commuting Less travel to hospitals and health care - challenge for health care - more localized provision with technical assistance / webcams (CAT – Computer assisted technology)
Health	localisation	
Health	localisation	Supermarkets cease to exist
Health	localisation	More local shopping – human size shops
Arts	localisation	Fewer cars, more buses / horses etc. Car sharing

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Arts	localisation	More school buses / communal transport
Arts	localisation	Flying will cease
Heart	localisation	Greater localization of resources
Heart	localisation	Impact of localization on other communities outside Totnes
Traffic	localisation	Shipping more viable – for freight
Education	localisation	Schools will be more local and change to include classes for the community & life skills.
Energy	conflict	Cities on lower energy world? Mass migrations
Education	conflict	Big wave of social unrest
Building	conflict	Increased migration from the South
Arts	conflict	Military will get the last of the fuel
Heart	conflict	Lot more violence, chaos, threats of war in early years
Traffic	conflict	Migration & water wars
Building	conflict	Implosion of cities / disintegration
Heart	conflict	Temperate climates will suffer less leading to: great migration Putting huge pressures on societies
Energy	scarcity	A lot of things will affect us including other resource declines such as phosphorus – domino effect
Energy	scarcity	Hard choices – what can we save or abandon?
Building	scarcity	Energy more scarce & expensive
Traffic	scarcity	Almost zero oil
Traffic	scarcity	Water scarcity
Energy	development	Physical boundaries between city & rural environment will blur. ie greening of the city & common ownership of rural environment
Energy	development	Re-invention of town & city planning; bike to work
Heart	development	Sell house
Traffic	development	Lots of house building – not regular sustainable types
Building	climate	More intensive rain & sun
Building	climate	Major flooding in London (a major tipping point?)
Traffic	climate	Loss of railway line between Netwon Abbot & Exeter due to sea level rise
Energy	climate	Sea level rise: significant / re-distribution of value of land. Major coming problem and drain on resources
Energy	energy	70% Energy reduction via population – energy efficiency
Energy	energy	- go without
Energy	energy	Additional nuclear power - dependent on investment being available
Energy	energy	Coal fired power stations
Arts	energy	All houses will have some sort of micro-generation – including existing stock
Traffic	energy	Continually escalating oil prices
Building	food	Changes in crops – from global warming
Traffic	food	Local food prices will benefit from rising transport costs

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VIII. Scenario Outputs

Scenario	Horsemen	Output
Climate Change Chaos	alienation	isolation
Climate Change Chaos	alienation	UN and other international agencies give up and disband
Climate Change Chaos	alienation	Increase in depression in people
Peak Oil Gloom	alienation	People's inability to adapt to new circumstances
Peak Oil Gloom	alienation	More depression, anxiety, blame
Peak Oil Gloom	alienation	Depression, (mental not economic)
Peak Oil Gloom	alienation	helplessness
Peak Oil Gloom	alienation	Look at social hour planning leading to social exclusion / isolation More emigration, more illness & depression, more power to the people away from central
Peak Oil Gloom	alienation	Greater isolation from the natural world
Techno-fix	alienation	It could work but we may still be a spiritually poor isolated society
Techno-fix	alienation	denial
Climate Change Chaos	environmental destruction	Tropical diseases become endemic in UK Failure of international negotiations to set national carbon emission targets
Climate Change Chaos	environmental destruction	Ecological disasters GM farming Seed control
Climate Change Chaos	environmental destruction	Widespread starvation Tipping points passed;
Climate Change Chaos	environmental destruction	Environment & society
Climate Change Chaos	environmental destruction	Sea level rises start to affect major cities Floods, heatwaves etc cause mass migrations & pandemics requiring energy intensive solutions
Climate Change Chaos	environmental destruction	Sea level rises & flooding disasters causing economic meltdown
Climate Change Chaos	environmental destruction	floods
Climate Change Chaos	environmental destruction	Wildlife species extinction
Climate Change Chaos	environmental destruction	Water flooding & scarce
Peak Oil Gloom	environmental destruction	GMO food standard
Peak Oil Gloom	environmental destruction	Continuing through using other resources / energy
Peak Oil Gloom	environmental destruction	Shale oil widely used causing increase in CO2 & pollution
Peak Oil Gloom	environmental destruction	Marginal oil fields are brought into production
Techno-fix	environmental destruction	GMO food standard
Techno-fix	environmental destruction	Climate change overtakes us anyway. Ice caps
Techno-fix	environmental destruction	Nuclear waste disasters
Techno-fix	environmental destruction	Environmentally unsafe technologies pursued
Techno-fix	environmental destruction	Unintended catastrophic consequences
Techno-fix	environmental destruction	Nuclear power
Techno-fix	environmental destruction	Nuclear power stations
Techno-fix	environmental destruction	Attempts to manufacture synthetic biofuels
Techno-fix	environmental destruction	Intense development renewable energy eg. Severn Barrage
Techno-fix	environmental destruction	Rising sea levels, climate refugees
Techno-fix	environmental destruction	Carbon sequestration doesn't meet expectations
Techno-fix	environmental destruction	Nuclear power on line

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Techno-fix	environmental destruction	More nuclear power propaganda
Techno-fix	environmental destruction	Peak uranium
Climate Change Chaos	injustice	famine
Climate Change Chaos	injustice	Water, food, fuel starvation
Climate Change Chaos	injustice	shortages
Climate Change Chaos	injustice	Big divide between rich & poor
Climate Change Chaos	injustice	Bigger gap in wealth inequalities
Climate Change Chaos	injustice	New legislation
Climate Change Chaos	injustice	Large scale migration
Climate Change Chaos	injustice	Famine & mass migration. War
Climate Change Chaos	injustice	My family in Kenya will probably want to come and live with me but they won't have the means to get here
Climate Change Chaos	injustice	corruption
Climate Change Chaos	injustice	Breakdown of government rise of corporations
Climate Change Chaos	injustice	Increased authoritarian government. Intra / inter national conform
Climate Change Chaos	injustice	Government system changes. Curfews, rights liberties
Climate Change Chaos	injustice	Rise of racism in new forms
Climate Change Chaos	injustice	Poor will have increasingly less while rich keep their lifestyles
Climate Change Chaos	injustice	More separation between the rich & the poor. More illness & floods & unpredictable weather. More earthquakes
Climate Change Chaos	injustice	Rise of racism in new forms
Climate Change Chaos	injustice	Hate & resentment for the rich
Climate Change Chaos	injustice	Greed & consumerism
Peak Oil Gloom	injustice	Corporations more controlling
Peak Oil Gloom	injustice	Govt system changes – lives monitored not as free
Peak Oil Gloom	injustice	Entrenchment of vested interests eventually split to elite / masses
Peak Oil Gloom	injustice	Possible revolution & chaos to follow
Peak Oil Gloom	injustice	Severe deprivation
Peak Oil Gloom	injustice	hoarding
Peak Oil Gloom	injustice	Rural communities attempting transition style living, excluded from funding & grant support
Peak Oil Gloom	injustice	famine
Peak Oil Gloom	injustice	Haulage firms & beam trawlermen go out of business
Peak Oil Gloom	injustice	Fuel & food poverty
Peak Oil Gloom	injustice	Endless economic depression
Peak Oil Gloom	injustice	Intense popular resistance to immigration
Peak Oil Gloom	injustice	Expense of healthcare (private etc) decreases general health of population, rationing drugs and services
Peak Oil Gloom	injustice	Social fragmentation continues
Peak Oil Gloom	injustice	rationing
Peak Oil Gloom	injustice	poverty
Peak Oil Gloom	injustice	inequality
Peak Oil Gloom	injustice	Poorer people will sell their oil ration to the rich & this will reduce poorer people's opportunities & increase social differences
Peak Oil Gloom	injustice	Disempowerment of people
Peak Oil Gloom	injustice	Injustice
Peak Oil Gloom	injustice	Resentment
Techno-fix	injustice	Corporations more controlling

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Techno-fix	injustice	Division of society into energy resource elite & large energy peasantry
Techno-fix	injustice	Grumbling envy of others
Techno-fix	injustice	Huge gaps between haves & have nots
Techno-fix	injustice	famine
Techno-fix	injustice	Business & profit still dictates the terms
Techno-fix	injustice	Economic situation robust for some institutional slavery
Techno-fix	injustice	Wasted funds, and minds and time on pipe dreams
Climate Change Chaos	violence	Mad Max world
Climate Change Chaos	violence	More wars
Climate Change Chaos	violence	war
Climate Change Chaos	violence	Resource wars
Climate Change Chaos	violence	War without end
Climate Change Chaos	violence	Civil strife
Climate Change Chaos	violence	conflict
Climate Change Chaos	violence	doom
Climate Change Chaos	violence	Street wars
Climate Change Chaos	violence	Nuclear wars. Life as we know it extinct
Climate Change Chaos	violence	Violence @ the petrol pumps. Arguments in homes about energy use
Climate Change Chaos	violence	Increased violence nationally & internationally
Climate Change Chaos	violence	Anarchy, society breakdown
Climate Change Chaos	violence	Theft of oil and other fuels
Climate Change Chaos	violence	Social unrest:
Climate Change Chaos	violence	Famine
Climate Change Chaos	violence	Crime
Climate Change Chaos	violence	vigilisation
Climate Change Chaos	violence	Migration from cities & cause conflict
Climate Change Chaos	violence	Social breakdown
Climate Change Chaos	violence	Scavenging & looting of resources by economic migrants
Climate Change Chaos	violence	Fascist revival
Climate Change Chaos	violence	Rising international tensions resource nationalism
Climate Change Chaos	violence	Health care system collapses under pressure from mass migration & rising infection rates
Peak Oil Gloom	violence	Economic meltdown
Peak Oil Gloom	violence	New crimes of "energy theft" tapping into neighbours' oil tanks & solar panels. Pylon high-acking
Peak Oil Gloom	violence	Widespread theft of oil / petrol
Peak Oil Gloom	violence	Looking to leaders to come up with controls & rations
Peak Oil Gloom	violence	Massive recession increased societal control
Peak Oil Gloom	violence	People living in climate of fear. Protection of property & possessions major concern in life
Peak Oil Gloom	violence	Oil scarcity causing pirating & criminal increase
Peak Oil Gloom	violence	war
Peak Oil Gloom	violence	Strikes, public protest, short term governments
Peak Oil Gloom	violence	More resource wars globally & now occurring in UK
Peak Oil Gloom	violence	Faster social breakdown
Peak Oil Gloom	violence	Austerity measures imposed by (possibly military) government
Peak Oil Gloom	violence	Mobilization of the military to control the population (as in Foot &

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		mouth times)
Peak Oil Gloom	violence	Government becomes more intrusive & dictatorial Theft of oil from hospitals increases & puts patients at risk as rationing takes hold
Peak Oil Gloom	violence	
Peak Oil Gloom	violence	theft
Techno-fix	violence	Robots control
Techno-fix	violence	war
Techno-fix	violence	War without end
Techno-fix	violence	Russia annexes EU
Techno-fix	violence	Possible social conflict Catastrophe can be creative if we are open to the idea. (Move to other segment?)
Climate Change Chaos		
Climate Change Chaos		Credit crunch * car sharing * people not able to get to work * longer journeys by public transport
Peak Oil Gloom		People in Africa will get to eat their own food (export of grain for our animals & us will stop)
Peak Oil Gloom		Focus on transition & sharing
Peak Oil Gloom		More holidays abroad
Peak Oil Gloom		People do start buying smaller cars and driving less
Techno-fix		Cheap solar electric panels
Techno-fix		Garbage is our saviour
Techno-fix		We will use renewables for all our energy
Techno-fix		Desalination plants
Techno-fix		Cars run on air and / or water
Techno-fix		100 mpg car invented
Techno-fix		Carbon capturing
Techno-fix		Lots of windmills all over the countryside Kids take control of more communications in computers but never go outside
Techno-fix		Ecohousing
Techno-fix		New innovative solutions, creative genius more latent in people
Techno-fix		Use renewable sources of electricity Tecnolical & scientific advances using magnetic power & nuclear power. More advances in space technology
Techno-fix		Bigger aeroplanes
Techno-fix		3 rd runway at Heathrow so that we stay economically
Techno-fix		Grants for home windmills People accept pharmaceuticals selling drugs to counter obesity etc. Buy/consume more food & more drugs
Techno-fix		Technology will improve
Techno-fix		More computerized society reliant on technology Cost of renewable structures become cheaper and economically viable
Techno-fix		My Father will have beautifully designed unobtrusive recycling bins in his stylish home & still worry about gloomy peak oil reports in the Times
Techno-fix		

IX. Sample Profiles

30 shortest descriptions followed by a series of longer ones:

CAT graduate

Muslim Community

Organic gardener

Structural Engineer

Local Home Educator, Gardener

Self-builder and avid recycler

chair of Manx Organic Network

University Lecturer, geography

Local organic vegetable farmer

Sustainable buildings consultant

School Governor, environmentalist

Permaculture veteran, tree grower

Gardener, failed anarchist, parent

Busy but keen mother of small twins

Electrician / renewable installations

Works for the Community Legal Service.

Eco worrier, allotment slave, pacifist

environmental activist and youth worker

Keen salvager, plastic avoider, cyclist

Allotment master, budding archaeologist

Local Farmer, Soil Association Inspector

Local counsellor, on sustainability panel

Web guru, opera diva, supermarket avoider

Loves horses, reflexologist, troublemaker

Organic gardener, permaculturist, linguist

Involvement in eco-homes project, designer.

east devon parliamentary candidate lib dems

Urban Conservationist working for Groundwork

Involved in local Friends of the Earth group

UK now. Previously Australia self-sufficient.

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...grew up as "wild child", morphed into critical thinker, spiritualist, nature nut, entrepreneur, student of personal and cultural transformation.

Served engineering apprenticeship at Fords, Dagenham. Worked I motor vehicle engineering/assessor in insurance industry through 80's & 90's. Spent 8 years as writer/performer. Never been comfortable with ostentatious materialism. Livid at the waste in our society (material; financial & human potential) I am DLA for RNLI, on local allotment committee. Employed by dioceses of Chelmsford & Fire Service in Essex. Have been working as a Community Development Worker for the last 8 years, both in Devon and Bristol. Have always been an environmentalist but discovered a new passion on first reading about peak oil 4 years ago.

Degree in Economics and a PGCE. 25year career in the City of London largely with a prime international bank as a relationship manager with blue chip companies. An accredited career/executive coach specialising in transition and leadership. A longstanding interest in the natural environment.

Man of Kent. Ex Royal Engineer and Gulf war veteran (Desert Storm 1991). Moved to town after leaving the army and have lived here for 13 years. Married with two sons. Rugby player (probably not that relevant). Land surveyor and geomatics specialist for a Kent based firm. Basically I measure, land, buildings, roads the world even! and represent it on plan for use by, developers, architects, civil engineers, govt agencies consultants etc. I also was a college lecturer in construction for a while. Historically have always had an interest in environmental issues. However I had had little motivation to get directly involved save for supporting the campaign against the Newbury Bypass (Used to live in the area whilst in the army and know well some of the towns on the mulling list in that area). As a result of meeting, through a permaculturist friend, a number of local people concerned about peak oil and climate change issues WEAG was formed. Inspired by the EDAP at Kinsale and driven by Peak oil and climate change concerns we set out to raise awareness of both these issues. We have had some success, but by following the EDAP Idea to the Transition Town model we have been further inspired to carry on, utilising the great resources of [town] to ensure its prosperous future. We have been mulling this since attending the conference in May, personally to increase my awareness, I have researched the issues and attended an Introduction to Permaculture course. Through my own experiences I have seen the 'race for oil' and smelt the burning wells. Witnessed the effects that climate change can and will have. Through my work I see the greed for profit whilst squandering fantastic resources. I like where I live and I would like my children to grow up in a community that is resilient and prosperous, I feel we need to plan and act now to enable our community to do this in a lower energy future.

I became aware that, without realising it, I had begun to live my life according to principles I then discovered were reflected in those of permaculture. It occurred to me that the natural progression would be for me to begin looking more outwardly so I became a member of [local] Environmental Action Group in order to pursue ideas of sustainability and environmental awareness beyond the personal level. Some members of the group discovered the concept of Transition Towns and introduced the idea to the rest of us. I was very excited to discover the ethos behind Transition Towns as it encapsulates so many of my own beliefs. I am particularly enthused by the positive outlook that Transition Towns take on. I had become so weary of the negative stance portrayed by those aware of the issues of climate change and peak oil and resigned to a gloomy fate or wasting energy squabbling over details and also of those in denial. I do not want to be one of those people who buries their head in the sand or someone that sits inertly complaining about how bad things are going to get or already are. I am motivated by the thought that step by step with positive action the future that I would wish for my children can be worked towards and finally attained. I believe that if there is something that we want it is within our power to manifest its creation.

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...has been in the Building and Plumbing Industry for 30 years; he has a passion for his clients and their projects and provides a comprehensive knowledge of sustainable housing ESD – Ecological Sustainable Development. Having been a manager of small hardware stores and area manager for plumbing supplies business it was found that there are numerous gaps within the Developer/Builder/Plumber/Council/Client network. Jeff concentrated in the last 10 years on Retrofitting Waste Management system- providing cost effective simplistic ways to save water, reuse water, and educate the community with disciplines and smarter ways to save the environment. Jeff has focused on improving the efficiencies of septic systems and waste water treatment systems. Over 12 years involvement with Water Wise education, delivered over 60 trade information nights across Queensland and Northern NSW, presented at University, Engineers conferences and Plumbing Inspector conferences and a reference point for Grey Water introduction into Queensland. More recently he created a National Environmental Solutions Division for a National Plumbing Business, with Business Development Managers in All States and 3 Trainers to educate the Builder/ Plumber and Industry. A National Call Centre and Website supported the introductions in Victoria (5 star), NSW Basix's, Western Australia-Save Water and more recently Queensland with the changes to the Building Code and introduction to Sustainable Housing. Jeff was a contributor to a number of Queensland Sustainable Houses with Gold Coast City Council-Heritage Pacific- IH2, Brisbane City Council-Natural Lifestyle Homes Seventeen Mile Rocks. Townsville City Council- Fairfield Waters Sustainable House, Gold Coast – the Ecovillage at Currumbin Development. Jeff was the start up Project Manager for Fieldforcd Services – operation the Qld Government / 21 SEQ Councils, Home Water Wise Service retrofitting over 110,000 SEQ homes in 12 months. Jeff is also a Business Water Efficiency advisor for Regional Queensland.

Kent, England: Born in Hastings 1964. Moved to [locale] 1977. Went to SWNS now community college [town]. Joined BT in 1981 to present. Worked in telephony communications maintenance, PC and server support and computer network design and implementation.

My interest in the environment started maybe 20 years ago when I borrowed from the library, 'Permaculture' by Bill Mollison. I thought wouldnt it be great to have a forest garden with only edible or medicinal plants growing. Sadly I did not follow this up and still mow the lawn - albeit with solar power.

About 2 years ago I bought an electric bike from eBay. I ended up buying about 15 and selling them at cost to friends. To date mine has covered 1200 miles locally. I then wondered if I could run it from the sun. I bought a small solar panel - it took 3 days to charge the bike so I invested further and ended up with a solar system that not only runs the bikes but the garden and my shed as well. I have built 3 wind turbines from scrap - sold the first 2 to finance the 3rd which to date is the only wind turbine flying in [town].

I tried to run the house on the solar set up but quickly found that the energy produced - although significant was nowhere near what the house currently consumes. This led me to think that - if solar and wind cannot run my house with my current consumption - what are we to do when the grid goes down.

Last week I read Richard Heinberg's book the party's over and it scared me because I then realised from experience that renewables are not going to sustain our current energy consumption but may in the near future be the only energy that we have available.

I have budgeted for more PV, solar water heating, rainwater harvesting, insulation, log burner and a composting toilet. By early 2008 I intend to have these up and running as a technology demonstrator - and to look to going off grid with aggressive conservation measures. I expect the cost to be in the region of £10k and get payback quite soon if utility bills keep on rising.

Retired BT Manager with expertise in Business Process Engineering and Strategic Planning for Telecoms and Computer Networks. Strong personal interest in the sustainability of local communities, with a particular interest in the use of computer networking technology to manage the supply of food and energy from local sources.

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X. The British National Party (BNP) position on Peak Oil

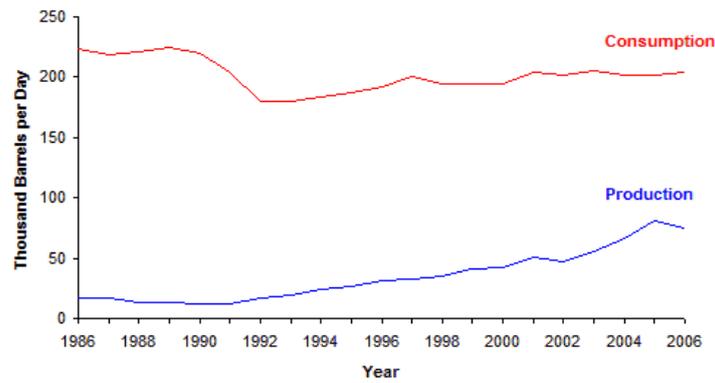
Apocalypse?	Opportunity?
Stranded	Travel and transport
Famine	Centralised society
Poor	Environment
War	Health
Pestilence	Family life
Vulnerable	The new economy (clean energy)
	Small businesses benefit
	Differences (localisation)
	Global warming stop
A darker, hunger filled, more dangerous existence. That is one possible view of life after oil, but does it really have to be this bad? Could there be some upside, some silver lining on this particularly gloomy looking cloud?	Change is inevitable but one person's apocalyptic view of the same situation could be interpreted as an opportunity by another. Britons are resourceful, innovative and can be pretty bloody minded in a crisis. We can knuckle down, roll up our sleeves and get on with life even without all the labour saving devices, the shopping malls and the twice year trips to the Med or Florida.

Table 1: The BNP's dystopian and utopian view of a post-Peak Oil world
<http://www.bnp.org.uk/peakoil> (accessed 25/8/2008)

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XI. Cuba: A case study on the impact of 'Peak Oil'?

Cuba's Oil Production and Consumption



Source: EIA International Energy Annual; Short Term Energy Outlook

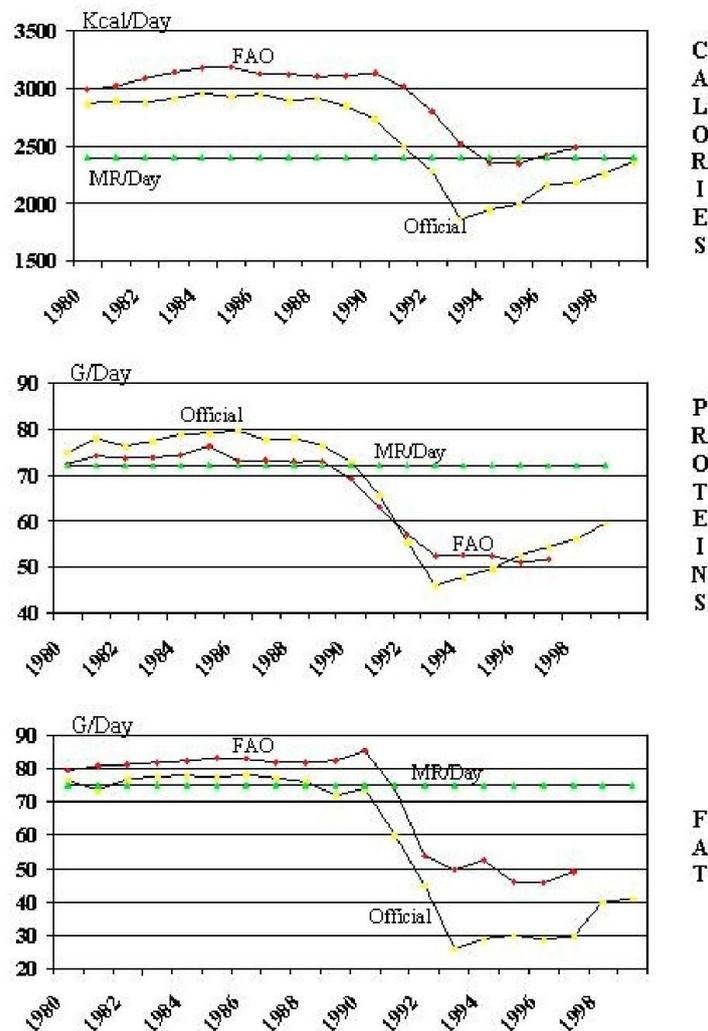


Figure 1: Daily per capita intake of calories, proteins, and fat, and FAO's minimum requirements (MR), 1980-1999.(Alvarez, 2004)

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Table 1. Selected Cuban Economic Indicators, 1989-2000
(*in million pesos unless otherwise indicated*)

	1989	1993	1994	1995	1996	1997	1998	1999	2000	2000/ 1989 (%)
Macroeconomic										
GDP at constant prices	19578	12768	12868	13185	14218	14572	14754	15674	16556	-15.4
GDP growth rate (%)	1.5	-14.9	0.7	2.5	7.8	2.5	1.2	6.2	5.6	—
GDP per capita (at constant prices)	1851	1172	1175	1201	1290	1317	1327	1405	1478	-20.5
GDP/capita growth rate	1.0	-15.4	0.3	2.2	7.4	2.1	0.8	5.9	5.3	—
Gross domestic investment/GDP (%)	26.7	5.4	5.5	7.2	8.2	9.5	10.9	10.4	10.8	—
Monetary liquidity/GDP (%)	21.6	73.2	51.8	42.6	41.8	41.1	40.6	38.8	38.0	—
Budget balance/GDP (%)	-7.3	-33.5	-7.4	-3.5	-2.5	-2.0	-2.3	-2.4	-2.4	—
External Sector										
Merchandise exports	5400	1137	1381	1507	1866	1819	1512	1496	1676	-69.0
Merchandise imports	8140	1984	2353	2883	3659	3987	4181	4349	4849	-40.7
Foreign debt (US \$ billion)	6.2	8.8	9.1	10.5	10.5	10.2	11.2	11.1	11.0	77.4
Physical Production										
Sugar cane (000 metric tons)	81000	43700	43200	33600	41300	38900	32800	34000	36400	-55.1
Fresh vegetables (000 metric tons)	610	393	322	402	494	472	643	1015	1461	139.5
Cereals (000 metric tons)	584	226	300	304	473	545	391	554	509	-12.8
Citrus (000 metric tons)	1016	645	505	564	662	808	713	710	898	-11.6
Fish catch (000 metric tons)	192	94	88	102	121	136	134	145	162	-15.6
Milk (000 metric tons)	762	328	296	268	273	270	272	291	305	-60.0
Sugar (000 metric tons)	7579	4246	4017	3259	4259	4318	3291	3875	4057	-46.4
Nickel (000 metric tons)	46.6	30.2	27.0	42.7	53.7	61.6	67.7	66.5	71.4	53.2
Oil (000 metric tons)	718	1108	1299	1471	1476	1462	1678	2136	2695	275.3
Electricity (billion kwh)	15.2	11.0	12.0	12.5	13.2	14.1	14.1	14.5	15.0	-1.3
Cement (000 metric tons)	3759	1049	1085	1456	1438	1701	1713	1785	1633	-56.6
Steel (000 metric tons)	314	98	148	203	229	335	283	303	327	4.1
Paper (000 metric tons)	102.0	11.0	17.0	12.1	11.4	7.9	7.3	6.1	8.6	-91.6
Beer (000 hectoliters)	3333	1304	1201	1330	1504	1639	1759	2009	2136	-35.9
Rum (000 hectoliters)	514	388	592	529	476	499	540	603	592	15.2
Cigarettes (billion units)	16.5	12.2	14.5	12.6	10.7	10.7	11.7	13.4	12.1	-26.7
Cigars (000 units)	304	208	186	192	194	215	264	285	241	-20.7

Sources: 1989: Comité Estatal de Estadísticas, *Anuario Estadístico de Cuba 1989* (La Habana: Comité Estatal de Estadísticas, 1991), and author's extrapolations.

1993-2000: Oficina Nacional de Estadísticas, *Anuario Estadístico de Cuba 1996* (La Habana, 1998), *Anuario Estadístico de Cuba 1999* (La Habana, 2000), and *Anuario Estadístico de Cuba 2000* (La Habana, 2001).

Table 2: Selected Cuban Economic Indicators, 1989-2000 (Pérez-López, 2002)

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— THE FOOTPRINT AND HUMAN DEVELOPMENT —

Sustainable development is a commitment to "improving the quality of human life while living within the carrying capacity of supporting ecosystems" (IUCN *et al.*, 1991).

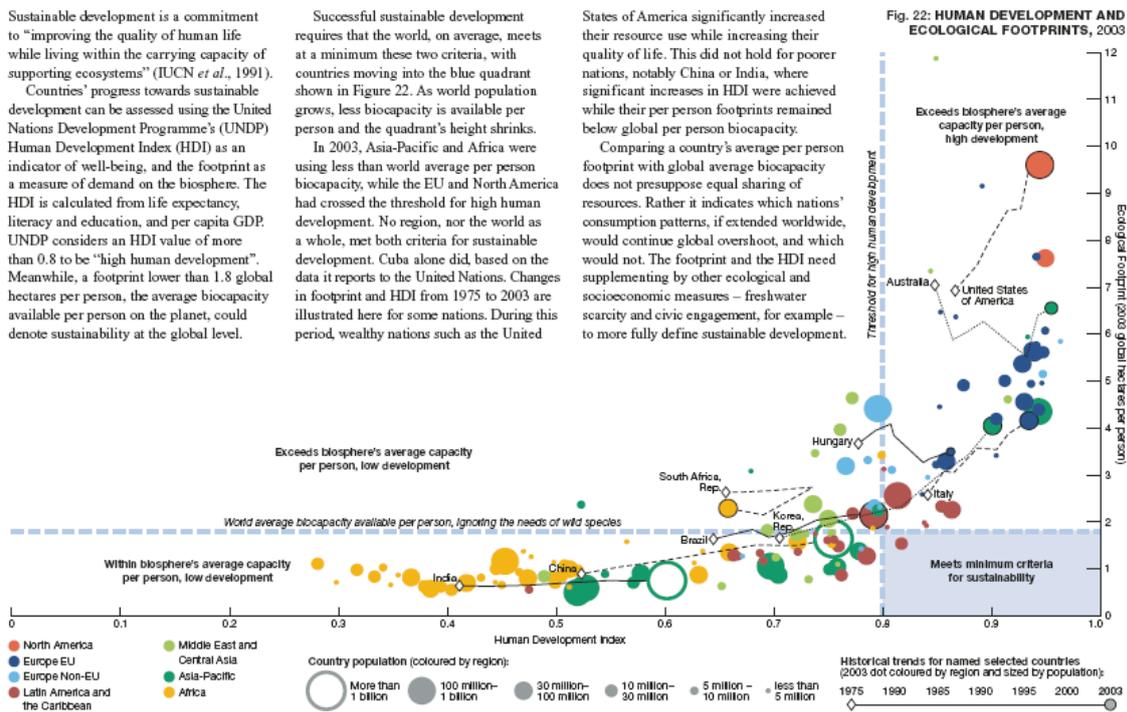
Countries' progress towards sustainable development can be assessed using the United Nations Development Programme's (UNDP) Human Development Index (HDI) as an indicator of well-being, and the footprint as a measure of demand on the biosphere. The HDI is calculated from life expectancy, literacy and education, and per capita GDP. UNDP considers an HDI value of more than 0.8 to be "high human development". Meanwhile, a footprint lower than 1.8 global hectares per person, the average biocapacity available per person on the planet, could denote sustainability at the global level.

Successful sustainable development requires that the world, on average, meets at a minimum these two criteria, with countries moving into the blue quadrant shown in Figure 22. As world population grows, less biocapacity is available per person and the quadrant's height shrinks.

In 2003, Asia-Pacific and Africa were using less than world average per person biocapacity, while the EU and North America had crossed the threshold for high human development. No region, nor the world as a whole, met both criteria for sustainable development. Cuba alone did, based on the data it reports to the United Nations. Changes in footprint and HDI from 1975 to 2003 are illustrated here for some nations. During this period, wealthy nations such as the United

States of America significantly increased their resource use while increasing their quality of life. This did not hold for poorer nations, notably China or India, where significant increases in HDI were achieved while their per person footprints remained below global per person biocapacity.

Comparing a country's average per person footprint with global average biocapacity does not presuppose equal sharing of resources. Rather it indicates which nations' consumption patterns, if extended worldwide, would continue global overshoot, and which would not. The footprint and the HDI need supplementing by other ecological and socioeconomic measures – freshwater scarcity and civic engagement, for example – to more fully define sustainable development.



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Figure 2: Human Development and Ecological Footprints, 2006 (WWF International, 2006). Cuba was the only country which met the criteria of 'ecologically sustainable'.

XII. Endnotes

¹ This is the winning limerick in the 'Life After Oil' limerick competition, in association with Schumacher College, which the judges "admired for its consistency to the limerick form as well as for its fluency". The prize was a place on the 'Life After Oil' course held at Schumacher College on 11th October 2006. Ben's participation in the conference was the genesis for establishing the Transition Network with Rob Hopkins.

² at which I had the good fortune to participate in a workshop with Dennis Meadows and hear the then Green MP Eamon Ryan TD, whose subsequent appointment as Ireland's Energy Minister has restored my faith in politics.

³ Ireland might be an exception as I was pleasantly surprised recently to have a Dublin taxi driver explain *Peak Oil* to me on my way to the airport to return to London. I haven't met any London taxi drivers as well informed. The lack of awareness in the UK I've come to learn with particular disquiet.

⁴ <http://www.lse.ac.uk/collections/miliband/200708LectureSeries.htm>

⁵ Past, Present and Future of Oil, Lord John Brown, public lecture at the LSE, November 13th 2007

http://richmedia.lse.ac.uk/publicLecturesAndEvents/20071113_1830_pastPresentAndFutureOfOil.mp3

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⁶ *Oil, War and Geopolitics: the struggle over what remains*, Professor Michael Klare, public lecture delivered at the LSE, January 9th 2008
http://richmedia.lse.ac.uk/publicLecturesAndEvents/20080109_1830_oilWarAndGeopoliticsThestruggleOverWhatRemains.mp3

⁷ *Climate Change, Energy and the Way Ahead*, Lord Professor Nicholas Stern, public lecture delivered at the LSE, February 27th 2008
http://richmedia.lse.ac.uk/publicLecturesAndEvents/20080227_1830_climateChangeEnergyAndTheWayAhead.mp3

⁸ *Key Elements of a Global Deal on Climate Change*, Lord Professor Stern, press conference given at the LSE, April 30th 2008
<http://www.lse.ac.uk/collections/pressAndInformationOffice/newsAndEvents/archives/2008/globaldeal.htm>

⁹ See Appendix for list

¹⁰ See Appendix for the text of the resolution

¹¹ The Hirsch Report (2005), *Peaking of World Oil Production: Impacts, Mitigation, and Risk Management*
[http://www.netl.doe.gov/publications/others/pdf/Oil_Peaking_NETL.pdf accessed 25/8/2008]

¹² The Stern Report (2007), *Stern Review on the Economics of Climate Change*

¹³ Ecotowns: for and against, The Times
[<http://www.timesonline.co.uk/tol/news/environment/article4115568.ece> accessed 25/8/2008]

¹⁴ While the publication date of the book is 1980, the chapter 'Towards an ecological society' appeared earlier as a pamphlet and is dated in the book as 1974

¹⁵ www.energyscenariosireland.com [accessed 25/8/08]

¹⁶ <http://dynamiccities.squarespace.com/scenarioplanning> [accessed 25/8/08]

¹⁷ The title of Chapter 8 of the *Transition Handbook*

¹⁸ *Animate Earth: Science, Intuition, And Gaia* (2006) Chelsea Green Publishing

¹⁹ *Nature's Due: Healing Our Fragmented Culture* (2007) Floris

²⁰ *The Hidden Connections: a science for sustainable living* (2004) Anchor Books

²¹ *Leadership and the New Science: Discovering Order in a Chaotic World* (2006) Berrett-Koehler

²² *The Limits to Growth: A Report for the Club of Rome's Project on the Predicament of Mankind* (1974) Universe Books; *Beyond the Limits: Confronting Global Collapse, Envisioning a Sustainable Future* (1992) Chelsea Green Pub.; *Limits to growth: The 30-year Update* (2004) Chelsea Green Pub.

²³ *A Pattern Language: Towns, Buildings, Construction* (Center for Environmental Structure Series) (1978) Oxford University Press Inc, USA

²⁴ *Places of the Soul: Architecture and Environmental Design as a Healing Art* (2004) Published by Architectural Press

²⁵ *The Hand-sculpted House: A Philosophical and Practical Guide to Building a Cob Cottage* (2002) Chelsea Green Pub. Co.

²⁶ The word 'permaculture' was coined by Australians Bill Mollison and David Holmgren in the mid-1970s and is a portmanteau of permanent agriculture as well as permanent culture. Holmgren defined it recently (2004) as "Consciously designed landscapes which

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mimic the patterns and relationships found in nature, while yielding an abundance of food, fibre, and energy for provision of local needs.”

²⁷ with David Holmgren, *Permaculture One: A Perennial Agriculture for Human Settlements* (1979) Tagari Publications, Australia

²⁸ *Permaculture: Principles & Pathways Beyond Sustainability* (2002) Holmgren Design Services

²⁹ See Best (2000) for an explanation of the distinction between *eu-topos* or good place as opposed to *u-topos* or no place

³⁰ *Small is Beautiful: A Study of Economics as If People Mattered* (1973) Blond and Briggs

³¹ *Deschooling society* (1971) Calder and Boyars

³² *Human Scale* (1980) Secker & Warburg

³³ The Foundation for the Economics of Sustainability

³⁴ *Short Circuit: Strengthening Local Economies for Security in an Unstable World* (1996) and *The Growth Illusion: How Economic Growth Has Enriched the Few, Impoverished the Many, and Endangered the Planet* (1998) New Society Publishers

³⁵ *An Essay on the Principle of Population* (1817)

³⁶ *Mutual aid, a factor of evolution* (1915) Heinemann

³⁷ *News from nowhere, or, An epoch of rest : being some chapters from a utopian romance* (1896) Forgotten Books

³⁸ The only political party in the UK actively engaging its members in a dialogue on ‘Peak Oil’ is the British National Party, see appendix X. Their growing involvement in Transition projects prompted the addition of a commitment to the UN Declaration on Human Rights to the application process.

³⁹ Association for the Study of Peak Oil & Gas, the author is a director of the Irish chapter with ASPO’s founder, Dr. Colin Campbell.

⁴⁰ In deference to the radical left’s critique of the apolitical nature of the Transition movement, its not being radical enough, and its unwillingness to openly oppose the ‘institutions of capitalism that prevent society from a real transition’. *The Rocky Road to a Real Transition: The Transition Towns movement and what it means for social change* (Chatterton & Cutler, 2008)

⁴¹ The only documentation I could retrieve on their much discussed ‘Apollo Project’ is a report prepared by U.S. Representative Jay Inslee, WA, which can be downloaded at www.house.gov/inslee/docs/pdfs/inslee_apollo.pdf and which I suspect Hopkins would classify under ‘Techno-fix’ in his future scenarios.