



THE TRANSITION HANDBOOK

From oil dependency to local resilience



Rob Hopkins

Founder of the Transition movement

**“If your town is not yet a Transition Town, here is the guidance for making it one.
We have little time, and much to accomplish.” — Richard Heinberg, author of *Peak Everything***

The Transition Handbook - free edit version

Welcome to a rather exciting new venture for the Transition movement. Since the Transition Handbook was published in March 2008, it has been a very popular guide to the idea, now being published in a number of languages as the Transition movement spreads around the world. As these ideas are tried and tested in many cultures, contexts and different scales, the idea is to invite those who have actually been experimenting with it on the ground to rewrite the book.

We invite you to contribute your wisdom, experience, successes, failures and insights to the second edition of [The Transition Handbook](#), writing on the sections you feel you have insights to add. So, peak oil buffs and systems thinkers will be drawn to Part One, those with a background in psychology, addiction and the psychology of change to Part Two, and those with practical experience with active Transition initiatives to Part Three. Although I ([Rob Hopkins](#)) retain the editorial overview, the idea is that this becomes a truly collaborative venture, a true reflection of the current state of this extraordinary movement. So, get writing. Let's write the most seminal and most useful book in print for a world in Transition. I look forward to reading your thoughts....

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Introduction

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Central to this book is the concept of resilience - familiar to ecologists, but less so to the rest of us. Resilience refers to the ability of a system, from individual people to whole economies, to hold together and maintain their ability to function in the face of change and shocks from the outside. This book, *The Transition Handbook*, argues that in our current (and long overdue) efforts to drastically cut carbon emissions, we must also give equal importance to the building, or more accurately to the rebuilding, of resilience. Indeed, I will argue that cutting emissions without resilience-building is ultimately futile. But what does resilience actually look like?

In 1990 I visited the Hunza Valley in northern Pakistan, which until the opening of the Karakorum Highway in 1978 had been almost completely cut off from the outside world. When I visited I knew nothing about permaculture, of the concept of resilience, or even a great deal about food, farming or the environment, but I knew when I arrived that this was an extraordinary place.

I found a quote in a book which I read as I travelled up towards Hunza (I no longer remember the title): "If on Earth there is a garden of bliss, it is this, it is this, it is this." They were words that replayed in my head many times over my two weeks in Hunza. Here was a society which lived within its limits and had evolved a dazzlingly sophisticated yet simple way of doing so. All the waste, including human waste, was carefully composted and returned to the land. The terraces which had been built into the mountainsides over centuries were irrigated through a network of channels that brought mineral-rich water from the glacier above down to the fields with astonishing precision.

Apricot trees were everywhere, as well as cherry, apple, almond and other fruit and nut trees. Around and beneath the trees grew potatoes, barley, wheat and other vegetables. The fields were orderly but not regimented. Plants grew in small blocks, rather than in huge monocultures. Being on the side of a mountain, I invariably had to walk up and down hills a great deal, and soon began to feel some of the fitness for which the people of Hunza are famed. The paths were lined with dry stone walls, and were designed for people and animals, not for cars.

People always seemed to have time to stop and talk to each other and spend time with the children who ran barefoot and dusty through the fields. Apricots were harvested and spread out to dry on the rooftops of the houses, a dazzling sight in the bright mountain sun. Buildings were built from locally-made mud bricks, warm in the winter and cool in the summer. And there was always the majestic splendour of the mountains towering above. Hunza is quite simply the most beautiful, tranquil, happy and abundant place I have ever visited, before or since.

At that time I was an artist, and spent my days with sketchbook in hand, wandering the fields, lanes and terraces, dazzled by the light and colour, spending many hours just working on one drawing in an ultimately futile attempt to try to represent the beauty of what was in front of me.

If (at that time) Hunza were to be cut off from the world and the global economy's highways of

trucks packed with goods, it would have managed fine. If there were a global economic downturn, or even a collapse, it would have had little impact on the Hunza Valley. The people were resilient too, happy, healthy and with a strong sense of community.

I do not intend to romanticise or idealise it, but there was something I caught a glimpse of when I was in Hunza that resonated with a deep genetic memory somewhere within me. I grew up in England when the fossil fuel party was in full swing, in a culture ceaselessly trying to erase all traces of resilience and rubbishing the very idea at every opportunity, portraying country people as stupid, the traditional as 'old-fashioned' and growth and 'progress' as inevitable. In this remote valley I felt a yearning for something I couldn't quite put my finger on but which I now see as being resilience: a culture based on its ability to function indefinitely and to live within its limits, and able to thrive for having done so.

However, even then, in 1990, things were starting to change. When I was there, empty sacks of nitrogen fertiliser were visible in the corners of some of the fields. Sacks of cement were appearing, as were refined sugary foods and fizzy drinks. The process of undermining that resilience had begun in earnest, as has happened in most parts of the world and continues at a frantic pace. I haven't been back since, and so cannot offer an update, but I would be very surprised if the direction of change had been focused on the preservation of the Valley's ability to support itself. Indeed, from the amount of adverts on the internet for places selling 'Hunza produce', it appears to have moved towards being an export-driven economy.

Forces are converging very fast that make whether we choose to retain and enhance resilience, rather than just let it crumble, much more than just a philosophical discussion. It is no longer just a case of whether we should be questioning the forces of economic globalisation because they are unjust, inequitable or a rapacious destroyer of environments and cultures. Instead it is about looking at the Achilles heel of economic globalisation, one from which there is no protection other than resilience: its degree of oil dependency. The very notion of economic globalisation was only made possible by cheap liquid fossil fuels, and there is no adequate substitute for those on the scale we use them. The move towards more localised energy-efficient and productive living arrangements is not a choice; it is an inevitable direction for humanity.

The Transition Handbook is more than just a book of problems and ideas. It is about solutions, and about the Transition model, which I think may turn out to be the foundation for one of the most important social, political and cultural movements of the 21st century. I'd like to give you a brief taste of it.

It's a cool March evening in the small town of Totnes in Devon. Around 160 people are filling the seats of St John's Church for an evening event called 'Local Money, Local Skills, Local Power'. The event is run by Transition Town Totnes (TTT), the UK's first Transition Initiative, and the evening itself is something of an achievement: 160 people turning out to an event about economics, usually a subject guaranteed to stick people to their sofas tighter than superglue.

Each person, on arrival, is given a Totnes Pound, one of 300 notes produced by TTT as a pilot to see how a printed currency might be received in the town. One side is a facsimile of an 1810 Totnes banknote, from a time when Totnes banks issued their own currency, spotted four weeks before on the wall of a local filmmaker. As I begin my introduction to the evening

and to the speaker, I invite the audience to each wave their Pounds in the air - it is quite a sight. 160 people, Pound in hand, beginning the powerful journey of telling new stories about money, and also about the future, its possibilities and their interdependence as a community.

The telling of stories is central to this book. You could think of it as being a story in itself: the story of the emergence of the Transition movement, of the most important research project taking place in the UK at the moment. It goes deeper than that, though. Our culture is underpinned by various stories, cultural myths that we all take for granted: that the future will be wealthier than the present, that economic growth can continue indefinitely, that we have become such an individualistic society that any common goals are unthinkable, that possessions can overcome your dis-integration and lack of voice to make you happy, and that economic globalisation is an inevitable process to which we have all given our consent. As we shall see, these are all stories that are profoundly misleading and indeed positively harmful for the challenges we find ourselves facing faster than we think. We need new stories that paint new possibilities, that tell us who we really are and can be together, that reposition us in relation to the non-human life around us, that entice us to view the changes ahead with anticipation of the possibilities they hold, and that will, ultimately, give us the strength to emerge at the other end into a new, but more nourishing, world.

As I stood at the front of that hall, watching the room full of laughing, twinkling people, waving their Totnes Pounds, I felt very moved. There is a power here, I thought, which has remained largely untapped. Surely when we think about peak oil and climate change we should feel horrified, afraid, overwhelmed? Yet here was a room full of people who were positively elated, yet were also looking the twin challenges of peak oil and climate change square in the face.

What might environmental campaigning look like if it strove to generate this sense of elation, rather than the guilt, anger and horror that most campaigning invokes? What might it look like if it strove to inspire, enthuse, and focus on possibilities rather than probabilities? We don't yet know for sure, but the Transition movement is an attempt to design abundant pathways down from the oil peak, to generate new stories about what might be waiting for us at the end of our descent, and to put resilience-building back at the heart of any plans we make for the future.

Transition Initiatives are not the only response to peak oil and climate change; any coherent national response will also need government and business responses at all levels. However, unless we can create this sense of anticipation, elation and a collective call to adventure on a wider scale, any government responses will be doomed to failure, or will need to battle protractedly against the will or indecisions of the people. Imagine if there were a way of creating that sense of positive engagement and new storytelling on a settlement-wide, even a nationwide scale. This book, even more than the first edition, is an exploration of that potential, an immersion in the possibilities of applied optimism, and an introduction to a movement growing so fast that by the time you read this book it will be larger still.

The time for seeing globalisation as an invincible and unassailable behemoth, or localisation as some kind of lifestyle choice, is over. The end of the Age of Cheap Oil is rapidly coming upon us, and life will radically change, whether we want it to or not. This book represents a new way of looking at what our future might hold, arguing that by taking a proactive response rather than a reactive one, we can still shape and form that future, within the rapidly changing energy context, in such a way that it ends up preferable to the present.

Rebuilding local agriculture and food production, localising energy production, wasting no people, rethinking healthcare, rediscovering local building materials in the context of zero energy building, rethinking how we manage waste, all build resilience and offer the potential of an extraordinary renaissance - economic, cultural and spiritual. I am not afraid of a world with less consumerism, less 'stuff' and no economic growth, as we've known it. Indeed, I am far more frightened of the opposite: that the process which took fertiliser sacks to the most fertile fields I will probably ever stand in continues, reducing the ability of communities to support themselves beyond the brief, transitory historical interlude when industry was able to turn natural gas into a fertiliser and when the car was king.

This is not a book about how dreadful the future could be; rather it is an invitation to join the increasingly whole people in hundreds of communities around the world who are taking the steps towards making a nourishing and abundant future a reality.

Rob Hopkins

Dartington, 2008

Part 1: The Head - Why peak oil and climate change mean that small is inevitable

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"It is quite likely that the time interval before the global peak occurs will be briefer than the period required for societies to adapt themselves painlessly to a different energy regime." - Richard Heinberg

"Any intelligent fool can make things bigger, more complex, and more violent. It takes a touch of genius - and a lot of courage - to move in the opposite direction." - Albert Einstein

"I feel it is my duty, given the social and economic chaos peak oil will undoubtedly produce, to stick very closely to defensible assumptions. If you ask me whether I personally think we'll make it to 2010, my answer is *probably not*. Random factors and Murphy's Law more or less rule out everything running smoothly. This however is not analysis, but gut feel and hunch. On the hunch basis 2008 would be my answer, but 2010 my analysis." - Chris Skrebowski

"It is [free] market fundamentalism that has rendered the global capitalist system unsound and unsustainable... market fundamentalism is today a greater threat to open society than any totalitarian ideology." - George Soros, legendary billionaire Wall Street marketeer from *The Crisis of Global Capitalism, Open Society Endangered*, 1998

"The hoopla about *Earth Day*, like the pious rhetoric of fast-talking solar contractors and patent-hungry *ecological* inventors, conceal the all-important fact that solar energy, wind power, organic agriculture, holistic health, and *voluntary simplicity* will alter very little in our grotesque imbalance with nature if they leave the patriarchal family, the multinational corporation, the bureaucratic and centralized political structure, and the property system untouched." - Murray Bookchin

"[Man, that] fickle, erratic, dangerous creature [whose] restless mind would try all paths, all horrors, all betrayals... believe all things and believe nothing... kill for shadowy ideas more ferociously than other creatures kill for food, then, in a generation or less, forget what bloody dream had so obsessed him." - Loren Eiseley, *MAN: THE LETHAL FACTOR*

We live in momentous times: times when change is accelerating, and when the horror of what could happen if we do nothing and the brilliance of what we could achieve if we act can both, at times, be overwhelming. This book is underpinned by one simple premise: that the end of what we might call The Age of Cheap Oil (which lasted from 1859 until the present) is near at hand, and that for a society utterly dependent on it, this means enormous change; but that the future with less oil could be preferable to the present, if we plan sufficiently in advance with imagination and creativity.

This first part is called 'The Head' because it focuses on the concepts and issues central to the case that we need to be preparing for a future which looks very different from the present. It begins with an exploration of peak oil and climate change, the twin drivers of the Transition concept and the two greatest challenges facing humanity at the beginning of the 21st century (heading a long field of competitors). I will attempt to cover them in as accessible a way as

possible. It goes on to set out the nature of the challenges they present, and why they so urgently necessitate our rethinking a number of very basic assumptions as well as the scale at which we operate. Peak oil is dealt with first, and in more detail, because the likelihood is that you are less familiar with it. While climate change features widely in the media, peak oil has yet to register as a major issue, although the recent steep rises in prices are starting to change this. It is important to get up to speed on an issue of such central importance to our future.

I will go on to look at what kind of a world we could end up with if we don't respond imaginatively to these dual challenges, and then set out the thinking and the concepts underpinning Transition Initiatives. These initiatives are an emerging response: in essence, a powerful carbon reduction 'technology' and a new way of looking at responding to climate change and peak oil. They will be explored in depth as this book goes on.

Chapter 1: Peak oil and climate change - The two great oversights of our times

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What is peak oil?: why it is not just the last drop that matters

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There are plenty of other people better qualified than myself to tell you about peak oil. I have never worked in the oil industry, am not a geologist, and other than having grown up in what is now one of the most rapidly depleting oil-producing nations in the world (the UK), I have no first-hand experience of oil production or geology. Prior to September 2004 I had never heard of the concept of peak oil, and had always assumed that oil in our economy worked in the same way as petrol in the tank of a car; that whether the engine was full or almost empty, it would run exactly the same. I thought we would potter along until some day in the distant future someone would put the very last drop of oil in their car and that would be that, a bit like the last truffula tree falling in Dr Seuss's *The Lorax*. I was later to discover that I was somewhat wide of the mark, as I started to delve deeper into this incredibly important subject.

For me, learning about peak oil has been profoundly illuminating in terms of how I see the world and the way it works: the precarious nature of what we have come to see as how a society should function, as well as elements that any community responses we develop will need to have. Don't take my word for it - read around, inform yourself. Climate change - an issue of great severity - is only one half of the story; developing an understanding of peak oil is similarly essential. Together, these two issues have been referred to as the 'Hydrocarbon Twins'. They are so intertwined, that seen in isolation, a large part of the story remains untold.

Without cheap oil, you wouldn't be reading this book now. The centralised distribution of

books would not have been feasible, and if you did have a copy, it would be one of only a very few books you had, and you would consider it a very precious possession indeed. I would not have been able to type it on my laptop, in a warm house, listening to CDs. When you really start thinking about it, it's not just this book that would not be here. Most things around you rely on cheap oil for their manufacture and transportation. Your furniture, entertainment, recreation, food, household appliances, medicines and cosmetics are all dependent on this miraculous material. This is not a criticism - it's just how it is for us all, and has been for as long as most of us can remember. It is almost impossible to imagine anything else.

It is entirely understandable how we got into this position. Oil is a remarkable substance. It was formed from prehistoric zooplankton and algae that covered the oceans 90-150 million years ago, ironically during two periods of global warming. It sank to the bottom of the ocean, was covered by sediment washed in from surrounding land, buried deeper and deeper, and over time was heated under extreme pressure by geological processes, and eventually became oil. Natural gas was formed through similar processes, but is formed more from vegetal remains or from oil that became 'overcooked' when buried too deep in the Earth's crust. One gallon of oil contains the equivalent of about 98 tons of the original surface-forming, algal matter, distilled over millennia, and which had itself collected enormous amounts of solar energy on the waves of the prehistoric ocean. It is not for nothing that fossil fuels are sometimes referred to as 'ancient sunlight'. They are astonishingly energy-dense.

I like to think of fossil fuels being like the magic potion in Asterix and Obelix books. Goscinny and Uderzo's Gaulish heroes live in the only village to hold out against Roman occupation, thanks to a magic potion brewed to a secret recipe by their druid, Getafix. The potion gives them superhuman strength and makes them invincible, much to the chagrin of Julius Caesar. Like Asterix and Obelix's magic potion, oil makes us far stronger, faster and more productive than we have ever been, enabling our society to do between 70 and 100 times more work than would be possible without it. Beginning near the moment when slavery was finally going out of style, we have lived with this potion for 150 years and, like Asterix and Obelix, have got used to thinking we will always have it, indeed we have designed our living arrangements in such a way as to be entirely dependent on it.

It is estimated that 40 litres of petrol in the tank of a car contains energy equivalent to 4 years human manual labour. It is no wonder that we in the West consume on average about 16 barrels of oil a year per capita - less than Kuwait, where they use 36 (what do they do, bathe in it?), but far more than China's two, or India's less than one. The amount of energy needed to maintain the average US citizen is the equivalent of 50 people on bicycles pedalling furiously in our back gardens day and night. We have become dependent on these pedallers - what some people refer to as 'energy slaves'. But we are, it should also be acknowledged, extremely fortunate to live at a time in history with access to amounts of energy and a range of materials, products and possibilities that our ancestors couldn't even have imagined.

Figure 1 presents one of the best researched graphic representations of what we might call the 'The Petroleum Interval', the brief interlude of 200 years where we extracted all of this amazing material from the ground and burnt it. Viewed in the historical context of thousands of years, it is a brief spike. Viewed from where we stand now, it looks like the top of a mountain.

Oil has allowed us to create extraordinary technologies, cultures and discoveries, to set foot

on the Moon and to perfect the Pop Tart. But can it go on forever? Of course not. Like any finite material, the faster we consume it, the faster it will be gone. We are like Asterix and Obelix realising, with a sinking feeling in the pit of the stomach, that the cauldron of potion they have in front of them is the last one. We can see the possibility of life without potion looming before us.

The key point here is that it is not the point when we use the last drop that matters. The moment that really matters is the peak, the moment when you realise that from that point onward there will always be less magic potion year-on-year, and that because of its increasing scarcity, it will become an increasingly expensive commodity. This year (2008), oil has for the first time broken through the \$100 a barrel ceiling. Chris Skrebowski, editor of *Petroleum Review* magazine, defines peak oil thus, "the point when further expansion of oil production becomes impossible because new production flows are fully offset by production declines". It is the midway point - the moment when half of the reserves have been used up, sometimes referred to as 'peak oil' or the 'tipping point' that is important. It is a moment of historic importance. All the way up the slope towards the peak, since Drake drilled the first oil well in Pennsylvania in 1859, demand has driven supply. The more oil the world economy needed, the more the oil industry could produce.

'Swing producers' - that is, nations with large reserves which could increase output as required - ensured that supply could be increased whenever necessary. During the 1930s and 1940s it was the US that acted as that swing producer; in recent years it has been Saudi Arabia. Once we pass the peak, supply begins to dictate demand, meaning that the prices start to rise suddenly and steeply, and the people with control of the remaining oil really get to start calling the shots.

Some key indications that we are nearing the peak

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How might we know we are at or close to the peak? Firstly, there is an observable pattern that gives us an indication. Most oil-producing nations follow the same pattern - the peak in discovery tends to occur 30-40 years before a peak in production. Clearly one has to discover oil before one can produce it, and we tend to exploit the larger and easier reserves first. This pattern has been seen in the UK, the US, Russia and many more now-declining oil producing nations (see left). Given that the world as a whole peaked in discovery in 1965, we might, if the same pattern applies, imagine that we are close to, or at, the peak of production. This was first observed by geologist M. King Hubbert, who predicted in 1956 that the US would peak in production in 1970 (it had peaked in discovery in the 1930s). He was ridiculed, but eventually proved correct.

Another indicator is that since January 2005, world oil production has stayed at between 84 and 87 million barrels a day (mbd), in spite of a very high price environment. While the world economy desperately wants to increase consumption (the International Energy Agency has predicted that world production will reach 120mbd, a figure few in the industry take seriously), and oil prices have risen from \$12 a barrel in 1988 to come close to \$140 a barrel in June 2008. Its inability to keep up with burgeoning demand (see Figure 4, p.29) is a strong

indication that matters geological, rather than matters political or economic, are increasingly playing a role.

Discoveries have fallen since their peak in 1965. This downward trend in discovery is also due to the fact that although we are still finding oil, the average size of the fields we are discovering is falling. In 1940 the average size of the fields found over the previous five years was 1.5 billion barrels, by 1960 it had fallen to 300 million barrels, by 2004 it was just 45 million barrels, and it continues to fall. Indeed, during the Oil Age, 47,500 oil fields have been found, yet the 40 largest ones have yielded 75% of all the oil ever discovered. As Figure 2 shows (page 21), the fall in discovery has been accompanied by rising consumption. 1981 was the year this gap began, and it has widened steadily ever since, to a point where we now consume about four barrels of oil for every one we discover. In public, oil companies speak of high reserves and of a lucrative future. BP state that 'there is no reserves problem', Exxon that there is 'no sign of peak' and Aramco that there is 'no reserve problem'. Behind the scenes, however, they are increasingly aware of the nature of the problem. In November 2006, an event took place at Colorado Springs called the Hedberg Research Conference on Understanding World Oil Resources. The event was by invitation only, and brought together people from across the oil industry, as well as from bodies like the United States Geological Survey, the International Energy Agency and the Energy Information Administration. No press were allowed, and people's presentations weren't shared. The day featured open and frank discussions, along the lines of "my company says this, but the data says this."

The intention of the conference was to reconcile the enormous difference in the estimates of likely future reserves additions between, on the one hand, what the US Geological Survey, creators of the most optimistic scenarios, produces; and, on the other, what other organisations believe to be the case. Companies brought along their detailed proprietary data, which is not made public, and tried to see if there was a clear pattern emerging. The results of this "I'll show you mine if you'll show me yours" session were striking. The USGS had put forward a figure of 650bn barrels yet to be discovered, but the conference put the figure at just 250bn. It also argued that the non-conventional oils (tar sands, deep water etc.) would never produce more than 4-5 million barrels a day, and indeed would struggle to achieve that, again much lower than the USGS. This kind of behind-the-scenes confidential meeting was also instrumental in the early days of climate change, leading to the formation of the Intergovernmental Panel on Climate Change.

A further indicator that we are nearly there is the nature of the new discoveries that the market gets excited about these days, and which are increasingly being expected to make up the shortfall as conventional oil production begins to decline. One of the new 'unconventional' sources of oil generating excitement is the Alberta tar sands in Canada. The problem with the tar sands is that the oil is very dense and viscous, more like sandy bitumen than oil. There are two ways the oil is extracted. The first is to dig it out with huge diggers, move it around in trucks the size of a house, and 'wash' the sands in the equivalent of a huge washing machine. Around 20% of it is produced this way. The rest is extracted *in situ*, where steam is pumped underground and the oil sucked out. The resultant low-grade 'synfuel' is then refined into usable oil products. If the Alberta tar sands are the best we can do, we really are in trouble. Alberta is estimated to contain 175 billion barrels of oil, which makes Canada one of the top four or five oil-producing countries in the world. Oil from tar sands is far more expensive to produce than most other sources of oil, but with the price of oil rising, these harder-to-extract

oil sources become increasingly financially viable. Oil companies are moving into the area, and Fort McMurray, the area's main town, is becoming a boom town. Clive Mather, CEO of Shell Canada, describes Shell's operation in the area as the biggest thing he has ever seen the company undertake. People from all over the world are moving there for the 'New Gold Rush'.

Tar sands production is somewhat akin to trying to remove the cocoa powder from a huge chocolate brownie. Greenpeace estimate that by 2011, annual carbon dioxide emissions from tar sands production will exceed 80 million tonnes of CO2 equivalent, more than that currently emitted by all of Canada's cars. Tar sands production also requires the felling of large areas of ancient boreal forest. The two principal weaknesses of the process are how the steam that separates the oil and sand is produced, and where the water to make that steam comes from.

You take clean, precious natural gas (a resource also on its own trajectory of depletion), and burn it to make steam to produce 'synfuel', a poor quality dirty crude oil. It is madness. This is no 'gold rush'. Indeed, Matt Simmons, an energy industry investment banker, once described it thus: "Gentlemen, we have just turned gold into lead." It is literally scraping the barrel, and rather than negating the peak oil argument - as those who say "look, see, there's loads left" propose - this confirms the peak oil argument: that we have reached the mid-point of the Oil Age, and the era of cheap oil is well and truly over.

One tyre alone, on one of the huge trucks, costs over £40,000. Tar sands production requires the price of oil to stay high in order to be viable, but we should also ask how high does the price of natural gas have to rise before tar sands production becomes unviable again? The other limiting factor in tar sands production, alongside cheap natural gas, is water. It is estimated that it takes between two and four barrels of water for every barrel of synthetic crude produced from the tar sands. The amount of water that can be extracted from the Athabasca River is finite, and is a major factor limiting production. Despite the lunacy of tar sands extraction, large amounts of money are pouring in to make it happen, due in part at least to the fact that it is one of very few places in the world open to private investment in oil production.

We might at this stage use the analogy of a pub. Conventional drilling of sweet crude oil, such as occurs in Saudi Arabia, is like standing at the bar while a charming barman pours you pints direct from the cask in the cellar. Tar sands are akin to arriving at the pub to find that all the beer is off, but so desperate are you for a drink that you begin to fantasise that in the thirty years this pub has been open for business, the equivalent of 5,000 pints have been spilt on this carpet, so you design a process whereby you boil up the carpet in order to extract the beer again. It is the desperate, futile action of an alcoholic unable to imagine life without the object of his addiction, and is only viable because oil prices are high and natural gas prices are cheap (high oil prices being the only one of the two that we can depend on).

Another recent story also indicates the less-than-reassuring nature of our new discoveries. It relates to a supposed huge find of new oil reserves in the Gulf of Mexico in 2006, "between 3 and 15 billion barrels" according to over-excited press speculation (that's quite a range), which allowed many commentators to inform us that peak oil is now officially nonsense, and that we can all roll over and go back to sleep. This story was taken to show that there are still vast untapped reserves out there, that the peak oil 'doomsters' are wrong - and look, here in the Gulf of Mexico is the proof of that. When you read between the lines of this story, it isn't

quite as exciting as it first appears (exciting that is, if you aren't someone who believes that the best place for oil is for it to stay in the ground). The oil, which could be bountiful or is more likely to be disappointing, is below one mile of ocean and four miles of rock, in the most hurricane-prone stretch of the Gulf of Mexico. Rental of the specialist rigs required to drill in such waters can cost half a million dollars *per day*. Contrast this to the ease of drilling on land in the giant fields of Saudi Arabia or Mexico, and combine this with the falling size of new discoveries. . . it's clear that we are scrabbling around for crumbs.

The International Energy Agency, in a 2007 report, talked about what it euphemistically called a 'supply crunch' in 2012. The reasons for this, they argued, are complex and diverse, but nothing to do with peak oil. Andrew Leonard at www.salon.com wrote:

"To drastically summarise the report: The problem is not that the world is running out of oil, but that right now, offshore oil rigs are scarce and expensive, skilled labor is tight, transport infrastructure is limited, and political considerations such as 'resource nationalism' in states such as Venezuela and Russia and geopolitical risk in Iran and Nigeria are hampering investment and development. Logistics are the real problem, the report seems to be saying, and not the actual amount of oil in the ground. This leads to the conclusion that even though nearly 3 million barrels of new supply will be needed each year just to offset the decline in established oil fields, 'above-ground supply risks are seen exceeding below-ground risks in the medium term.'"

However, Leonard is highly dubious of these given reasons, concluding "if it smells like peak oil, it probably is." Peak oil is the very large elephant in the room, one it is becoming increasingly difficult to ignore. Although all of the issues identified by the IEA are valid, they are increasingly being exacerbated by geological constraints.

The final reason that convinces me that we are close to the peak is the changing financial practices of the major oil companies. Firstly, the increasing and steadily more spectacular mergers between different oil companies, a practice sometimes referred to as 'prospecting on Wall Street'. An oil company's share price depends on its reserves, on the potential future production it has secured access to. As the trend in discoveries continues to fall, as it has done since 1965 (see Figure 2, p.21), it becomes harder and harder for companies to sustain their reserves to offset against their production. It has become standard practice now for the larger oil companies to buy the smaller ones, thereby absorbing their reserves. Although oil companies have always done this, the scale of it has become increasingly dazzling.

A recent article by David Strahan examined the likelihood of a merger between BP and Shell, something that ordinarily would have been entirely unthinkable. In spite of their protestations that peak oil is so far away as to be not worth thinking about, the move, if it goes ahead, would be primarily driven by the fact that they are producing oil but are increasingly unable to replace what they are producing with fresh reserves. BP managed to temporarily reverse its declines by engaging in the TNK-BP project in Russia, thereby adding the Russian company's reserves to its own, but now, shortly afterward, the gap is starting to open up again.

Another fascinating recent development has been large oil companies buying back their own shares. It is estimated that if Chevron Corporation keeps buying back its shares at current rates (it plans to spend \$15 billion over the next three years), it will have liquidated all of its shares by 2023. Exxon is doing the same, spending about \$30 billion each year. With current

high prices, oil companies are awash with money, but with few places to invest it. With discoveries falling, exploration is seen as yielding insufficient returns and providing a very poor investment. That peak oil is now a factor in the decisions of oil executives was spelled out in the '2007 Global Upstream Performance Review', which said:

"We believe that the issue (peak oil) has become part of the industry's long-term planning. If the peak oil theory is correct, and a decline in world production is imminent, a company must choose among four alternatives - try to become a dominant participant, find a niche operational talent, harvest assets, or liquidate quickly."

Share buybacks are a clear indicator of continued falling discoveries and return from investment in exploration, and suggest that oil companies are starting to plan for their own contraction.

These are, if you like, my top five reasons why peak oil is near. There are many more, as an investigation of the Resources section at the back of this book, or of some of the essential websites, will reveal. At the end of the day, oil and gas are finite resources. It is clear now that at least 60 out of the 98 oil-producing nations of the world are in decline, and that even mighty oil-producing nations such as Saudi Arabia are experiencing enormous difficulties meeting demand. Given that reaching peak oil will be a tipping point of unprecedented proportions, it seems reasonable then to ask: When might we expect to get there?

Peak When?

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There is, as you might imagine, a wide range of predictions as to when exactly world oil production might peak, although recently this range has been narrowing. This diversity of opinion largely boils down to the fact that much of the information needed to make a precise prediction is not in the public arena. Around 80% of world oil is controlled by national oil companies, who have no obligation to make their reserves data public. In Saudi Arabia and Kuwait, for example, actual reserves data are a state secret and are fiercely protected. The private oil companies - the Shells and Totals of this world, responsible for a relatively small portion of the world's oil - are obliged to make their reserves data public. However, they have to walk a delicate line between keeping the regulatory authorities and their shareholders happy, and not revealing information of use to their competitors. Given the gravity of what peak oil would mean to the world, what we are left with is a decision: do we believe government and oil company assertions that all is well and that there is no cause for alarm in spite of the mounting evidence to the contrary, or do we question this complacency, and look more closely at what the oil industry is doing than what it is saying?

Environmental writer and campaigner George Monbiot puts it in stark terms: "Our hopes of a soft landing rest on just two propositions: that the oil producers figures are correct, and that governments act before they have to. I hope that reassures you." In *The Upside of Down*, Thomas Homer-Dixon likens our situation to driving a car fast along a country lane in dense fog. We know we are moving fast, we can hear the engine, but other than that it is hard to assess how fast we are moving. Our map suggests a straight road, and we are, after all, in a hurry. "Driving in fog is of course not sensible," he writes, "but it's exactly what we're doing

today." Driving blind.

Kenneth Deffeyes, author of *Beyond Oil*, publicly forecast his belief that peak oil for all oil would occur on Thanksgiving Day 2005 (that's Thursday 24th November for those of you outside the US). Despite receiving much of the same ridicule dished out to M. King Hubbert, if we look only at conventional oil, he may well have been very nearly right. Conventional oil production appears to have peaked in May 2005 at 74.2 million barrels a day and has been declining ever since (see Figure 3). Production of all liquids (that also adds in tar sands, biofuels, deep water oil, all the harder-to-get-at stuff) has also plateaued over the last two years, despite sharply rising prices and enormous surges in demand from China and India, but this does not necessarily mean that we have actually peaked yet.

Other researchers give a range of dates. The Oil Depletion Analysis Centre puts peak oil in 2007, Colin Campbell and Chris Skrebowski give 2010, and Jean Laherrere 2015. The skeptics, such as Cambridge Energy Research Associates (CERA), no longer debate if oil will peak, rather when it will peak. The CERA study, which generated a lot of 'peak oil theory is dead' media coverage when it was released in 2006, was thoroughly demolished (in my opinion) by an excellent piece by Dave Cohen, which analysed the CERA argument and found it lacking.

Countering the report's claim that "CERA does not agree with the simplistic concept of an imminent peak in oil production nor with the idea that oil will 'run out' soon thereafter", Cohen wrote:

"No one here or elsewhere is claiming that conventional oil will 'run out' anytime soon. Rather, the peak oil view is an evolving, sophisticated take on conventional oil production and the viability of substitutes to replace continuing demand for this paramount fossil fuel in the face of inevitable declines in available supply. Only the timing of such declines is at issue here. We can also only add that denial in the face of potentially very threatening events is a powerful force in the human psyche."

I am not qualified to give you an accurate prediction as to when this peak will occur. I am, however, by nature drawn to those who have no vested interests, who are independent of government or commercial interests, but who have analysed the data in depth. Predictions about peak oil range from 'it has already happened' to 'it will never happen'. However, given that even some oil companies now acknowledge not only the concept, but have started putting dates to it, anyone who argues that there are 200 years' worth of oil left is living in cloud-cuckoo-land.

Thierry Desmarest, CEO of French oil company Total, recently said he thought world oil production would never exceed 100mbd, telling a conference in Holland, "If we stay with this type of production growth, our impression is that peak oil could be reached around 2020." Lord Ron Oxburgh, former Chairman of Shell, recently said world oil production "could well plateau within the next twenty years, and I guess I would be surprised if it hadn't." He added: "We may be sleepwalking into a problem which is actually going to be very serious and it may be too late to do anything about it by the time we are fully aware."

In late October 2007, Germany's Energy Watch Group published a report which reassessed the data and argued very convincingly that world production had, in fact, already peaked in 2006, and "will start to decline at a rate of several percent per year". The report, which also

argued that Middle East reserves are far lower than previously thought, concluded:

"The world is at the beginning of a structural change of its economic system. This change will be triggered by declining fossil fuel supplies and will influence almost all aspects of our daily life. The now beginning transition period probably has its own rules which are valid only during this phase. Things might happen which we never experienced before and which we may never experience again once this transition period has ended. Our way of dealing with energy issues probably will have to change fundamentally."

It is a great shame that the British Government continues, in public at least, not to acknowledge the peak oil issue. A recent report on transport commissioned by the British Treasury stated that "fuel costs are forecast to fall by 26% up to 2025. An oil price of \$35 a barrel is assumed in 2025." This forecast was published even though the price of oil was already at \$50 a barrel by the time the report was released! More recently, in response to an online petition about peak oil, the UK Government wrote that "on the balance of the available analysis and evidence, the Government's assessment is that the world's oil and gas resources are sufficient to sustain economic growth for the foreseeable future."

I think we can see Desmarest and Oxburgh's statements as the bookends in predictions of when the peak might occur. The majority of estimates are now falling between 2010 and 2015, with very few credible researchers placing their forecasts beyond this 2020 bookend. Having said that, the exact date of peak oil is really not so important. What matters is the fact that it is inevitable, it is going to be happening soon, and we haven't even begun to think what we might do about it.

How seeing the downward side of the mountain stretch away before us will affect our collective psyche remains to be seen, if not determined. Figure 4 sums up our problem. We can see how closely supply and demand have followed each other, and how production has reached a plateau over the last two years. Once the peak is reached, though, the gap between supply and life-as-usual demand begins to steadily widen, and the price accordingly begins to rise sharply. It is often said that new ideas go through three stages. First they are ridiculed, then they are ignored, and finally they are accepted as having always been the case. At the Association for the Study of Peak Oil conference in Cork, Ireland, in September 2007, former US Energy Secretary, James Schlesinger, said: "Conceptually the battle is over. The peakists have won. We're all peakists now."

Climate change

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Until a year or so ago, climate change was seen as being such an unappealing subject to really embrace or get intimate with that most people felt happier looking the other way. Since then though, climate change has shifted much more towards the mainstream, with celebrities, governments and corporations falling over each other in the dash to become 'carbon neutral'. From the 'Live Earth' concerts to the Global Cool campaign which engages celebrities in raising awareness, the campaign against climate change has grown rapidly. Supermarkets such as Tesco and Walmart are engaging in far-reaching analyses of their carbon footprints, and appear to be taking the issue very seriously, as do (in theory at least) politicians and policy makers. Even more than with peak oil, I write this section on climate change with great

trepidation, as it is such a fast-moving field. Whatever I write will almost certainly have been overtaken by events by the time this book is printed. Climate change is happening faster than most models are able to keep up with, continually confounding expectation; models are being constantly revised and updated as the scale of this challenge becomes apparent.

When you start to explore the issue, climate change is extremely scary. Indeed, if it isn't scary, then you really haven't understood it. It is an area where one can easily resort to apocalyptic scare tactics, although I will try to avoid that here; the information on its own is scary enough without dramatic embellishment. Sharon Astyk recently wrote: "One of the disturbing things about listening to scientists studying climate change is the fear in the voices and words of people not accustomed to be fearful, and the sense that generally speaking, scientists are far more worried than most of us are."

We need to be realistic about where we are, and ambitious about what we can do. Climate change is a massive problem, but the worst effects could still be avoided if we are collectively able to engage with the issue. Transition Initiatives are but one of many powerful carbon-reduction technologies which, if embraced in time (and it is of course a big 'if'), can mean that we avoid the worst extremes of climate change. The trends at the moment, I grant you, really are not looking good.

The global climate is definitely warming; there is now no doubt about that. I don't need graphs, charts and scientific papers to convince me of that. Just within my own lifetime, I have seen the climate changing. I remember as a child winters being far colder, having to dig the snow away from the front doors, and power cuts caused by snowfall. Then, unsettled weather was the norm. Now, the weather is just plain unsettling, and, as we shall see, it will continue to become more so. Records are constantly being broken. In the UK, April 2007 was the hottest April on record, June 2007 the wettest June, autumn 2006 the hottest autumn, spring 2007 the hottest spring, July 2006 the hottest month, and the summer of 2007 was only a few millimetres away from being the wettest summer. As someone on BBC Radio 4's *The Now Show* said recently, "I don't know about carbon emission levels but I do know that when a wasp lands on my Christmas cake something is not right."

On the astonishingly wet night of Friday, 20th July 2007 (the night when floods submerged large parts of the Midlands), I remember hearing on the radio that four times the average rainfall for July had fallen in two hours. At the same time, Greece was having unusually hot weather, leading to the dreadful forest fires that engulfed the country a month later, with vast plumes of smoke visible in satellite photos of the country. We all have observations from our daily lives of the climate changing, whether it is seeing flowers out far earlier than previously, swallows arriving a month earlier than usual, as they did in 2007, or the fact that we have to turn on our heating in the winter less often. In some cases, people go to extraordinary lengths to pretend it isn't happening (see daffodils article on the following page).

The greenhouse effect

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The greenhouse effect isn't something we recently invented - without it, no life would exist on this planet. Without the layer of carbon dioxide and other gases keeping the warmth in, our average global temperature would be -18°C. The Earth has gone through various ages of

warming and cooling during its history. During the most recent Ice Age, 18,000 years ago, half of the UK was under a mile of ice, and so much water was locked up in the ice sheets that sea levels were up to 75 metres lower than at present. Scientists have recently found remnants of entire landscapes, with settlements, lakes, forests, marshes and hills under 450ft of water in what is now the North Sea. This discovery emerged from analysis of seismic data from oil companies, and has been christened by scientists 'Doggerland'.

Professor Vince Gaffney of the Institute of Archaeology and Antiquity at Birmingham University, who led the research, said: "The coasts, rivers, marshes and hills we found were, for thousands of years, parts of a landscape that would have been familiar to hundreds of thousands of people and countless species of animals. Now it is all gone." So, although having the greenhouse effect has been one of the factors that has made life on Earth possible, the problem comes when the gases that form that layer (carbon dioxide, methane, nitrous oxide and so on) build up and trap more and more heat in the Earth's atmosphere. It is akin to throwing more and more duvets onto a bed, which leads to the problems discussed below.

CO₂ is such a small part of the overall atmosphere around us that it is measured in parts per million (ppm). Normally anything that is measured in parts per million is so insignificant that it is hardly worth bothering about. Pre-industrial levels of carbon were 278ppm, but by 2007 they have reached 385ppm. This seemingly trifling increase - caused by the incessant and ever-growing release into the atmosphere of carbon dioxide from the combustion of fossil fuels, from changes in land use, from deforestation and so on, alongside the increases in emissions of methane from mining, livestock and the drying out of wetlands, as well as nitrous oxide from agriculture and aeroplanes - has already had significant effects, disrupting the delicate balance of the planetary climate. Although anthropogenic greenhouse gases (i.e. those caused by human activity) are only about 30% of total emissions, they have been enough to tip a very delicate balance.

The rise of carbon dioxide concentrations from 278ppm to 384ppm has led to global average temperature rising by 0.8°C above pre-industrial levels. While this may not sound like much, just that level of increase has produced alarming changes around the world. These include widespread glacial retreat in the Himalayas, heavier than usual monsoons in India, Nepal and Bangladesh, encroaching drought in Australia, increasing frequency of tropical storms, as well as, it could be argued, the spectacular floods that hit the Midlands in the UK in the 'summer' of 2007. In Alaska, where average temperatures have increased 3-4°C, houses and roads are becoming unusable as the permafrost melts, which in turn releases more methane, a far more potent greenhouse gas than carbon dioxide. Sea levels are rising, and the rate of that rise is accelerating; the years 1993-2006 saw average rises of 3.3mm per year, far greater than the Intergovernmental Panel on Climate Change's prediction in 2001 of rises of 2mm per year. Here in the UK, we are having to rethink the trees we plant, and the weather is noticeably changing. There is now no argument that the world is warming dangerously, possibly catastrophically, and there is an unprecedented scientific near-consensus that our oil-addicted lifestyles are to blame.

So how high can we realistically allow world temperature to rise? The answer is that ideally we would stop all emissions today, but clearly that's not going to happen. As Mark Lynas describes so graphically in his book *Six Degrees*, each degree that we allow world

temperature to rise brings new and unprecedented scales of catastrophe. We still haven't broken through the 1°C threshold, but even so, the changes are clear to see. The ice-sheets on the Arctic Ocean are melting (of which more below), the Northern Passage was open to shipping in 2007 for the first time since records began, droughts are increasing around the world, and weather records are being broken all the time. Hurricanes and typhoons are increasing, as are the number of heatwaves. Climate change is happening, and it's happening faster than the scientists' models can keep up with.

Is there such a thing as a safe limit?

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If we break through the 1°C barrier, as now seems inevitable, we'll see a Mount Kilimanjaro completely bereft of ice, the almost complete collapse of the Great Barrier Reef, and a number of island nations submerged by rising sea levels. A 2°C rise would cause dreadful heatwaves, and increased drought around the world. Breaking through the 3°C barrier would mean that the growing season in Norway would be what it is in southern England today. The 3°C threshold would also bring about the complete collapse of the Amazon ecosystem, and the very real threat of conflict over water supplies around the world. Death rates from summer heatwaves in Europe would make the summer of 2003 (which killed over 30,000 people) look positively tepid.

Beyond that, in a nutshell, runaway climate change is not something you want to experience, or leave as a legacy to your children, yet we appear to be sailing alarmingly close to it. The emerging consensus in recent years has been that the imperative is to keep below 2°C at all costs. Even doing that, there is no guarantee that we will not have triggered runaway climate change. As George Monbiot puts it, two degrees is "merely less dangerous than what lies beyond", and indeed a recent paper by James Hansen *et al.* at NASA argues that even 2°C is too high, given the rate of degeneration of the Arctic sea ice and the Greenland ice sheets, and that 1.5-1.7°C is more in line with adhering to the precautionary principle. The reality is that the carbon dioxide already released will continue to push up the temperature for years to come (a phenomenon known as 'thermal inertia') by at least 0.6°C, meaning that we are already committed to a 1.4°C rise whatever we choose to do now. The warming we are experiencing now is the result of greenhouse gases emitted in the 1970s.

Let's return to the Arctic sea ice for a moment, as it may well turn out to hold the key to the future of human civilisation. The Intergovernmental Panel on Climate Change's Fourth Assessment Report in 2007 said: "Arctic sea ice is responding sensitively to global warming. While changes in winter sea ice cover are moderate, late summer sea ice is projected to disappear almost completely towards the end of the 21st century." It appears, however, from a look at the increasing flow of literature on the subject, that this melting is happening far faster than that, and that the ice is far more sensitive to rises in temperature than previously thought. It has already reduced in size by 22% over the past two years, as well as becoming steadily thinner, halving in thickness since 2001. Some predict now that the Arctic will be completely free of ice by 2013, a hundred years ahead of the IPCC's forecast. This, in turn, will speed up the melting of the Greenland ice sheet, which is what could lead to sea level rises of as much as five metres by the end of the century, affecting two million square kilometres of low-lying land and 669 million people.

Much of this re-evaluation is due to scientists only now beginning to develop models for the complex feedback mechanisms that influence rates of melting. James Hansen of NASA writes that "ice sheet disintegration starts slowly but multiple positive feedbacks can lead to rapid non-linear collapse." While keeping below the 2°C threshold is vital, an increasing number of people are arguing that even 2°C is too little to prevent runaway climate change. David Spratt of Carbon Equity, having evaluated the latest evidence on the scale of the ice melting in the Arctic, writes that "[the IPCC's] most fundamental and widely supported tenet - that 2°C represents a reasonable maximum target if we are to avoid dangerous climate change - can no longer be defended." Given that we are not yet even at a 1°C rise, yet appear to have unleashed the catastrophic disintegration of the Arctic ice, 2°C is an absurd level to imagine as being 'safe' by any stretch of the imagination. He suggests that if we were able to wind back the clocks and start again, we would have based what constitutes 'safe' rises in emissions on what guaranteed the stable continuity of the Arctic ice sheet, which would probably have been around 0.5°C. The Industrial Revolution would have looked very different - or perhaps with the benefit of hindsight we would have decided to forgo it altogether.

Spratt concludes his study thus:

"The simple imperative is for us to very rapidly decarbonise the world economy and to put in place the means to draw down the existing excess CO₂ levels. We must choose targets that can actually solve the problem in a timely way. It is not too late to be honest with ourselves and our fellow citizens."

Cuts on this scale won't happen without an extraordinary, unprecedented, global concerted effort. This would be from a starting position where there is still no area of the world where outputs of carbon emissions are actually falling. Until recently, it was believed that the scale of climate change necessitated cutting our emissions by 90% by 2050, or even by 2030, a mere twenty-two years away. Trying to imagine maintaining our current lifestyles but emitting just 10% of the current amount of carbon is extremely difficult - almost unimaginable. However, buried in a report earlier in 2007 from the Intergovernmental Panel on Climate Change is an extraordinary piece of research. The IPCC researchers, using 'coupled modelling' (which basically means modelling including the impact of some feedback loops) concluded that to stay at under a 2°C increase in temperature, humanity has to zero its emissions by 2060. That isn't saying that we have to achieve zero emissions from burning fossil fuels in our cars, planes and power stations (which might seem hard enough); that's zero from everything we do - from cutting down trees, from using fertiliser (manufactured from natural gas) and from raising livestock.

Similarly, reflecting on the implications of James Hansen's recent paper on Arctic ice melting, George Monbiot told the 2007 Climate Camp at Heathrow Airport: "We're not talking any more about measures which require a little bit of tweaking here and there, or a little bit of political tweaking here and there. We're talking about measures which require global revolutionary change." 90% cuts are no longer adequate, he said, nor, even, are 100% cuts. We are looking at 110-120% cuts, in other words sequestering more carbon than we produce. What it might actually look like - if you or I went to bed in the evening having sequestered more carbon than we had generated - I will consider later in the book, but this is clearly a monumental and unprecedented challenge.

The intertwining of peak oil and climate change

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One of the more absurd phenomena to emerge in recent years is that there are climate change activists who dismiss the peak oil argument, and peak oil activists who downplay climate change. It is as if people have discovered terrain which is somehow 'theirs', which they intend to gallantly defend against all-comers. I have spoken to a number of leading climate change activists who are doing great work on climate change, but who regularly want to downplay the peak oil issue. George Monbiot has expressed caution about emphasising the peak oil argument, fearing it will legitimise the case for biofuels, increased coal use, tar sands extraction and other climatically catastrophic approaches. "We don't have to invoke peak oil at all to see the sense and the logic in [the Transition approach], because even if the peak oil problem doesn't exist in any form, climate change does," he told a public meeting in Lampeter. However, in a subsequent article he revisited peak oil, examining the UK Government's predictions for increases in road transport, and asking what might power those cars, finding that, unbelievably "no report has ever been commissioned by the British Government on the issue of whether or not there is enough oil to sustain its transport programme."

Tony Juniper of Friends of the Earth acknowledges that peak oil is a real challenge: "We do need to have the peak oil question in mind, because, irrespective of what we do about climate change, there is going to be an additional shock that's going to be economically significant, if not quite dangerous, coming from the oil price shooting up at some point, very likely in the not-too-distant future." He concludes, however, by saying: "So the two are related, but I think we have to keep them separate in terms of how we present them and deal with them because otherwise we create inadvertently damaging responses."

I disagree. I will argue in this section that I don't think we can keep them separate, and that doing so does nothing to assist our development of realistic and potentially successful responses. Jeremy Leggett calls them the "Two Great Oversights of Our Times" and, to borrow from Al Gore, peak oil is as much an Inconvenient Truth for climate change campaigners as climate change is for everyone else. Both, of course, are symptoms of a society hopelessly addicted to fossil fuels and the lifestyles they make possible. It is, however, too simplistic to assert that peak oil will mean climate change will be brought under control because we will run out of access to affordable liquid fuels; the situation is much more complex.

We do have a choice about how we respond to peak oil. We can use it as an argument for developing solutions that actually put in place infrastructure that will support us beyond the Oil Age, or we can use it to justify clinging to fossil fuels at all costs. The danger is, as Monbiot argues, that the gap which emerges as liquid fuels decline in availability will be filled with other fuels each far worse in terms of their climate impacts than oil was - the turning of coal into liquid fuels, tar sands, biodiesel and so on. If we don't fill the gap with conservation and a concerted programme of relocalisation (a concept explored in depth below), and if we refuse collectively to acknowledge the reality of energy descent (the downward trend in the net energy underpinning society), we will rapidly drive ourselves beyond the climatic tipping points and will unleash climate hell. If we see climate change as a separate and distinct issue

from peak oil, we risk creating a world of lower emissions but one which is, in terms of oil vulnerability, just as fragile as today's - if not more so - as energy prices rise.

A good example of this is New York, which recently emerged in a study as having one of the lowest per capita CO₂ emissions of any large Western city, less than a third of the per capita US average. This is due to the density of living, the walkability, good public transport and the low heating requirements of apartment living. So, from a climate change perspective we can argue that New York is a good model of low carbon living we would all do well to emulate. Now let's weave peak oil into that mix. What happens to New York in the event of a power shortage, or when the price of importing food starts to rise sharply? New York experienced such a power cut in August 2003, and although it only lasted for a day, its impact was keenly felt. While New York may have a small carbon footprint, it has little or no resilience to declining oil supplies (a concept explored in depth in Chapter 3).

Climate change says we *should* change, whereas peak oil says we *will be forced to* change. Both categorically state that fossil fuels have no role to play in our future, and the sooner we can stop using them the better. It is key that both climate change and peak oil are given an equal degree of importance in any decision-making processes. It is interesting to observe that climate change is rapidly being taken on board by corporations, and increasingly by governments. Marks and Spencer now add labels to their clothes which say "If It's Not Dirty, Wash at 30," and supermarkets are falling over each other to be seen to be greener than their competitors. The idea of maintaining the global economy and just reducing its carbon output each year is attractive, and is now being seen as central to staying ahead of the competition. Apart from the Swedish and possibly the Irish Governments, no government or corporation is yet really addressing or even acknowledging peak oil, at least publicly, because their business models will struggle greatly to adapt to it. For this reason the drive for reducing carbon emissions is coming largely from the top downwards; while responses to peak oil, due to its being less palatable to government and industry, appear to be coming more from the bottom up.

It is also important to point out that unless we plan in advance for peak oil, and adopt measures such as the Oil Depletion Protocol proposed by Colin Campbell and Richard Heinberg, the recession caused by runaway oil prices will blow responses to climate change out of the water. Responding to climate change on an adequate scale requires a lot of money and an unprecedented degree of global co-operation. An economic recession - or worse, collapse - will make keeping the lights on our priority, and tackling climate change will slide rapidly down our list of priorities. Facing runaway climate change with a collapsed economy is the scenario we really want to avoid, and we separate these two issues at our peril. Perhaps one could also argue that while climate change offers globalised economies the possibility of gradual adaptation to a lower carbon way of continuing globalised international trade, peak oil asks much tougher, and possibly unanswerable, questions.

Figure 7 tries to set out what happens when peak oil and climate change are looked at together rather than in isolation. The Hirsch Report, which we will go on to explore, argues that we can mitigate peak oil with a crash programme of squeezing oil out of everything we can get our hands on. On the other hand, the Stern Report, commissioned by the UK Government to explore the economics of climate change, believes that climate mitigation and globalised economic growth are both possible and compatible. It does, however, completely

ignore peak oil, stating that "there is enough fossil fuel in the ground to meet world consumption demand at reasonable cost until at least 2050", an utterly absurd assertion in the light of what we have looked at in Chapter 1. I argue here, as Figure 7 shows, that when the two are combined, our options look very different, that when we combine the two, the rebuilding of resilience (a concept we shall go on to explore) is as important as cutting carbon emissions.

Can peak oil engage people more effectively than climate change?

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Here I enter the realm of the contentious - and I do so cautiously but determinedly. It has been my experience from my work promoting the Transition concept that peak oil, if presented in the way that this book will go on to elucidate, can do more to engage and involve people and communities than climate change. Peak oil educator Richard Heinberg uses the analogy of a car: "At the most superficial level, we could say that climate change is an end-of-tailpipe problem, while peak oil is an into-fuel-tank problem." One could add to this that people perceive themselves as being inherently more affected by rises in the price of a key commodity such as liquid fuels than by changes to the climate.

One of the things peak oil does very effectively is put a mirror up to a community and ask: "What has happened to the ability of this community to accurately identify and provide for its basic needs?" Allowing people to mentally explore what their current lifestyles would be like if the inflow of cheap oil were to cease is a powerful way to get people to think about the vulnerability of their oil-dependent state. It can focus the mind more than climate change because it can seem to be more obviously relevant to people's everyday lives. Also, for some, barrels of oil are easier to visualise than tonnes of gas.

If the 'early-toppers' such as Campbell and Skrebowski are right, peak oil will begin to visibly impact our lives within a few years. The impacts of climate change are still seen by many, despite the extraordinary flooding of the summer of 2007 and the accelerating collapse of the Arctic ice, as a more gradually unfolding process, while those of peak oil may be much more immediate.

Climate change is, rightly or wrongly, seen as a problem that will primarily affect the developing world before it affects the developed world, which, ironically, is largely responsible for creating the problem in the first place. The same is true, initially at least, for peak oil. While we in the West can theorise about what the impacts of peak oil might be, for many developing countries it is already a grim reality. Indeed, their enforced reduced consumption, sometimes termed 'demand destruction', could be seen as reducing consumption globally, thereby stopping runaway prices for those of us who can still afford liquid fuels.

Most countries in Africa, Asia and South America are already experiencing the effects of peak oil. Argentina is facing its worst energy shortage for twenty years, with widespread power cuts and natural gas shortages affecting public transport. Power cuts in Pakistan have led to riots, and in Iraq some provincial officials have begun disconnecting power stations from the national grid so as to keep the energy generated to themselves. Iran has introduced petrol

rationing, and the UN recently warned the Sri Lankan Government that they will be unable to continue their humanitarian work in the country due to fuel shortages. In Uganda, grid power shortages have shut down the pipeline which brings diesel into the country from Kenya, a kind of peak oil 'feedback loop'.

In Nigeria only 19 out of 79 power plants work, and blackouts cost the economy \$1 billion a year. Nicaragua is now running at a national energy deficit of 20-30%, with the national energy company having to shut down whole cities for 6-10 hours at a time. Costa Rica has regular blackouts, as does the Dominican Republic, where blackouts which originally only affected the poor *barrio* districts now extend to the exclusive residential districts.

Thus far, the wealthier nations have been able to keep peak oil at arm's length thanks to an economic cushion which insulates us from rising prices, but only up to a certain point. Where exactly that point lies is hard to assess and nobody knows for sure, other than to say that, if the price of oil rises above \$102 a barrel, it will break the previous (adjusted for inflation) figure that caused a recession in the 1970s. Beyond \$102 a barrel we are into uncharted territory, but its impacts on the economy are unlikely to be beneficial. Peak oil and climate change must be seen as equally pressing drivers for change.

The contradictions of the Hirsch Report

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When the US Department of Energy commissioned Robert Hirsch and his colleagues to write a report looking at mitigation strategies for peak oil, little could they have suspected what they were going to get. It also seems that Hirsch himself was unprepared for where the report would take him, and what he would end up writing. In an interview following the report's release he mused upon the report's conclusions:

"There's no question in my mind at least that peaking is likely to occur in maybe the next 10 or 15 years. So if depletion is as high as some people think it could be, we're in a very serious, serious problem. Much worse than the worst that we could think of. This problem is truly frightening. This problem is like nothing that I have ever seen in my lifetime and the more you think about it and the more you look at the numbers, the more uneasy any observer gets.

It's so easy to sound alarmist, and I fear that part of what I'm saying may sound alarmist, but there simply is no question that the risks here are beyond anything that any of us have ever dealt with. "The risks to our economies and our civilisation are enormous, and people don't want to hear that. I don't want to think about that. That's a very uncomfortable thing to think about. And I will tell you that it took some time after that realisation set in to be able to emerge and try to be positive and constructive about this problem. This is a really incredibly difficult, and incredibly severe problem."

"A really incredibly difficult and incredibly severe problem" - clearly not a man to mince his words. Short of just scrawling "Aaargh!", this was as close as one could get to really conveying the immensity of the challenge of peak oil. The Hirsch Report was dynamite, and is seen by many in the peak oil community as being a seminal document, the first 'official' document to really take peak oil seriously. However, it is also worthy of deeper inspection, as it is not just a document about peak oil but it also offers an illuminating and terrifying insight

into the responses to the challenge of peak oil that our leaders might pursue in order to keep the lights on and the wheels turning, if we fail to come up with anything better.

The nub of the report's problems can be summarised in the term "viable mitigation options". This term appears in the oft-quoted paragraph from the executive summary:

"The peaking of world oil production presents the US and the world with an unprecedented risk management problem. As peaking is approached, liquid fuel prices and price volatility will increase dramatically, and without timely mitigation, the economic, social and political costs will be unprecedented. Viable mitigation options exist on both the supply and demand sides, but to have substantial impact, they must be initiated more than a decade in advance of peaking."

The report's definition of what these options might be are profoundly at odds with what this book will propose. For Hirsch, viable mitigation options are sought from the basic premise that the show must go on in its current form, that business as usual must be preserved at all costs. In an interview I did with Richard Heinberg, I asked him what he saw as being the report's limitations.

"The implied goal [of the report] is to keep business as usual going as long as possible by any means necessary, including using coal to make liquid fuel. Of course, if it were feasible on any large scale, this would produce a climate catastrophe, but that was completely overlooked in the report. There's no evidence of concern for climate change issues whatsoever in the report. The goal of the authors is to suggest how we could keep the engines of modernity running as long as possible."

In 2006, at the Association for the Study of Peak Oil conference in Italy, I heard Robert Hirsch give a talk called 'Mitigation of Peak Oil: Making the Case: more numbers and some questions', which built on the 2005 report and set out a 'crash programme' to keep all the cars in the US on the road. His plan, he told the assembled audience, would cost \$1 trillion a year, and would involve a massive expansion of coal-to-liquids, extraction from tar sands, gas-to-liquids and so on. I appeared to be one of only a handful of delegates looking utterly horrified at this proposal and thinking I must have misunderstood what he had said. I hadn't.

Musing aloud later on Transition Culture about the implications of Hirsch's talk, I wrote:

"Hirsch presented clearly what happens when one takes a purely peak oil perspective without the integration of a climate change one. For me, Hirsch laid out a clear and perfectly reasoned argument why we cannot possibly keep all our cars going and why we need to break our addiction to the car. He just hadn't realised that that was what he was doing."

Imagine if the readers of this book were given a \$1 trillion a year budget to initiate and drive a programme of global powerdown - think what could be achieved! There was some very dangerous thinking and there were some equally dangerous basic assumptions in Hirsch's presentation. I would not wish to take away from the usefulness of the Hirsch Report and his work on depletion profiles, but the recommendations in his talk, in the wrong hands, could lead to policy choices being taken which are in effect collective suicide.

The same really applies to the original Hirsch Report. If your starting assumption is that the show must go on at all costs, you will scrabble around for whatever strategies and

technologies might, in theory, allow you to do so. The 'crash programme' advocated by Hirsch would greatly hasten the headlong plunge towards climate chaos.

Both the Hirsch Report and the Stern Report, as seen in Figure 7, illustrate the perils of looking at these two issues in isolation. Alternatively, when peak oil and climate change are seen as inseparable, we need to completely rethink our 'viable mitigation options', as well as acknowledge that business-as-usual is untenable. What 'viable mitigation options' might look like when the two are brought together will be explored as this book progresses, but the Hirsch Report offers us a clear exposition of what they absolutely must not be.

The other key aspect of the Hirsch Report is its assessment of timing. We will need, it argues, "more than a decade in advance of peaking" to prepare the economy for this transition, preferably twenty years. While this is a sobering way of looking at the scale of the challenge, I think that once a society decides to move, things can happen very quickly. Lester Brown cites the example of how the US economy re-gearred itself entirely at the beginning of World War II. President Roosevelt, having set ambitious arms production goals, said: "Let no man say it cannot be done." The greatest expansion in output was in 1942, with the production and sale of private cars being banned, housebuilding and road construction halted, and driving for any non-essential purpose prohibited. Brown writes:

"The automobile industry went from producing nearly 4 million cars in 1941 to producing 24,000 tanks and 17,000 armoured cars in 1942 - but only 223,000 cars, and most of them were produced early in the year, before the conversion began. Essentially the auto industry was closed down in 1942 through the end of 1944. In 1940, the United States produced some 4,000 aircraft. In 1942, it produced 48,000. By the end of the war, more than 5,000 ships were added to the 1,000 that made up the American Merchant Fleet in 1939."

When society decides to put its weight behind change, things can move very fast. A number of relatively small changes in legislation, giving people more money for energy from microgeneration than they'd pay the grid, carbon rationing, thorough adoption of the whole person paradigm and changes to planning (i.e. promoting local agriculture and co-housing) will accelerate things greatly. While some of this needs to be driven at a national government level, much of the momentum and pressure, as well as the diversity of projects and initiatives that need sanction or support from government, can come from the local level. People need to hunger for these changes, and to see them as more desirable than the way things are.

While peak oil is a crucial insight into what is ahead of us, it is also essential to be mindful of some unsavoury proposals being sneaked in on the back of it. Just as climate change is sometimes put forward as the justification for expanded nuclear power and the illusory hydrogen economy, so peak oil (as the Hirsch report so graphically illustrates) can be used to instil a fear that we urgently need liquid fuels from wherever we can squeeze them. Some argue that it will usher in a Golden Age of coal. It is important to remain alert to that. As we will see in Part Two, this is a crisis which is about much more than what we'll put in our petrol tanks.

The lesson from the Hirsch Report, then, is that in proposing solutions to climate change and peak oil we must always be sure that we are asking the right questions. The question is not "How can we keep everything going as it is?" We should instead ask how we can ensure well-

being for all within realistic energy constraints. Rather than deciding our plan of action first and then picking the energy options to match it, we should start by basing our choices on asking the right questions about the energy available to underpin our just purposes and local plans.

The Hirsch Report fails to ask the right questions. When devising solutions, we must address the fundamental reality of human being, climate change and peak oil from the outset. The 'viable mitigation options' we come up with will depend entirely on the nature of the questions we ask. Hopefully, this examination of the Hirsch Report has been useful in establishing why just looking at peak oil or climate change in isolation is both futile and potentially dangerous.

Chapter 2: The view from the mountain-top

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I once had a conversation with an elderly man I met in a pub, which I thought was about peak oil. I talked about my understanding of it and he interrupted occasionally with fairly innocuous interjections, and I thought the conversation was getting somewhere interesting. At the end though, he said, by way of a closing flourish, "Yes, I used some of that on a table once - came up lovely." By this stage in the book I hope that you, unlike my elderly friend, will be feeling relatively up to speed with the nature of the principal challenges we face. You will be aware by now that our fossil-fuel-saturated lives will undergo a radical redesign whether we want them to or not, but you may quite reasonably be wondering what they might look like at the end of this redesign process.

Evaluating possible ways forward

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I do not have a crystal ball. I don't know how the twin crises of peak oil and climate change will unfold - nobody does. I don't know the exact date of peak oil, and again, nobody does. Similarly, I don't know if and when we will exceed the 2°C climate threshold, and what will happen if we do.

What I am certain of is that we are going to see extraordinary levels of change in every aspect of our lives. Indeed we have to see extraordinary levels of change if we are to navigate our societies away from dependence on cheap oil in such a way that they will be able to retain, if not improve, their social and ecological coherence and stability, and also live in a world with a relatively stable climate. In terms of looking forward, many people have set out different scenarios for what the future might hold. I have trawled through a lot of these for insights as to how life beyond the peak might be.

What I have set out to do in Figure 8 (p.46) is to position these very different scenarios in relation to each other, starting at one end with those that see technology as being all-powerful and capable of solving any problem put before it, and at the other extreme those who see technology as having no place and the fragmentation and decentralisation of society as being inevitable. I started out thinking that this spectrum would be linear, but actually both extremes taken to their logical conclusion result in collapse - what David Holmgren calls the 'Atlantis

scenario' - where society implodes and disintegrates. As a way of underpinning this diverse spectrum of possibilities, I have used three mindsets:

- Adaptation: scenarios that assume we can somehow invent our way out of trouble
- Evolution: scenarios which require a degree of collective evolution, a change of mindset, but which assume that society, albeit in a low-energy, more localised form, will retain its coherence
- Collapse: scenarios that assume that the inevitable outcome of peak oil and climate change will be the fracturing and disintegration, either sudden or gradual, of society as we know it.

From the diagram (Figure 8) we can see that those scenarios in the top left hand section (the Adaptation wedge), all rely on technology, economic growth and the continuation of economic globalisation to solve the problems that peak oil is presenting. Many of them don't even allow for the mitigation of climate change. Put simply, we don't need to change ourselves, just our light bulbs. Scenario planner Pierre Wack has said that these kinds of scenarios have a fatal flaw, in that they rely on what he terms the "Three Miracles", namely:

1. A technological miracle (i.e. extraordinary new exploration and production levels or free energy)
2. A socio-political miracle (that government policies and cultural values will allow social exclusion to be eradicated)
3. A fiscal miracle (namely that the public sector will fund the implementation of that scenario)

The Evolution scenarios require the actual evolution of our culture as a whole, rather than just focusing on technological solutions to 'fix' the immediate problem. This approach echoes Einstein's famous words: "We cannot solve our problems with the same thinking we used when we created them." These scenarios argue that we have to evolve our way out of this one. [the diagram needs a new scenario involving both the whole person paradigm and complementarity]

It is the unlikelihood of all of Wack's three miracles occurring that leads me to believe that the Adaptation scenarios aren't going to happen, and that the Evolution ones are the most likely. Collapse is, of course, always possible, but I like to think of it as being like The Ghost of Christmas Future in Dickens' A Christmas Carol. That is, it shows how the future will be unless we change what we are doing. It is not inevitable. As we will explore in more detail later in this section, much of what we would need to do to prepare for the Collapse scenarios we would need to do anyway to prepare for the Evolution scenarios. I would argue that rather than trying to terrify people into change through presenting them with visions of Collapse, the Evolution scenarios, especially the one involving the whole person paradigm, could provide a vision of an end goal so enticing that society would want to engage in the transition towards them.

Scenarios in the Evolution spectrum range from the idea that what is needed is a national concerted plan of action to break away from dependence on fossil fuels (what Heinberg terms 'Powerdown') to localisation - the concept that we re-prioritise the local and re-value the

human being, and that the influence of huge centralised systems begins to decline. It is my assertion that when peak oil and the need to respond to climate change are factored into our responses, Business as Usual (and the other scenarios in the Adaptation paradigm) has no long-term viability.

Why a future with less energy ends up looking somewhat inevitable

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The work of Bryn Davidson of the Dynamic Cities Project in Vancouver BC, Canada, offers a perhaps more accessible and concise overview of post-peak scenarios. He has created a table with two axes (Figure 9). The first, from left to right, shows the rapidity with which depletion hits. As we have already seen, many indicators show that the oil peak is much closer than we think, placing us almost certainly in the rapid depletion half of the table. The top to bottom axis reflects the degree of proactivity or reactivity taken by government and business.

In essence, Davidson argues that slow depletion and a reactive response would result in 'Burnout', a stubborn clinging to business as usual which results in a headlong lurch into climate chaos. If we have rapid depletion and a reactive response, the results will be catastrophic: a societal breakdown and collapse on the scale of some of those throughout history, such as the Mayans and the Romans, as described so clearly in Jared Diamond's recent book, *Collapse* or in William R. Catton's *Overshoot*. Slow depletion and a proactive response could lead to what Davidson calls 'Techno Markets', that is, a technology-derived sustainable development. However, to go back to the Hirsch Report, that is only possible with notice at least ten years (and preferably twenty years') ahead of the peak - time we almost certainly don't have. The final scenario Davidson calls 'The Lean Economy' or 'Powerdown'. In effect, I would argue (and Davidson's graphic puts it very clearly) that a planned and urgent energy descent is really the only desirable option left to us. Both 'Burn-out' and 'Collapse' are places we really don't want to go.

For a final way of distilling the essence of these many and varied scenarios, I turn to a recent report entitled 'Descending the Oil Peak' by the City of Portland Peak Oil Task Force, which assessed the range of possible impacts of peak oil on the city, and drew from that exploration three possible scenarios. They offer a concise and tidy way of looking at the realistic options facing us.

1. Long-term Transition. In this scenario the decline in supplies and rise in prices both occur fairly gradually, allowing mitigation options to be put in place to cope with it. It foresees a 50% cut in oil consumption over 20 years, and although the beginning of this transition is a bumpy plateau, over time the downward trend will become evident.
2. Oil Shocks. This scenario is similar to that above, but is punctuated by "sudden disruptions and price hikes, triggering periodic sustained emergencies".
3. Disintegration. Here, the impacts of peak oil become so severe that the fabric of society begins to unravel, leading to "socially catastrophic competition for scarce resources, including food, shelter and energy".

Clearly these are presented in decreasing order of desirability. The point I want to make is that preparing just for climate change and not taking peak oil into consideration offers little protection against each of the above. In each eventuality, it is the degree of resilience (a concept explored in more detail in Chapter 3) that is in place in advance that will make the difference. Vandana Shiva, the Indian activist and advocate of sustainable agriculture, speaks of visiting some of the areas hit by the 2004 tsunami, and says that it was the villages with the greatest resilience that were up and running relatively quickly, and those that had dismantled their resilient economies in favour of an import-dependent, tourism-based model that were hit the worst:

"The indigenous tribes of Andaman and Nicobar, the Onger, the Jawaras, the Sentinelese, the Shompen, who live with a light ecological footprint, had the lowest casualties even though, in the Indian subcontinent, they were the closest to the epicentre of the earthquake."

In many ways each of these three scenarios requires that we put in place more to fall back upon than we have so far. In each scenario we will need a strengthened, more localised infrastructure and the ability to meet our basic needs more locally. While Scenarios 2 and 3 are clearly less desirable, in preparing for them we actually make Scenario 1 more likely to come about. Our chances of a positive outcome are enhanced if that is what we are striving for. For many, the possibilities of Scenarios 2 and 3 inspire panic and a placing of self-preservation above more community-focused responses. This is a traditional reaction but, I would venture, neither a very healthy nor a necessary one. We've seen that in difficult times we need each other more, not less. When the whole person paradigm becomes dominant, we'll choose each other in all conditions.

One of the key arguments of this book is that when faced with these three scenarios, our best chance of a successful collective transition will not come from presenting people with the possibility of Scenarios 2 and 3. Psychologists Winter and Kroger write that "healthy functioning requires that we have faith that our needs will be met in the future; without this confidence, our trust in the world is damaged. Damaged trust can lead to four neurotic reactions that are likely to impact environmental behaviour: narcissism, depression, paranoia and compulsion." Our best chance of dealing with climate change and peak oil will emerge from our ability to engage whole people in complementarity and seeing the transition to Scenario 1 as an attractive adventure, something in which they can invest their hope and their energy. This book will go on to explore how this could be done.

For those involved in trying to realise these 'evolutionary' scenarios, what is the nature of their role? David Korten sums it up as being "a dual role - hospice and midwife." In other words, as well as inspiring people to find their voices during the terminal decline of the current globalised oil-dependent infrastructure, we are nurturing the emerging new localised economies that will replace it. Sharif Abdullah writes that "for the emerging society . . . our role is to compassionately assist in the birth of a new way of acting in the world. As with any birthing process, there will be some pain and trauma associated with the birth. Our role is to minimise the pain and nurse the new society to full health."

I believe that the only way through the monumental transition necessitated by the passing of the Age of Cheap Oil will involve a rethinking of how we regard the people around us, those we'll engage. The tools we have had at our disposal are inadequate: we need a new toolkit (some of which is explored in Part Four), as well as a new way of seeing our role. One of the

quotes that is most useful here comes not from an environmentalist, but an artist. The French painter and sculptor Jean Dubuffet wrote: "Art does not lie down on the bed that is made for it; it runs away as soon as one says its name; it loves to be incognito. Its best moments are when it forgets what it is called."

Perhaps our work preparing communities for transition should similarly be constantly reinventing itself and forgetting what it is called: a creative, engaging, playful process, wherein we support our communities during the loss of the familiar, and inspire and create a new lower energy infrastructure that's ultimately an improvement on today's.

Why 'Energy Descent'?

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During this book I make frequent use of the term 'energy descent'. This may be a new term to you, so I will explain what I mean by it. When I first found out about peak oil, it puzzled me that the focus was solely on the top part of the graph, the peak itself. A raft of geologists, academics and writers were exploring the top of the classic bell curve; would it be a gentle descent, a 'bumpy plateau' or an abrupt cliff edge? No-one, however, appeared to be looking at the downward half of the graph. This struck me as being far more important than the peak itself, but it looked rather like the uncharted territory everyone was avoiding.

A society without access to fossil fuels would be able to do seventy to a hundred times less work than one with them, and would, by necessity, look very different from the present. Alongside the question of when peak oil might be reached is another equally important point, that of 'net energy'. Net energy, also known as 'Energy Return on Energy Invested' (EROEI) has been defined as "the energy delivered by an energy-obtaining activity compared to the energy required to get it". Oil production in the US in the 1930s had a net EROEI of over 100:1, meaning that for each unit of energy used in the extraction process, more than 100 were obtained. This is an incredible energy return, unprecedented in history. However, given the increasing amount of work we had to put into extracting oil and the increased refining needed due to the lower quality of the oil we found, by 1970 that had fallen to 30:1 and is now somewhere between 11:1 and 18:1. Globally, the average is around 20:1. This is mostly for extracting oil from mature fields. The EROEI for new fields appears to be much lower.

Wind, for example, has a net energy of 11:1 (although that ratio would be much lower if corrected for the backup systems needed for when the wind is not blowing), and photovoltaics between 2.5:1 and 4.3:1. Hydro is the highest, at over 23:1, but many of the planet's potential hydro sites are already developed, many existing hydro schemes are experiencing problems from silting, and drier summers due to climate change are also reducing output in some places. For example, Costa Rica's hydroelectric capacity fell by 25% in 2007 due to the dry summer. In terms of EROEI, it is the substitutes for the liquid fuels that make our society possible that are revealed to offer no substitute at all. Biodiesel has a net energy of about 2:1, ethanol from sugar somewhere around 4:1 (but as high as 8:1 in Brazil, owing to their favourable climate) and corn bioethanol varies between 0.8:1 and 1.6:1. None of these comes close to oil, and Charles Hall at the State University of New York argues that to offer any remotely viable contribution to society, a liquid fuel should not be dependent on subsidies from petroleum and should have an EROEI of at least 5:1. The decline in EROEI in our

energy sources, together with the combined peaks of oil, gas, coal, and uranium (probably in that order), means that we need to acknowledge that we are as energy-rich a society today as we are ever likely to be.

On further investigation, it turns out that a handful of people had actually begun thinking about what this journey 'down the slope' might look like. The first were Howard and Elisabeth Odum, who in their 2001 book *A Prosperous Way Down* wrote:

"That the way down can be prosperous is the exciting viewpoint whose time has come. Descent is a new frontier to approach with zeal. . . . If everyone understands the necessity of the whole society adapting to less, then society can pull together with a common mission to select what is essential. Presidents, governors, and local leaders can explain the problem and lead society in a shared mission. Millions of people the world over, if they see the opportunity, can be united in the common quest for a prosperous way down. The alternative is a world of selfish battles for whatever resources remain."

They argued for the need to prepare in advance for the inevitable decline in net energy availability. This echoes the Hirsch Report's stark statement that any societal-scale response to peak oil "needs to be initiated more than a decade in advance of peaking".

The term 'energy descent' was further developed by David Holmgren, the co-founder of permaculture, who in 2003 wrote: "I use the term 'descent' as the least loaded word that honestly conveys the inevitable, radical reduction of material consumption and/or human numbers that will characterise the declining decades and centuries of fossil fuel abundance and availability."

Most recently, Ted Trainer of the University of New South Wales has argued, in the essential 'Renewable Energy Cannot Sustain a Consumer Society', that while renewable energy sources will have a key role to play beyond the peak, the idea that a Western consumer society can continue, let alone grow while being powered entirely by renewables, is absurd, and that redesigning for a far lower energy world is inevitable. He writes:

"There is a widespread assumption that a consumer-capitalist society, based on the determination to increase production, sales, trade investment, 'living standards' and the GDP as fast as possible and indefinitely, can be run on renewable energy. . . . But if this assumption is wrong, we are in for catastrophic problems in the very near future and we should be exploring radical social alternatives urgently."

In the absence of a universally agreed definition of the term 'energy descent', I would define it thus: "The continual decline in net energy supporting humanity, a decline that mirrors the ascent in net energy that has taken place since the Industrial Revolution. It also refers to a future scenario in which humanity has successfully adapted to declining net fossil fuel energy availability and has become more localised and self-reliant. It is a term favoured by people looking towards energy peak as an opportunity for positive change rather than an inevitable disaster."

As Colin Campbell of the Association for the Study of Peak Oil explains, the important thing about energy descent is not when peak oil occurs, but rather the shift in perception that the Age of Easy Oil is drawing to a close. It is not so much the rate of change as the change of direction that is important. The concept of energy descent, and of the Transition approach, is a simple one: that the future with less oil could be preferable to the present, but only if

sufficiently numerous and diverse individuals in communities engage to apply creativity and imagination in the design of this transition.

We have a choice. We can descend the hill on which we are standing by harnessing imagination and drive comparable to what got us to the top in the first place. The reality is that the only way from here is down (in net energy terms), but that 'down' need not mean deprivation, misery and collapse. Trying to build a Heath-Robinson-style 'extension' to the hill (built on foundations of coal-to-liquids, tar sands and so on) - a rickety artificial slope that attempts to deny the geological reality of the hill itself - only means we'll have further to fall. The idea of energy descent is that each step down the hill could be a step towards sanity, towards place and towards wholeness. It is a coming to who we really are, similar to how members of a busy family rediscover each other during a power cut. Energy descent is, ultimately, about the ascension of other energies - the re-energising of individuals, communities and culture - and is the key to our realistically embracing the possibilities of our situation rather than being overwhelmed by the challenges.

Chapter 3: Why rebuilding resilience is as important as cutting carbon emissions

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What is resilience?

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The concept of resilience is central to this book. In ecology, the term resilience refers to an ecosystem's ability to roll with external shocks and attempted enforced changes. Walker et al. define it thus:

“Resilience is the capacity of a system to absorb disturbance and reorganise while undergoing change, so as to still retain essentially the same function, structure, identity and feedbacks.”

In the context of communities and settlements, it refers to their ability to not collapse at first sight of oil or food shortages, and to their ability to respond with adaptability to disturbance. The UK truck drivers' dispute of 2000 offers a valuable lesson here. Within the space of three days, the UK economy was brought to the brink, as it became clear that the country was about a day away from food rationing and civil unrest.

Shortly before the dispute was resolved, Sir Peter Davis, Chairman of Sainsbury's, sent a letter to Tony Blair saying that food shortages would appear in “days rather than weeks”. The fragility of the illusion that, as DEFRA said in a 2003 statement, “national food security is neither necessary nor is it desirable,” became glaringly obvious. It became clear that we no longer have any resilience left to fall back on, and are, in reality, three days away from hunger at any moment, evoking the old saying that “civilisation is only three meals deep”. We have become completely reliant on the utterly unreliable, and we have no Plan B.

The concept of resilience is distinct from the more-often-mentioned concept of sustainability. A community might, for example, campaign for plastics recycling, where all of its industrial and domestic plastic waste is collected for recycling. While almost certainly better for the environment as a whole, it adds nearly no resilience to the community. Perhaps a better solution (alongside the obvious one of producing less plastic waste), would be to develop other uses for waste plastics requiring minimal processing, such as tightly compressed building blocks or an insulating product for local use. Simply collecting it and sending it away doesn't leave the community in a stronger position, nor is the community more able to respond creatively to change and shock. The same is true of some of the strategies put forward by climate change campaigns that don't take peak oil into consideration. Planting trees to create community woodlands may lock up carbon (though the science is still divided on this) and be good for biodiversity, but does little to build resilience; whereas the planting of well-designed agroforestry/food forest plantings does. The Millennium Forests initiative missed a huge opportunity to put in place a key resource: we could by now have food forests up and down the country starting to bear fruit (both metaphorically and literally).

Economist David Fleming argues that the benefits for a community with enhanced resilience will be that:

- If one part is destroyed, the shock will not ripple through the whole system
- There is wide diversity of character and solutions developed creatively in response to local circumstances
- It can meet its needs despite the substantial absence of travel and transport
- The other big infrastructures and bureaucracies of the intermediate economy are replaced by fit-for-purpose local alternatives at drastically reduced cost

Increased resilience and a stronger local economy do not mean that we put a fence up around our towns and cities and refuse to allow anything in or out. It is not a rejection of commerce or somehow a return to a rose-tinted version of some imagined past. It is an acceptance of remarkably direct access to well-being and an approach to integration of the best we can recall and devise. What it does mean is being more prepared for a leaner future, more self-reliant, and prioritising the local over the imported.

The three ingredients of a resilient system

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According to studies of what makes ecosystems resilient, there are three features that are central to a system's ability to reorganise itself following shocks. They are:

- Diversity
- Modularity
- Tightness of Feedbacks

Diversity relates to the number of elements that comprise a particular system, be they people, species, businesses, institutions or sources of food. The resilience of a system comes not only from the number of the species that make up that diversity, but also from the number of

connections between them. Diversity also refers to the diversity of functions in our settlements (rather than just relying on one – say, tourism or mining) and a diversity of potential responses to challenges, leading to a greater flexibility. Diversity of land use – farms, market gardens, aquaculture, forest gardens, nut tree plantings, and so on – are key to the resilience of the settlement, and their erosion in recent years has paralleled the rise of monocultures, which are by definition an absence of diversity.

Another meaning of diversity is that of diversity between systems. The exact set of solutions that will work in one place will not necessarily work in other places; because of unique demographics and physical attributes, each community will assemble its own solutions, responses and tools. This matters for two reasons. Firstly because it makes top-down approaches almost redundant, as those at the top lack the knowledge of local conditions and how to respond to them. Secondly, because resilience-building is about working on small changes to lots of niches in the place, making lots of small interventions rather than a few large ones.

The term modularity, according to ecologists Brian Walker and David Salt, relates to “the manner in which the components that make up a system are linked”. Towards the end of 2007, the Northern Rock bank crisis led to major problems and uncertainty in the British banking system. It was caused by over-lending to high-risk house-buyers in the US thousands of miles away, but within a short period of time one system had knocked on to another and then another, showing how the globalised networks, often trumpeted as one of globalisation’s great strengths, can in fact also be one of its great weaknesses. The over-networked nature of modern, highly connected systems allow shock to travel rapidly through them, with potentially disastrous effects.

A more modular structure means that the parts of a system can more effectively self-organise in the event of shock. For example, as a result of the globalisation of the food industry, animals and animal parts are moved around the world, leading to increased occurrences of diseases such as bird flu and foot-and-mouth disease. Reducing animal transportation and reintroducing local abattoirs and processing would lead to a more modular system, with local breeds for local markets and a much reduced risk of disease spreading with the rapidity that we have seen in recent outbreaks.

When designing energy descent pathways for Transition Initiatives, the concept of modularity is key: maximising modularity with more internal connections reduces vulnerability to any disruptions of wider networks. Local food systems, local investment models, and so on, all add to this modularity, meaning that we engage with the wider world, but from an ethic of networking and information sharing rather than of mutual dependence.

Tightness of Feedbacks refers to how quickly and strongly the consequences of a change in one part of the system are felt and responded to in other parts. Walker and Salt write: “Centralised governance and globalisation can weaken feedbacks. As feedbacks lengthen, there is an increased chance of crossing a threshold without detecting it in a timely fashion.” In a more localised system, the results of our actions are more obvious. We don’t want excessive use of pesticides or other pollutants in our area, but seem happier to be oblivious to their use in other parts of the world. In a globalised system, the feedbacks about the impacts of soil erosion, low pay and pesticide use provide weak feedback signals. Tightening feedback loops will have beneficial results, bringing the consequences of our actions closer to

home, rather than so far from our awareness that they don't even register. When people live off the grid in terms of energy, they are more mindful about their consumption partly because they are closer to its generation – the feedback loop is smaller.

Life before oil wasn't all bad

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These are not new ideas; rather they are the unstated principles that underpinned how things always were until the Oil Age began. It can be instructive to look back into the history of our settlements to see how people employed ingenuity and common sense before cheap fossil fuels enabled us to do without them. During the 1950s and 60s in the UK there was a concerted effort to vilify the local, the small, the simple, the rustic, the 'old-fashioned'. It is a process that happened more recently in Ireland, and is happening aggressively now in China and India. Car good, horse-drawn cart bad; concrete good, cob bad; office job good, farming bad; TV good, hearthside storytelling bad. While not wishing to romanticise the past or paint an idyllic picture of localised economies, we have come to believe either that life before oil consisted of rolling around in the mud, incest, shoving young boys up chimneys and little else; or that it was some idyllic world where everyone respected their elders and had roses over the front door.

In fact there is much that we can learn from and reclaim in our history. People were generally far more skilled and practical, local economies were more diverse and resilient, and people more connected to where their energy and food came from. For example, in Totnes in Devon in the 1930s, the centre of town contained a number of allotments and market gardens, which provided most of the vegetables and some of the fruit consumed in the town. Apart from the railway station, all of the businesses were owned by local people. Contrast this with a recent survey by the New Economics Foundation which found that of the 103 towns and villages surveyed, 42% were what they called 'Clone Towns', which they defined as "one which had had the individuality of its high street shops replaced by a monochrome strip of global and national chains that mean its retail heart could easily be mistaken for dozens of other bland town centres across the county." Locally owned businesses are a dying breed, and we are only just starting to appreciate how important they are, and the resilience they give to local communities and their economies.

Of course, there was much that was miserable and debilitating, and in many ways there was a lack of personal choice that today we would find strange, if not intolerable. Lives were shorter, and less "soft" as George Monbiot writes. However, while not for a second advocating that we model our future on our past, I would agree that we ought not throw the baby out with the bathwater. Take a walk around the endless streets, shopping centres, car parks and tarmac expanses of present-day London, and then compare them with this section from Charles Dickens' *Great Expectations*:

"Wemmick's house was a little wooden cottage in the midst of plots of garden, and the top of it was cut out and painted like a battery mounted with guns. . . .

'At the back, there's a pig, and there are fowls and rabbits; then, I knock together my own little frame, you see, and grow cucumbers; and you'll judge at supper what sort of a salad I can raise. So, sir,' said Wemmick, smiling again, but seriously too, as he shook his head, 'if you

can suppose the little place besieged, it would hold out a devil of a time in point of provisions.’ Then, he conducted me to a bower about a dozen yards off, but which was approached by such ingenious twists of path that it took quite a long time to get at; and in this retreat our glasses were already set forth. Our punch was cooling in an ornamental lake on whose margin the bower was raised. This piece of water (with an island in the middle which might have been the salad for supper) was of a circular form, and he had constructed a fountain in it, which, when you set a little mill going and took a cork out of a pipe, played to that powerful extent that it made the back of your hand quite wet.

‘I am my own engineer, and my own carpenter, and my own plumber, and my own gardener, and my own Jack of all Trades,’ said Wemmick, in acknowledging my compliments. ‘Well; it’s a good thing, you know. It brushes the Newgate cobwebs away . . .’”

Although fictional, Dickens is painting a picture of areas within walking distance of central London around 1870. Wemmick was simultaneously a consumer and a producer. Most of us have long since abandoned the latter. Nowadays we might call Mr Wemmick’s set-up ‘a low-impact building constructed from local materials set within a biodiverse urban edible landscape integrating protected cropping, aquaculture, chicken and pig tractoring’. By 2008 it is probably a car park.

The cake analogy

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I like to use the analogy of a metaphorical cake. In Totnes, as an example, prior to the advent of the railways in the 1850s, the town and its hinterland were largely self-reliant. Its milk, cheese, meat, seasonal vegetables and fruit, as well as the bulk of its building materials and some of its fabrics were all produced locally (until the Industrial Revolution, when fabric production was moved to the north of England). What came in on small sailing boats up the River Dart to be offloaded at the Quays were Baltic timber, apples for cider from Brittany (the area drank and exported a lot of cider but didn’t grow enough apples) and some wool. If, for some reason, those boats stopped coming, the area would manage. It was resilient. The cake was produced locally. and the icing and the cherries on the top were imported.

Now it is the other way round. The cake is imported from wherever in the world it can be found cheapest, and local agriculture produces the icing and the cherries on top. We have moved from resilient to precariously unresilient. The process of dismantling the complex and diverse rural economy that supported communities over centuries, and that was unconsciously designed on the principles of resilience has, thanks to the relentless forces of globalisation, been dismantled and thrown into the large yellow skip of history over the last 40-50 years. As ecologist Aldo Leopold observed, “Who but a fool would discard seemingly useless parts? To keep every cog and wheel is the first precaution of intelligent tinkering.” We have kept very few of the parts, and the idea that we might need some of them again is only just starting to emerge.

Echoes of a resilient past

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Two examples from Totnes's recent past offer both wider insights into how our settlements functioned prior to cheap oil, and some of the strategies and infrastructure they may need to consider beyond it. In the middle of the town you'll find Heath's Nursery Car Park. While to the modern eye it looks like any other car park, what it replaced is extraordinary. It used to be a vibrant and productive urban market garden, as were another two of the town's car parks. This is not unique to Totnes; it is a pattern you'll find in any settlement. The orchards, the market gardens, the coppices, the nut trees and the fish nurseries were all grubbed out and replaced by the relentless surge of urbanisation which transformed our towns and cities. Now their legacy can only be found in the street names, 'Orchard Rise', 'Nursery Lane', 'Sawpit Lane'. As James Howard Kunstler is fond of telling us, places are often named after what was destroyed to make space for them.

Heath's Nursery was begun by George Heath in 1920, when he bought land in the middle of the town to start a nursery. In Totnes Museum is an invoice from that year for the dismantling, moving and re-erecting of a glasshouse, the first to go up on the site. In the 1930s the business expanded, as Heath's son, also called George, came into the business, and a shop premises on the High Street was obtained.

The market garden was in two parts: the first was a large open area with one heated glasshouse where seedlings were started; the second, below it, had a series of glasshouses which were also heated. George Heath (the son) also kept pigs on the site from 1940 until the late 1950s. People I have spoken to who were at school then remember being given time off class to walk down to Heath's with the pig swill from the school kitchen, and swill was also collected from other local schools, shops and hospitals. Much of the fertility came from the local bacon factory, either in the form of pig manure or (vegetarians might choose to look away at this point) as congealed blood which was added to the water used in the glasshouses as a nutritious plant feed.

The nursery produced tomatoes, beetroot, cabbage, lettuce, runner beans, broad beans and also a wide range of flowers, such as chrysanthemums and dahlias, all of which were sold through the shop on the High Street. They didn't grow crops such as potatoes, as these could be grown far more competitively by local farmers, and in essence, they took up too much space. Heath's also sold seed potatoes and a large range of packeted seeds which were well patronised by local gardeners. Other ways in which the nursery was linked into the local economy included the use of wood from the local sawmill ('Reeves') to make their seed trays and the selling of produce, such as strawberries, from other local growers.

Running a nursery like Heath's was hard work. This was a seven-days-a-week business, but it performed an invaluable service to the town and provided a reasonable living. In the early 1980s when Mr Heath retired, neither of his sons wanted to take on the business and it was gradually wound down. The glasshouses were dismantled (around the same time as they were also being dismantled in the town's other market gardens) and the land was sold to the Council, which turned it into a car park. Imagine the wonderful soil that was lost! The site is marked as productive land back as far as records exist.

In 1980 George Heath was seen as being behind the times, but he was actually about thirty

years ahead of the times. His model of a localised food system that was post-carbon and based on zero food miles (indeed, it allows us to coin the term 'food feet') is one we will have to rediscover and put back in place over the next few years. But often, owing to development, this option is closed to us. Some of the site of Heath's Nursery is currently being developed, the possibility of its reinstatement gone for the foreseeable future.

Going back further in local history, we find another story with insights into how society functioned before oil, as well as how it might re-organise itself beyond it. The Blight family business was horses, in particular draught-horses, which provided much of the town's horsepower (literally) prior to the arrival of the internal combustion engine. In the same way that a globalised, energy-intensive infrastructure now exists to keep motorised transport functioning, before the 1930s a localised, low-energy, diverse infrastructure existed to support the horse-powered economy. One could find a blacksmith within at most a five-mile radius of anywhere. Also there were saddlers, harness-makers, ostlers, wheelwrights, grooms, ferries, coachmen and vets.

The Blights' business was set up by David Blight, who started his business providing horsepower for the cutting of the South Devon railway line in the 1870s. As well as that, he also provided horses for the tramway that then ran from Totnes station to the Quays. When he died in 1889, his son Robert took over the business.

At its peak, the Blights owned eight horses, which were kept stabled in the middle of the town in what was, to all intents and purposes, the back room of their house. At that time, most of the hotels in the town had their own stables in order to be able to provide horses for carriages passing through the town. The Blights' haulage business ran until 1930, when the Totnes Fire Brigade, one of their main customers, upgraded to a motorised fire engine. At this point Robert Blight sold his interest to a local transportation company and became a manager for them.

What is interesting to me about the Blights, like George Heath, is the insight they offer into the infrastructure that was necessary before the internal combustion engine. If there was a fire, the Fire Brigade needed something to pull their engines, and they needed it urgently. Bringing the horses in from the surrounding fields would have been too time-consuming. Even though the horses were basically stabled in the Blights' house, they were a key part of the town being able to function. With the arrival of the car and the tractor, the infrastructure that supported horses contracted rapidly.

I asked a local farmer, who grew up farming in the 1930s with horses about four miles from Totnes, whether he mourned the passing of working horses. He replied: "It depended very much on the individual. If economics were your objective, then the change away from horses brought great pleasure. If you were artistic and poetic, it was a shame. I started retiring my horses in 1934 when the first tractor arrived, and I just stopped replacing them as they died out. The horsemen just became tractor drivers."

We can see the resilient rural economy, within which both of these examples sat, as being like a web of strings that connected all the various elements of the community together, similar to the 'Web of Life' exercise (see page 60). This web of connections was, while complex and resilient, very fragile. In effect, the Age of Cheap Oil took a pair of scissors to this web, replacing these functions with more energy-dependent versions. It is easy to understand why

this happened and why people embraced it. Most of us would have done the same, had we lived in that time. It saved time, was less hard work, offered new opportunities, development, and was seen as providing a better life for the next generation. No one could have foreseen the implications fifty years down the line.

It is easy to forget the circumstances that led to many changes that we now take for granted. The move away from coal, for example, was driven as much as anything by the fact that on a bad day, city dwellers couldn't see more than a few feet in front of them, and thousands died every year from the effects of smoke inhalation. However, now it is becoming clear that the cheap oil required to sustain our oil-dependent lifestyles is not going to be with us indefinitely, we find ourselves looking around at the severed strands of web and starting to wonder which strands might reconnect to which others. The Transition approach is one of re-weaving this web, and remaking the connections which will be needed by a resilient post-oil economy. Every new harmonious relationship we forge is a step back to sanity.

Can we learn anything useful from Britain's last 'wartime mobilisation'?

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Can any lessons be learned from Britain's most recent national 'Powerdown', World War II? While there are clearly many differences with the kind of proactive energy-descent planning this book advocates, there are also relevant similarities. We are clearly a very different society now, with different skills, expectations and values, and the nature of the challenge facing us is very different; yet even so, a look back to that time can be instructive. As Andrew Simms of the New Economics Foundation observes,

"Recent history demonstrates that whole economies can be re-gearred in short periods of time, which is exactly the demand global warming makes of us. . . . Could it be that the experience of social and military mobilisation in wartime might answer the biggest question to do with global warming: are we capable of changing our lifestyles and economies enough and in time to stop it?"

There is much that can be learned from both the run-up to the war and from the 1939-45 period itself. In the light of the need for broad engagement across sectors in response to a life-threatening situation, we can learn some lessons about how quickly governments can respond (when they have to) by looking at how the British Government prepared for the impacts war would have on food production.

In April 1936, with war against Germany a possibility but by no means a certainty, an Act of Parliament set up two committees: one was commissioned to design and prepare a scheme of food rationing, and the other to propose the commodities to be given priority in a programme of storing food. This led to the creation of the Food (Defence Plans) Department in the Board of Trade, which became the driving force in preparing the food sector for war. Even so, Alan Wilt argues, it was not until 1940 that the government produced a long-term policy. Committees were set up in 476 districts nationwide to co-ordinate the reorientation of agriculture. As well as attempting to increase levels of stored food, increasing home food production became a major concern. In 1936, two-thirds of Britain's food was imported and

much of the nation's productive land was under pasture.

By 1944 the amount of land under cultivation had increased from 12.9 million acres in 1939 to 19.8 million, food production had risen 91% and in effect Britain was able to feed itself for approximately 160 days a year rather than the 120 days it had been in 1939. Food imports to the UK halved between 1939 and 1944. Local authorities set up horticultural committees to advise people on growing food, complemented by a huge programme of promoting the virtues of thrift and economy, as well as teaching practical skills. Some of the posters produced at the time are great examples of how to promote conservation, frugality and food production.

In 1942, Bristol (for example) had 15,000 allotments, and over half the nation's manual workers had an allotment or garden, producing around 10% of the nation's food. People sometimes remark that during the war, allotments and back gardens 'only' produced 10% of the national diet, but the important point is that the 10% it produced was the 10% that kept the nation healthy. While agriculture grew the carbohydrates and the fats, it was the back gardens that produced most of the fresh fruit and vegetables.

Food rationing was introduced on January 8th 1940, and initially applied only to bacon, butter and sugar, before being expanded to cover most foods (apart from fish and chips!) as well as fuel and clothing. One of the successes of rationing was that it rebalanced inequalities in diet. While the wealthy saw their diet restrained, for the poor, particularly in industrial centres, diet improved significantly from the pre-war years. Total food consumption fell 11% by 1944, as did meat consumption. Infant mortality rates also fell, and arguably the UK's general state of health was never better, before or since. In terms of car use, petrol rationing, introduced in 1939, was restricted to 1,800 miles per year for non-essential users, then gradually reduced until 1942 when individual allocations were abolished. Between 1938 and 1944 there was a 95% drop in the use of cars in the UK.

Much can be learned from the experience of World War II regarding how governments prepare for such a transition. The British Government was able, between 1936 when the Food (Defence Plans) Department was set up within the Board of Trade and 1939 when the war began, to co-ordinate a response which was able (just) to support the nation. The most important lesson from the war years, according to Andrew Simms, is that "when governments really want to, they can do almost anything, including good things."

Clearly peak oil and climate change have yet to engender in the population or within government a sense of urgency anywhere near that of a Nazi invasion. However, as the Hirsch Report states, by the time a government considers it politically expedient to take the scale of action prompted by peak oil, it is too late. In terms of the model in Figure 8, the response during World War II was arguably closest to Heinberg's 'Powerdown', although the government's emphasis on local action and reskilling places it further round towards his 'Building Lifeboats'. Alongside the war effort, the building of resilience became a national priority, and was actively encouraged and facilitated by national government.

Chapter 4: Why small is inevitable

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Relocalisation

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A growing number of writers and thinkers now argue that the decline in availability of liquid fuels and their rising price will inevitably lead to the local scene and scale becoming more important. As David Fleming writes, "Localisation stands, at best, at the limits of practical possibility, but it has the decisive argument in its favour that there will be no alternative."

A recent report exploring the potential relocalisation of the Bay Area in California, US defines relocalisation thus:

"The process by which a region, county, city or even neighbourhood frees itself from an overdependence on the global economy and invests its own resources to produce a significant portion of the goods, services, food and energy it consumes from its local endowment of financial, natural and human capital."

I would argue that we need to be building the capability to produce locally those things that we need and can produce locally. It is, of course, easy to attack this idea by pointing out that some things, such as computers and frying-pans, can't be made at a local level. However, there are a lot of things we could produce locally: a wide range of seasonal fruit and vegetables, fresh fish, timber, mushrooms, dyes, art of all kinds, entertainment, many medicines, furniture, ceramics, insulation materials, soap, bread, glass, dairy products, wool and leather products, paper, building materials, perfumes and fresh flowers - to name but a few. We aren't looking to create a 'nothing in, nothing out' economy, but rather to close economic loops where possible and to produce locally what we can.

This raises enormous questions as to what a more localised manufacturing sector would look like, and the practicalities and economics of rebuilding a zero-carbon (or ideally carbon-negative) localised manufacturing sector - a sector that has been, over the past two decades, largely dismantled and outsourced to China. Although China has become a voracious consumer of oil, coal, gas and most other raw materials, more than half of the energy and raw materials it takes in are used to make products for export. When considering the reduction of the UK's carbon emissions, it is worth remembering that at the moment we don't factor in what they would look like if we started making things again, as we shall doubtless have to. The rethinking of industry on this scale and the practicalities thereof are beyond the scope of this book: I am not going to describe how it should happen, but rather to say that it will inevitably need to happen.

In our current society, almost everything is working against the kind of local resilience-building discussed in Chapter 3. We had a very clear example of this in Totnes when we asked the Regional Development Agency if they would fund our Local Food Directory: we were told that they couldn't, because under the rules of the World Trade Organisation they are unable to fund anything that promotes the idea that local produce is in any way superior to internationally sourced produce.

The move away from the local in the developed world was only partly by popular choice: some very powerful intentions made it happen, and are still rampantly at work here and elsewhere. This is especially the case today in developing countries such as India, where people are being driven off the land and rural economies are systematically undermined. Ultimately, as availability of fossil fuels begins to contract so will our ability to move goods around, and inevitably, we will need to start building the infrastructure for local provision. It is not something we have a choice over - it is an emerging reality; a 'when', not an 'if'.

There will always be trade between nations, but we will increasingly move towards a situation where more of our core needs are locally sourced rather than imported, and the distances from which we import goods will contract. There is a far stronger case for importing computers and electronics than apples and chicken. Water and food are the most sensible places to begin rebuilding community resilience, but building materials, fabrics, timber, energy and currencies follow soon after.

The argument for decentralised living can be traced back through the communities movements of the 1960s and 70s all the way to Ebenezer Howard and William Morris in Victorian times. People such as Helena Norberg-Hodge, Paul Ekins and Kirkpatrick Sale have more recently been arguing that the most sustainable scale of living is the local scale, and that the key to a sustainable future is the devolution of power back to communities. It has been a long-running debate, although, without external circumstances (in particular peak oil and climate change) coming to bear on the matter, it is likely that the local/global debate would end up as just that - a debate - as the forces behind globalisation are much more powerful than the forces for localisation.

Others, such as environmental activist and writer George Monbiot, have argued against the principle of blanket localisation, arguing that it is in no one's interest. The world is not equally endowed with minerals and other raw materials, so it makes sense for each place to be able to specialise. Not every locale can manufacture saucepans, for example. Monbiot has argued that the principle of complete localisation is "coercive, destructive and unjust", and that "the money the poor world needs has to come from somewhere, and if our movement rejects trade as the answer, it is surely duty-bound to find another." The point is that we are not talking about complete localisation, but rather about the building of resilience in both worlds, North and South - two processes running in parallel and in a mutually supportive way.

For Vandana Shiva, the strengthening of local economies in the developing world can only happen if agriculture relocates in the West too. They are mutually intertwined. As she told the 2007 Soil Association conference:

"The future of the world in farming is to produce more food in diversity, locally. And that can't be done without substituting fossil fuels for renewable energy, including human energy. Then for the first time in the last 500 years since colonialism split us into the North and South, the colonised and the coloniser, we actually have the opportunity to be one family practising a one-planet agriculture."

As Vandana Shiva also points out, sustainable indigenous economies do not airfreight their produce. By the time an area is doing that, the indigenous farmers are usually long gone, cleared off the land for intensive export-driven agriculture. That's not to say that we should all close off from each other, rather that we should find more equitable and useful ways of

relating to replace the unequal exchanges of 'stuff', which perpetuate rather than supersede the legacy of colonialism.

For years people have argued over the economic advantages and disadvantages of localisation. Peak oil puts an end to that debate. As David Korten puts it in his recent book *The Great Turning*:

"People will say that 'Korten wants to change everything'. They miss the point. Everything is going to change. The question is whether we let the changes play out in increasingly destructive ways or embrace the deepening crisis as our time of opportunity. . . . It is the greatest creative challenge the species has ever faced."

When peak oil is dropped into the mix, localisation is no longer a choice - it is the inevitable direction in which we are moving, one we can do nothing about, other than to decide whether we want to embrace its possibilities or cling to what we perceive that we are about to lose. The Oil Age can be seen as a 200-year period which enabled us to move away from a primarily local focus and then to move back to it again.

The principal reason for this is transportation. Peak oil is primarily a problem of liquid fuels, and liquid fuels are rarely used in the UK now to generate power. Coal tends to be used to generate electricity, gas for power and also for domestic heating, but the liquid petroleum products are key to transportation. In 2004, 74% of petroleum products were used for transportation, and figures for the following year show that nearly all (98.8%) of energy consumed by the transport sector was petroleum. Some of this consumption is essential, such as emergency services, public transport and agriculture, but much of it has been necessitated by work options, settlement designs, the systematic undermining of local economies over the past 50 years, and our deeply ingrained cultural perception that we have the right to go where we want, when we want, and how we want. As you can see in the quotation in the sidebar opposite, the availability of cheap liquid fuels has also allowed us to design a food supply system in which huge amounts of energy are used moving food and other goods around just for the sake of it. As Herman Daly puts it: "Exchanging recipes would surely be more efficient."

Writing in the *New York Times*, Fareed Zakaria recently wrote: "You cannot switch off those forces [of economic globalisation] except at great cost to our own economic well-being. Over the last century, those countries that tried to preserve their systems, jobs, culture or traditions by keeping the rest of the world out stagnated. Those that opened themselves up to the world prospered." While there is much about this statement that is contentious, its principal weakness is its reliance on cheap liquid fuels. Nothing can keep the 30 million cars and just over 2 million lorries on the UK's roads indefinitely, and by extension, the more than 600 million cars in the wider world. Nothing. Complete reliance on road transport and centralised distribution are economic globalisation's Achilles' heel. Various 'alternative' fuels are proposed, generally by those for whom the 'viable mitigation option' of systematically weaning ourselves off private transport and centralised distribution does not enter the frame; but as we shall see, they fall short when examined critically.

The two most widely touted examples of alternatives to liquid fuels are:

Biodiesel

Initially, this sounds like a great idea. You grow crops, you press the oil from them, you run

cars on it. In theory it is carbon neutral, and creates new livelihoods for farmers. The reality is somewhat different. To start with, there simply is not the land available to do it. To power the current national fleet would need almost 26 million hectares of arable land. The problem is that the UK only has less than six.

The ethical issue that arises early in any examination of biofuels is the conflict between the use of land for food or for fuel crops. In the starkest terms, the question is whether we eat or whether we drive. With 800 million people malnourished in the world, this is a vital question. The worst example of this is corn bio-ethanol in the US, the increasing demand for which has driven the price of corn up so far that there have been riots in Mexico, with people unable to afford corn for tortillas. The land used to grow biofuels also reduces the amount of land available for growing grains for human and (far less efficiently) animal feed. Biodiesel isn't as bad as corn bio-ethanol, but almost. In any sane society, food growing should take precedence over liquid fuels for cars every time. As David Strahan, author of *The Last Oil Shock*, succinctly puts it, "Even if we devoted all our cropland to biofuel production we would only produce a quarter of our current fuel consumption. We could all starve to death in a traffic jam."

The last study that was done on whether the UK could feed itself from its land mass was in 1975. It found that it was theoretically possible, but only if the diet contained a lot less meat, was similar to that of World War II, and if a lot of land not currently used were brought into production. The study concluded: "With proper planning, a little self sacrifice by the more carnivorous, and a joint effort by all sections of the community, we can build a better-fed and more beautiful Britain in the future." No mention of spare land for biofuels there.

Advocates of biodiesel come at this the wrong way round. We need to prioritise, and we need a Royal Commission on Food Security (as proposed by MEP Caroline Lucas) to set out those priorities. Food first, then medicinal plants and materials, then fabric crops, then building materials, and down near the bottom (just slightly above building supercasinos) biofuels, if - and it's a big if - there is any land left.

Hydrogen

Hydrogen is the science fiction fantasy of energy systems. It promises a lot: it is bold, shiny, somehow rather intrepid and of great appeal to boys of a certain age who like gadgets and toys. But like much science fiction it is a fantasy, destined to look faintly ridiculous to future generations: an illusion devoid of substance. Start looking closely, and its failings stack up rather quickly. Its weakness is that it is not an energy source, but an energy carrier. In order to obtain pure hydrogen, we need to run electricity through water. Hydrogen is not something one finds lying around in pools just below the Earth's surface from which it can be conveniently harvested and poured into our fuel tanks. The problem arises in how we generate that electricity. David Strahan has estimated that just running the UK's cars on hydrogen would necessitate "67 Sizewell B nuclear power stations, a solar array covering every inch of Norfolk and Derbyshire combined, or a wind farm bigger than the entire southwest region of England" - none of which is desirable nor feasible, and any renewable energy thus generated would be more wisely used in the residential sector.

In oral histories I have done locally around Totnes, one of the recurring themes is how during

World War II, when petrol rationing came in, people became far more reliant on those around them: the farmers, the craftspeople, the next-door neighbours. As the price of liquid fuels begins to rise here, I believe that we will see the focus returning once more to the local. As the forces that have undermined and ravaged local economies begin to wane, we will see a resurgence of the human-scale, of the appropriately scaled. That's not to say that some importing and exporting won't happen; it always has and it always will. This is a good time to be investing in commercial-scale wind-powered sailing ships (indeed, some people have begun to do so). As the price of energy rises, it will be interesting to see what first becomes viable to produce locally again. The solutions that emerge will depend on our collective efforts, and on other local circumstances such as the availability of arable land and other resources.

It is clear that throughout history it made more sense to produce what was possible locally, and to import luxury goods and the few things we were unable to produce ourselves. Indeed, to do otherwise was utterly impractical and financially out of the reach of most people. The key issue here, once again, is resilience. With that resilience in place, if computers and plastic toilet brushes stop coming in, we'll still have sufficient food, shelter, fuel, basic goods and medicines to get by. Conditions would not be ideal from our current perspective, but neither would they be catastrophic. As in most towns and villages prior to 1850, imports would please and distinguish their owners, and provide products and materials we are unable to produce here, but without which we would manage, without the risk of destitution and starvation.

To recap, given that our current globalised/centralised supply systems are entirely dependent on cheap liquid fossil fuels, and the uninterrupted supply of those fuels and their continuing cheapness are increasingly in doubt, we need to focus on the creation of local production systems. Unfortunately they have been systematically and relentlessly vilified and undermined over the last sixty years. As James Howard Kunstler has written, the future will be "increasingly and intensely local and smaller in scale". However, I do not wish to be seen as idealising local communities: I have lived in deeply insular rural communities, and am familiar with their not-so-good as well as their good qualities. The whole person paradigm, if it takes root, might change all that.

In the same way that the privations of World War II led to a renaissance of the fortunes of British farming (still talked of as a 'Golden Age'), peak oil and gas could lead to a renaissance of agriculture and of local low-impact manufacturing in the UK. We cannot go back, nor would we want to. We need not all re-learn Morris dancing, deprive women of the vote, or re-embrace feudalism. We can adapt our culture to a more local context with creativity, and the results will be beyond our current imaginings.

What is inevitable, though, is the return of the local and the small-scale, and the turning away from the globalised. This will not be an isolationist process of turning our backs on the global community. Rather it will be one of communities and nations meeting each other not from a place of mutual dependency, but of increased resilience.

The dangers of clinging to the illusion of large-scale

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Moving towards the kind of low-energy, more localised future outlined in this book is not, of

course, the only option on the table. Indeed it is, at present, a table groaning under the weight of various impractical and potentially nightmarish solutions. It is worth pausing here to consider the powerful trends and forces at work taking us in an altogether different direction. There are two Transitions at work in the world: that which is the subject of this book, and another far larger, more powerful and better resourced one, which is rapidly dismantling what resilience remains, under the guise of economic globalisation and growth. Although the world's future supplies of cheap oil and gas are beginning to look very vulnerable, there is probably enough coal to make the term 'end of the fossil fuel era' somewhat redundant.

There is great debate over the oft-cited 'fact' that the world still has many hundreds of years of coal left. Many nations that previously declared huge reserves of coal are now downsizing their reserves hugely. However, the likelihood is that there is still enough to irreversibly damage the climate and, via the process of converting coal to liquids, to keep the developed nations which can afford it motoring for some time yet. Indeed, the evidence that the UK Government has decided that a good part of the UK's future energy security lies in a revival of the coal industry appears to be mounting. As Jeremy Leggett puts it, deciding to use the world's remaining coal reserves is to take up the challenge of trying to prove the world's climate scientists wrong. It is not a contest we have much chance of winning.

If everything is left to a market unrestrained by stringent international climate change legislation, supplies of liquid fuels will be extracted from wherever they can be squeezed in a futile effort to meet demand `a la Hirsch. We are already seeing clearance of rainforest and other ecosystems in South Asia to plant palm trees for biodiesel, to be exported to the West as a 'green' fuel. We are seeing a rapidly accelerating installation of coal-to-liquids technology (making petrol from coal) around the world. We are seeing the gap opening up in the UK's gas supplies being filled by an increased consumption of coal. In the winter of 2005-6, when the UK faced a substantial gas shortage, it only got through the winter by burning 18% more coal than it would otherwise have done. We can see the growing demand for liquid fuels in China leading to their making oil access deals with governments and regimes that our foreign policy wouldn't allow us to. Keeping our petrol tanks full is a dirty business.

If we are unable or refuse to acknowledge the constraints that peak oil is imposing on us, we will desperately attempt to keep the economic growth show on the road for as long as possible. We will see, indeed we are already seeing, biofuels production on a staggering scale, requiring large biodiesel refineries. We will also see, in parallel, rates of malnutrition and starvation rise sharply as more and more land is taken out of food production. We are seeing a vicious example of this now in Mexico. The Cantarell oil field, responsible for 60% of Mexican oil production, has begun the plunge into terminal decline. The revenue for 40% of Mexico's public funding comes from the sale of that oil to the United States. Cantarell's depletion rates are staggering. It fell around 60% from its peak between 2006 and 2007, and is estimated to fall 75% by the end of 2008.

At the same time, the US uses 20% of its corn harvest to make corn ethanol in an attempt to boost energy security. As its oil imports from Mexico continue to fall, the pressure will be for the US to produce more ethanol to fill the emerging gap, leading to falling and increasingly expensive corn imports for Mexico.

Perhaps carbon capture and storage (CCS), which, in theory, captures the CO₂ from coal burning and stores it under the sea, will work, and coal will be our saviour. However, CCS is

still at the experimental stage, and even if it does work, there are doubts around it being rolled out in time, about there being enough coal to make it worthwhile, and about its cost.

Our failure to adequately address the issue of climate change will have had clear consequences, with significant changes to the UK coastline and increasing extreme weather episodes, and severe ecological breakdown, mass migration and economic disruption elsewhere. Increased military spending will be required in order to sustain the dwindling supplies of conventional oil and gas. Dick Cheney's "war that will never end in our lifetimes" will have come to pass. It is a nightmare scenario, to be avoided at all costs.

Where we might be heading in terms of large-scale agriculture can be glimpsed in an article in the Sunday Times by Richard Girling. He argues that the future of agriculture, in the light of population growth, global warming and the energy gap will necessitate the end of farming as we know it. We can say goodbye to cows standing in fields chewing the cud. We shall inhabit, he predicts, a "drive-thru, wipe-clean, prairie Britain". The countryside will be filled with "identical suburbs of identical brick-box housing", "the drone of traffic", and "vast fields of identical crops". The pressure to feed more people on less land will necessitate putting productivity above all other considerations. "There are only two ways to get more food from the soil: by breeding heavier-yielding crops or by cultivating more land," Girling argues, although, as we shall see in Part Two, there are more than just the two ways he identifies. He quotes Mark Hill of Deloitte, who says: "The challenge to farmers is to double food production in the next 40 years. How can they do it?" How indeed.

Girling argues that we will, as in 1939, need to plough up all the land where it is feasible to do so, massively reduce the amount of livestock, and embrace genetic crops as the only way through these converging challenges. This is really a point at which Einstein's saying that "problems cannot be solved by the same level of thinking that created them" becomes useful. Trying to map agriculture's journey through this transition will not be possible without some fresh thinking and an approach which actually involves asking the right questions.

Yes, of course more land will need to be put into production. The ridiculous concept of land being 'set-aside', now thankfully being phased out, was a strange side-effect of a country with too much oil and supermarket shelves groaning with a dazzling array of cheap imported goods to choose from. Reducing the amount of livestock will also be inevitable, as large-scale meat production is an absurd and unsustainable waste of resources. When thinking of what a post-peak agriculture will look like, it is important to question whether, as the Once-ler in The Lorax might have put it, "biggering and biggering" what we have done thus far is really the best idea. The bottom line is that Girling's vision, however inevitable he might paint it as being, offers no resilience, places all our eggs in one basket, leaves us at the mercy of international events and economics, perpetuates our collective de-skilling, offers meaningful work to no one, maintains and possibly even increases the oil dependency of agriculture, destroys biodiversity, does nothing to strengthen economies, fails to make us any healthier, and would be soul-destroying. Yes, there may be some trends towards large-scale agriculture, but they are not, by any means, inevitable.

Top-down or bottom-up?

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All of this reinforces why it is so important that we weave peak oil and climate change together in our decision making, and see them as being intrinsically linked. They are not separate issues, and as we saw in Figure 7, it is only by considering them together that our solutions will have any hope of being effective. Transition Initiatives will function best in the context of a combination of top-down and bottom-up responses, none of which can address the challenge in isolation.

The reality is that many of these responses are on their way, and are moving faster than we would have thought even a year ago. Serious thought appears to be being given at governmental level to the introduction of carbon rationing. After all, as David Fleming (the 'inventor' of Tradable Energy Quotas) observes, as oil and gas production start to deplete, their rationing will be inevitable: either an equitable rationing system will be introduced, or energy will be rationed by price, which is socially divisive. It is not a question of if, but when rationing begins, and the sooner we do it, the gentler it will be. There is increasing pressure and international diplomacy around the need for strong international action on climate change, way beyond the woefully inadequate Kyoto Protocol. On an individual level, we should offer our support to any campaigns that drive forward any of the above, and direct our spending power when we go shopping to support businesses with a genuine commitment to lower energy use and sustainable business practice, in particular those whose practices build local resilience.

However, the important point is that we don't need to wait for the above. Indeed, successful national and international responses are all more likely in an environment where community responses are abundant and vibrant. We can't wait for governments to take the lead here. The UK Government's position on peak oil (i.e. complete denial) is proof of this. The Department of Environment, Food and Rural Affairs (DEFRA), put it succinctly in 2002 when they wrote: "Sustainable development cannot be imposed from above. It will not take root unless people across the country are actively engaged."

Where does government fit in?

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It appears to me that there is a fracture in politics. The UK Government looks to the public and sees them as disengaged, apathetic and uninterested in the democratic process. The public often sees politicians as uncaring careerists who don't have any interest in them or what is actually happening in their communities, apart from once every four years when an election comes round. Local planning consultation processes generate a lukewarm response at best. All this is happening at a time when, as we have seen, we need to be generating a response on a previously unseen scale: mobilising individuals, communities, businesses, organisations and government institutions to work as effectively together as possible in order to maximise the chances of a smooth transition.

Governments generally don't lead, they respond. They are reactive, not proactive. It is essential that we remember that many of the decisions they will inevitably have to make as

part of preparing for Powerdown are perceived to be pretty much inconceivable from an electoral perspective. Take carbon rationing, for instance: few people would be brave enough at this stage to run for government on a ticket which promises people less every year - less car use and less energy availability. However, I see no reason why these ideas could not be made attractive to the electorate by the right candidates. If, through the creation of an Energy Descent Plan which has engaged the community and which offers a positive vision of a lower-energy future, communities have set out where they want to go, then a very dynamic interface is created between communities, local and national government. Communities could set the agenda, saying to government, "Here is our plan: it addresses all of the issues raised by the coming challenges of climate change and energy security, and it also will revitalise our local economy and our agricultural hinterland, but it will work far better if carbon rationing is in place, and if the true costs of fossil fuels are reflected in goods and services." The fear of change is removed for government, and they become swept along in a huge movement for change. Previously non-vote-winning policies become the norm.

Recently, corporations have begun saying to the British Government, "We want you to start taking strong action on climate change, because we need to be able to start planning for this, and we need to know the framework within which we are operating." Communities should be doing this too. We have to remember that we can do a huge amount without government, but we can also do a great deal more with them.

Summing up Part 1: The oil age draws to a close

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We have seen in this first part of the book that the converging challenges of peak oil and climate change mean that change - on an almost unimaginable scale - is coming whether we want it or not. There is no longer a cosy 'if' to wrap around ourselves. We cannot adequately address the challenge of de-carbonising our society without also addressing the need to rebuild local resilience, to create local economies capable of supporting us in a post-peak world. Cutting carbon emissions, although deeply urgent, is not enough on its own. I have delivered this message many times, in talks, courses and blog posts, and have yet to encounter anyone who thinks that stronger local economies, increased local democracy, strengthened local food culture and more local energy provision are a bad idea. Most of us instinctively know that we are living beyond our collective means, and have some sense of what we need to do about the systems on which we rely. Fewer have ideas about what we need to do about ourselves, but some have developed robust and attractive ones we should adopt and promote.

The key message here has been that the future with less oil could be better than the present, but only if we engage sufficient information, creativity and imagination in the design of this transition. For that we need to draw together a diversity of individuals and organisations that has seldom been, if ever, managed in the past. Above all, we need a view of human beings that enables us to value the voice, or unique significance, of each person to the extent of

humiliating, diminishing and silencing no one. Only then we can employ adaptability, creativity and ingenuity comparable to what got us up to the top of the peak in the first place to design a way down the other side. The question now is how can we overcome the obstacles to this Transition that we encounter, both within ourselves and in the wider world?

When you hear the words climate change and peak oil, how do they affect you? What urges or instincts do they provoke? At a guess, if you are like most of the people I have asked, they lead to feelings of disempowerment, sadness, weariness, and of being confronted by something huge and scary that you feel unable to influence. This state of mind is not the place to start from, if we want to achieve something, do something or create something; it doesn't tend to lead to dynamic applied action. As we learn and adopt the whole person paradigm, however, we will increasingly feel inspired and motivated. While we stand on the edge of the most momentous task in history, thoroughly ill-prepared, we have unprecedented opportunities to produce well-being for all.

The Heart - Why having a positive vision is crucial

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"It is best to think of this as a revolution, not of guns, but of consciousness, which will be won by seizing the key myths, archetypes, eschatologies and ecstasies so that life won't seem worth living unless one is on the transforming energy's side." - Gary Snyder

"To save the planet, we do not need miraculous technical breakthroughs, or vast amounts of capital. Essentially we need a radical change in our thinking and behaviour." - Ted Trainer

"The uncertainty of our times is no reason to be certain about hopelessness." - Vandana Shiva

Peak oil and climate change can be intense and distressing, both in their implications and in the effect they will have on us. In the same way that most people remember where they were on September 11th 2001, or (for the older readers) when Kennedy was assassinated, most people who are aware of peak oil and climate change have their stories to tell about the moment when 'the penny dropped' - what I sometimes call their '*End of Suburbia* moment'. I think that alongside an understanding of the issues, it is important not to pretend that we can keep our awareness of these issues on a purely intellectual 'head' level, but that we need to address the 'heart' too, acknowledging that this is disturbing information, that it affects us, and that how it affects us in turn shapes how we respond - or don't.

Also important (and explored in this section) is the concept of visioning, and the power that a vision of the future can have. Too often environmentalists try to engage people in action by

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painting apocalyptic visions of the future as a way of scaring them into action. The question this part of the book asks is what would happen if we came at this the other way round, painting a picture of the future so enticing that people instinctively feel drawn towards it.

As my contribution towards this, I will set out a vision for how the UK might be in 2030 if we engage creatively with this process of adaptation to energy descent, seeing our future in increased resilience, more localised economies and greatly reduced energy consumption. Inherent within the twin challenges of peak oil and climate change is an extraordinary opportunity to reinvent, rethink and rebuild the world around us. Ultimately, at the heart of this section is the understanding that the scale of this transition requires particular inner resources, not just an abstract intellectual understanding. This is relatively new ground for the environmental movement, but it is crucial to our success and to engage enough people on the scale required.

Chapter 5: How peak oil and climate change affect us - 'Post-petroleum stress disorder'

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Before we go any further, it is worth pausing to reflect on how all of this thinking about peak oil and the changes ahead is affecting us. Having been around the subject of peak oil for a while, I have observed many people go through the process of becoming aware of peak oil, having what I sometimes call their 'End of Suburbia moment', and have seen how that awareness affects them. For some it is a traumatic shock, for others an affirmation of what they have always suspected. For many though, it is not so clear-cut either way. I have noticed, over the years, certain symptoms of what I have come to call 'post-petroleum stress disorder'. Perhaps you might recognise some of them:

Clammy palms or nausea and mild palpitations

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Finding out about something with such profound ramifications for the way we live can be a profound shock to the system. There are certain ways our bodies respond to this, and for many people the first manifestation of this disorder is physical discomfort.

A sense of bewilderment and unreality

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Many spiritual traditions speak of a 'dark night of the soul', when the nature of the emptiness of reality is revealed and we are forced to let go of the understanding to which we have become attached. Peak oil and climate change put a mirror up to our lives and the society around us, enabling us to see that what we had seen as being permanent and real is in fact a

fragile illusion, dependent on long supply lines and an uninterrupted flow of cheap oil. When you see the illusory nature of the world around you, it can leave you feeling bewildered.

I remember a science fiction film I saw years ago called *They Live*, which started with a man finding a box of sunglasses behind some dustbins. When he put a pair on, he could see that many of the people around him were in fact aliens who were in the process of taking over the Earth. Whenever he looked at advertising billboards, what had read 'Drink X, it'll make you happy', now read 'Consume and Die' and so on. Unfortunately, the film then degenerated into a relentless blasting of aliens with guns, but it was a very powerful metaphor for what an emerging awareness of peak oil does to our perception of the world.

An irrational grasping at unfeasible solutions

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"Aha!" some people say, "it'll all be fine because we'll just switch to hydrogen!" Or nuclear power, or free energy machines made using technology recovered from UFOs. We are even told that hundreds of earnest souls, beavering away in their garages, have created devices that can yield untold quantities of free energy, in complete disregard of the laws of thermodynamics, but that every time they are about to launch them publicly, they are bought out by oil companies and the plans are put in a drawer; or that other, more sinister things happen to them. Either that, one might say, or actually they just never invented them. Or they didn't work.

Anyway, for those suffering from this symptom, there is a confident belief that there is a silver bullet out there that will enable business-as-usual to continue uninterrupted, steadily growing our economies ad infinitum. As we saw in Part One, the more one looks at it, there is no single technology that can enable us to continue as we are. Nuclear, hydrogen, 'clean' coal and biofuels all have severe limitations. Fossil fuels have been a one-off energy bonanza that nothing else can replace (indeed, it has been argued that we are close to 'Peak Everything', to use the name of Richard Heinberg's latest book). That doesn't prevent people grasping at things that simply won't work. It is what Heinberg calls 'Waiting for the Magic Elixir'. The reality is that all the technologies and appliances that we will need are already out there in the world; we just have to get on with it, rather than fantasising about impending wonder technologies.

Fear

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In our work promoting responses to peak oil and climate change, we should not lose sight of the fact that for many people this is a very frightening subject. Indeed, one could argue that if you don't find it scary, you haven't really got it. For some, that fear can be paralysing, and for others it can trigger a shut-off mechanism. It is important that we don't just dump potentially scary information on people, but rather we need to allow an exchange of information and room for people to digest what they have been told.

Outbreaks of nihilism and/or survivalism

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For some, peak oil can affirm their long-held belief that people are inherently selfish anyway and what is the point - we've all had it. The survivalist response differs in that rather than thinking it is not worth doing anything, it assumes that one should prioritise self and loved ones above all else, that one should design for one's own survival; that a 'head for the hills' response is a valid one. This response is a particularly North American one, as I found out in response to a piece I wrote called 'Why the survivalists have got it wrong'. It elicited more comments than any other previous piece on Transition culture, offering a fascinating insight into those for whom individual survivalism is seen as a viable option. Some came via survivalist websites which featured such gems as "Which is better, a gun or a club? You can use a gun as a club, but you can't use a club as a gun." Of course in the US, heading for the hills is more of an option, in the UK we simply don't have the space, and decanting en masse to Dartmoor or Snowdonia would be a fairly unrewarding process. The most usual manifestation of this symptom that one encounters in the UK is "Well, we'll be OK, we've got a little place in the Pyrenees."

Ultimately, any response that is sufficient to the scale of the challenge is about coming home, about being aware that we are a part of the networks around us, and that we need to nurture and rebuild them, rather than imagining that we can survive independently of them. Indeed, we could see a belief that we can exist and flourish independently of the communities around us as being a dubious 'luxury' of the Age of Cheap Oil. We will have to learn to meet and greet each other once again, as well as learning how to co-operate and communicate.

Denial

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In this time when climate change and peak oil are so rapidly entering the public consciousness, and the implications of what they will mean are starting to sink in, inevitably, for some people, denial comes to the fore. This can take many forms. It could be the man I sat next to on a bus who told me he had seen a TV programme where a scientist had said the world was, in fact, warming from the inside out (!), or it could be those who say that climate change is caused by sunspots or by natural cycles, despite the wealth of evidence to the contrary. It could be those who say that climate change is actually a conspiracy cooked up by the New World Order in order to further curb our freedoms, or that peak oil is a conspiracy by the oil industry to allow them to make more money. The internet is full of half-truths and Chinese whispers for those who wish to construct such denial mechanisms.

One of my favourite denial stories comes from my friend Graham Strouts, who tells of a conversation with a woman with whom he had been discussing the impacts peak oil will have on the food supply system. They discussed how oil-dependent food is, and how vulnerable the system is. Then, to Graham's amazement she said, "Well it doesn't worry me - my husband didn't eat for a year once." Didn't eat for a year?! Apparently he had done some kind of meditation practice and she was convinced he hadn't eaten for a year. Of course the assertion that it is a fairly well established scientific fact that if you take the food away from a

population, they tend to start keeling over after a few weeks didn't do too much to change her position.

There is no way of completely avoiding denial, as none of us is beyond it. It pops up in all kinds of unexpected guises, and it is a natural reaction; we can't go around thinking about climate change, peak oil and the end of economic globalisation ALL the time after all! It becomes a problem when it closes us to the realities of the issue, and inhibits our ability to respond. Denial is a natural response, but we need to remain vigilant to it.

Exuberant optimism

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At the end of the first public screening of *The End of Suburbia* that I organised in Ireland, a man in the audience said: "We've just been told the Oil Age is coming to a close, to which I say, 'bring it on!'" While I can appreciate the sentiment he expressed, it is not quite so straightforward. As the Hirsch Report identifies, to make the transition away from the oil-based economy will require at least ten years, preferably twenty, and a failure to adequately prepare would be disastrous. Responding to peak oil with exuberant optimism needs to be balanced with an appreciation of the massive challenge it presents.

The 'I always told you so' syndrome

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I must confess that I see this one in myself. Having been involved in permaculture and natural building for many years, I naturally see peak oil as the opportunity to roll out permaculture and straw/clay houses with hemp plasters on a previously unimagined scale. For those interested in organics, peak oil is seen as the opportunity to really step up organics on a far bigger scale. The home-schoolers, the off-the-gridders, the market gardeners and the home composters may well all have their "I told you so" moments. This, for me, is entirely laudable, and a natural reaction for those who have for years been promoting various aspects of the post-carbon society years ahead of time. However, there are other people out there who are waiting to use peak oil for their 'I Always Told You So' moments from not such benign motivations.

The British National Party have taken to the issue of peak oil with great gusto, popping up at peak oil gatherings and declaring that within the peak oil challenge are the seeds to their ascendancy. Historically, fascists have always preyed on times of economic collapse and hardship, and this one is no different. One needs to take any claims of "I told you so" (including mine) with a questioning mind and great discernment.

It is clear, for example, that for the makers of the classic peak oil film *The End of Suburbia*, who were no fans of suburbia to start with, peak oil provided a great opportunity to dance upon its grave. The temptation to say "I told you so" can also mean that we neglect to really analyse the strengths and weaknesses of our proposed solutions in the context of diminishing net energy. We need to really think through the implications - in a low-energy context - of our proposals, and not remain too attached to our long-cherished beliefs and ideas. We may find instead that by letting go of them we actually come up with something better and more

appropriate to a culture in transition.

Chapter 6: Understanding the Psychology of Change

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Enabling change has always been the Holy Grail of environmentalists, but it has largely remained frustratingly elusive. Although there have been successes, overall the environmental movement has failed to engage people on a large scale in the process of change, certainly not on the scale of the wartime mobilisation now necessitated by peak oil and climate change. It could be argued that one of the reasons for this is that we have never really understood change, how it happens and what it entails. There are other disciplines that have a much better understanding of change, how it works and how to bring it about. One of these is the field of addiction.

A year ago I came across a book which transformed my thinking on this. Indeed, if it had had a different cover, and had been called something like Peak Oil and Change for Communities, I would have thought it a work of genius. It was *Addiction and Change* by Carlo DiClemente. DiClemente developed what he calls the 'Transtheoretical Change Model' (TTM), which sets out to explain how change happens. He states that the process by which an individual gets into and out of addiction is the same as any process of change. The TTM emerges from a synthesis of various previous approaches, as well as from longitudinal studies into how people change. Rather than change being just a process of deciding to change and then changing, DiClemente argues that the process is more subtle and sophisticated than that. I found his insights enormously illuminating, and around the same time I met Dr Chris Johnstone, an addictions specialist who has done a lot of work with the Stages of Change and applying them to social and environmental change work.

Chris is author of *Find your Power*, and also edits *The Great Turning Times*, as well as running workshops on 'The Work That Reconnects' around the UK. I find his take on change very inspiring and insightful, and the Transition approach is, in many ways, informed by some of these insights. Rather than trying to explain this to you myself, when I have no background in psychology or addictions, I have delegated this to Chris, and what follows is a dialogue we had exploring these issues.

An interview with Dr Chris Johnstone

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What are the Stages of Change, and where did they come from?

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The Stages of Change model was developed by psychologists Carlo DiClemente and James Prochaska in the early 1980s. They wanted to map out a framework for understanding

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change that could apply to many different types of behaviour and that could also be used by people from varying theoretical backgrounds. For this reason it became known as the 'transtheoretical approach'.

At the core of this model is a simple, and even obvious, idea: change doesn't happen all at once. Rather it occurs in increments or stages. You can apply this to pretty much any type of change. For example, if you're moving home, the actual moving is referred to as the Action Stage. But before you move, there's some planning that's needed - that's the Preparation Stage. And before you plan, you make a decision that comes after a period of thinking about it - that's the Contemplation Stage. There was also a time, further back, before you even started thinking about moving - that's the Pre-contemplation Stage. There are two other important stages too, but I'll come on to these later.

This model has been enthusiastically embraced by the addictions treatment field because it provides a useful map of where people can be in their journey of change. Some clients are in the action stage of taking steps and engaging in treatment. But many people in hospital for alcohol- or tobacco-related problems haven't reached the point of deciding to tackle their habits. Understanding about these different stages makes it easier to see what might be blocking change. Someone in the Preparation stage might want to change but not see how to. Someone in the Contemplation stage may be stuck in ambivalence, where part of them wants to change but another part isn't so sure.

This model can also be applied to the way we think and act in response to climate change and peak oil. Ten years ago, most people weren't even thinking about climate change. Now there's been a big shift; most people have moved at least into contemplation, and many into action. But people may be at different stages with different behaviours. They can be in the action stage of using low-energy light bulbs, but at the thinking stage when considering flying or car use. With peak oil, much of the public are still in the pre-contemplation stage of responding to this. There is a much lower level of public awareness about oil depletion. This is changing fast, though.

The other two stages are Relapse and Maintenance. With any change, movement can be backward as well as forward. There may be initial good progress, but then people lose heart or become complacent, leading to a relapse back to a former stage. That's why the Maintenance stage of change is important - that we look at how to consolidate gains and keep going in the long term.

How do insights from the addictions field help the environmental movement understand how change happens?

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A common idea in environmental campaigning is that if people only know how awful things are, then they will change. So the focus of many campaigns is on delivering information, often with disturbing graphic images and horror stories. Awareness-raising is of crucial importance - but you only have to look at a packet of cigarettes to see the limits of this approach. The information "Smoking Kills" in big letters isn't enough to discourage many smokers.

What the addictions field is good at is understanding and working with resistance to change.

Approaches like Motivational Interviewing have been developed as ways of working with people who have mixed feelings about change. There is massive resistance to tackling environmental issues, and we need to start being more creative in how we respond to this. There are important lessons here to learn from the addictions field.

To what extent is it possible to say that we are 'addicted to oil'?

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As an addictions specialist, I'd say that industrialised societies are hooked on oil in a way that shows significant features of addiction. Many people accept this, including George W. Bush! But the term addiction can be a difficult one because it has no universally agreed definition. I still think it is a useful term though, as addictions refer to stuck patterns of behaviour that can be difficult to change even when we know they're causing harm. That's exactly what we've got with our current pattern of fossil-fuel use.

Many of my alcoholic clients find the term 'addiction' useful, because it helps explain why they find it so difficult to stop drinking. It needs more than just a conscious rational decision. Even when they do that, deeply ingrained habits can be hard to shift and temporary gains can be easily lost through relapse. But once they've accepted there's something called addiction in the way, they can give it their attention and learn strategies to tackle this.

Why might it be useful to say we are 'addicted to oil'?

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In industrialised countries, a lifestyle that depends on very heavy oil use is seen as normal. The first stage in tackling a problem is to recognise it, and when we apply a term like 'addiction' to oil, it questions the way we use it. When looking at 'problematic substance use', it is useful to recognise three types of problem: hazardous use, harmful use and dependent use. Each of these can be applied to heavy oil consumption.

Hazardous use is when someone's consumption of a substance generates risks for the future. Many heavy-drinkers do not think of themselves as having a problem, but if they continue to drink at high levels, they increase the risk of medical complications. In a similar way, if we continue heavy use of fossil fuels like oil, we're likely to run into two main hazards - dangerous climate change and an energy famine when oil reserves run low. There's a saying in the addictions field: "If you carry on the way you're going, you'll end up where you're headed." Our current pattern of oil use is hazardous because of where it is taking us.

Harmful use is where consumption of a substance has already started causing problems. Climate change can be thought of as a toxic effect of heavy use of fossil fuels. In many parts of the world, people are already experiencing disturbed weather patterns. In Europe, heatwaves have killed thousands of people. In Africa, droughts have fuelled conflicts and famine. And in North America, an increase in the intensity of hurricanes has led to massive urban damage, most notably in New Orleans. While the future risks are much greater, the harm from climate change is already here.

If someone recognised their use of a substance was a threat to life, then in normal circumstances this would be enough to motivate change. But when someone is dependent on

something, the idea of stopping use, or even reducing, is threatening. So in dependent use, someone may either block out information that suggests their favoured substance is harmful, or they may continue using it, even when they know it could be killing them. Dependent use is when someone is hooked like this.

The value of recognising dependence is that it allows you to anticipate, and deal with, the additional obstacles to change this brings. Recognising oil dependence makes it easier to understand why it might be difficult to wean ourselves off our oil habit, while also pointing us towards proven strategies from the addictions field that might help us move forward.

So how can addictions treatment help?

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Climate change tends to be thought of as an environmental issue, and peak oil as a resource issue: both might be seen as having distant causes that we can do little about. But oil dependence is to do with human behaviour; that's much closer to home and within our power to change. The Stages of Change model is useful here because it maps out the journey needed for recovery.

The first stage of change is becoming aware of the problem. This starts us thinking about the issue, moving us into the Contemplation Stage. But it is easy to get stuck here if a conflict develops between the part of us that sees the need for change, and the part accustomed to using the substance and not wanting to go without it. Just think of all the things in your life that you appreciate that you wouldn't have if we didn't have oil. There are so many! And they become reasons for going slow in tackling the problem.

The approach of Motivational Interviewing developed as a way of dealing with such mixed feelings. By providing a listening space where someone can voice both their concerns and their resistances, ambivalence is brought into view where it can be dealt with. This helps people get clearer about what they really want, and so move into the next stages if they want to tackle the issue.

How can insights from addictions be utilised practically by Transition Initiatives?

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I've boiled this down to three principles that are already being applied within the Transition movement:

a) Pay attention to the steps of change that happen inside people.

One of the lessons of addictions recovery is that information giving, by itself, isn't enough. In the Stages of Change model, becoming aware of an issue is only the first step; this moves someone from Pre-contemplation to Contemplation. It is easy to get stuck at this 'thinking about' stage, and this is where insights from the addictions field are helpful. By having 'Heart and Soul groups', Transition Initiatives pay attention to the steps of change, and the blocks to change, that happen inside people. This allows them to address issues like motivation, resistance and ambivalence.

b) Create spaces for people to feel heard in making their own arguments for change.

A core insight of Motivational Interviewing (MI) is that when people make their own argument for change, they talk themselves into tackling an issue. Rather than trying to persuade people, the focus of MI is on creating a listening space that supports people to express their hopes and concerns. This is a way of cultivating the motivation needed to work through ambivalence and move through resistance.

Most political meetings have an active speaker talking to a relatively passive audience. A motivational interviewing approach might also add an opportunity for the audience to feel heard in making their own arguments for change. Several Transition events have done this through the use of paired listening exercises. At the launch of Transition Initiatives in Totnes, Lewes and Bristol, hundreds of people divided into pairs, with one as listener, the other as speaker. The speaker had two minutes of listening time for each of the following open sentences.

"When I think about Peak Oil and Climate Change, concerns I have include . . ."

"My positive vision for what I'd like to see happen in this town/city is . . ."

"Steps I can take to help make this happen include . . ."

The listener's role was just to give full attention to what was being said. The roles swapped after the three sentences, so that everyone got a chance to speak. This process took about twenty minutes, and visibly raised the level of energy and enthusiasm amongst those present. After the Bristol meeting, one participant said: "When we spoke in pairs, something happened in the room. That was when we became a community."

When we express our concerns, we talk ourselves into addressing them. When we give voice to our visions, we identify the destinations we want to move towards. And by describing the steps we can take, we prepare ourselves for action. This simple tool is an example of a 'motivational nudge'; it can help provoke the inner steps of change.

c) If a change seems too difficult, have a preparation stage for training ourselves.

Changing an addictive behaviour can be so difficult that people sometimes give up, believing it to be impossible. In my clinical work I've found it helpful to think of recovery as a journey that may move through a 'phase of disbelief'. I draw inspiration from adventure stories that often begin from a similar place of gloom. When the main characters rise to the challenge and begin looking for a way, they are more likely to find one. The quest for a way forward usually involves seeking out mentors and guides, who pass on the skills and insights needed to turn the impossibility around. By including a Preparation stage, the Stages of Change model offers an alternative to giving up when challenges like peak oil or climate change seem too difficult to address. The Preparation phase is where we train ourselves to strengthen our capacity to respond.

Transition Initiatives don't just involve telling people about the problem and campaigning. They also involve practical training in the skills needed for a post-oil society. But as well as practical training, psychological training is also needed in how to cultivate positive visions and find ways of dealing with inner 'dreamblockers' like fear, cynicism and disbelief.

Disbelief can be challenged by seeking out inspiring examples: addictions recovery, adventure stories and Cuba's bounce-back from energy famine are reference points that support the possibility of turnarounds from oil-dependence. In my book Find Your Power I offer a toolkit of strategies for turning around feelings of impossibility and finding ways through inner blocks to change. Such inner training is part of the preparation needed for creative transition out of the oil age.

What strengths might the integration of these tools and insights add to Transition Initiatives?

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Environmental campaigns tend to focus on awareness and action. But between these there's a series of internal steps, and change can become blocked at any one of these. Transition Initiatives are strengthened when they take account of both the inner and outer dimensions of change. Without this, when we encounter resistance to change we're in danger of falling into complaint and blame, rather than developing understanding and insightful responses.

There is a close parallel to what happens when someone has a drinking problem. Nagging responses in relatives are understandable, but they can deepen the resistance to change. We need to accept that when people are dependent on substances, as we are with oil, there are resistances to change that we need to take into account. The addictions field has been working with such resistance for decades. Models have evolved for understanding and working with blocks to change. Effective tools have been developed. The challenge we face is about transition and using the tools and insights from one field in another.

The FRAMES model

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One model from the addictions field that I have found to be particularly useful, and which offers a way of pulling together the threads of this chapter - indeed of the book thus far - is something known as the FRAMES model, devised by Miller and Sanchez. In the context of this book, the FRAMES model offers a template for how we can apply insights from addiction to practical responses to energy descent. The overlapping of these two fields is very exciting. In essence, the FRAMES model comprises six elements commonly included in brief interventions to addiction that have shown to be particularly effective. We could think of them as being best practice for responding to addiction.

The acronym FRAMES stands for:

- Feedback
- Responsibility
- Advice
- Menu of options
- Empathy
- Self-efficacy

(Not in any kind of chronological order).

Feedback of personal risk or impairment

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In the drug and alcohol field, this relates to offering the client an honest assessment of their addiction problem and its potential consequences in order to raise awareness of the problem. In relation to peak oil, many groups begin by showing the film *The End of Suburbia*, a frank assessment of the peak oil challenge. An essential element of initiating successful responses is making the level of the problem clear in stark terms. There is clearly a balance to be struck between the potential sense of disempowerment and trauma that may be generated and a positive solutions-focused programme.

Emphasis on personal responsibility for change

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For Miller and Sanchez, this relates to making an alcoholic/addict aware of the degree of personal responsibility that breaking the addiction will require. In the energy descent field, this relates to emphasising that the creation of the problems of peak oil and climate change is the result of many individual actions, and that the solution requires taking responsibility for these actions. Clearly, a response akin to a 'wartime mobilisation' will require the large majority of people taking on some of this responsibility. The emphasis here is on individual responsibility and choice, rather than merely telling people what they should do.

Clear advice to change

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Clear advice needs to be offered to break an addictive pattern. Advice has been shown to be effective, but it needs to be given as a recommendation not as a prescription. It can come in two forms: firstly advice to individuals for modifying their own lifestyles, such as energy-efficiency advice, and secondly, as community-scale strategies for energy descent. Indeed, one could see an Energy Descent Plan as being clear advice to change on a community scale, setting out a plan for responding to what is rapidly becoming seen as a disastrous addiction with potentially catastrophic results.

A menu of alternative change options

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In order to feel ownership and a sense of responsibility for an Energy Descent Action Plan, people need to feel that they have explored the alternatives. To arrive at the recommendations this plan would contain requires a process of exploring what the different options might be. Here the use of scenario planning is very useful, as it enables people to project forward and explore different possible outcomes (some of these scenarios were explored in Part One). Other tools that are useful here are visioning and backcasting, and one of the forms of this being explored by Transition Initiatives is the Transition Tales project (see pp.118 and 200) being developed in Totnes, which invites people to tell stories through a variety of media, making a power-down future feel like a tangible reality.

Therapeutic empathy as a counselling style

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In the field of addictions, the idea that aggressive, authoritarian or coercive approaches are effective tools is increasingly being discredited. What is now accepted as better practice is for the role of the counsellor to be supportive, friendly, encouraging and empathetic. Similarly, any approach that seeks to engage a significant proportion of the population in responses to energy descent has to skilfully engage with people and instill a sense of optimism regarding the possibility of change, rather than berating them for their planet-wrecking ways. This creation of a sense of embarking on a collective journey which Chris Johnstone refers to may well be key to this.

This principle also implies that the dialogue is a two-way process, that the person imparting the information is open to receiving information as well as giving it. Rather than telling people what they should be thinking and/or doing, an empathic approach seeks to engage as well as educate.

Enhancement of client self-efficacy or optimism

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This is key to the success of this process. The term self-efficacy refers to an individual's estimate or personal judgement of his or her own ability to succeed in reaching a specific goal, such as giving up alcohol or reducing their degree of oil dependency. Building this sense of 'can do' is essential in catalyzing change on the scale we are talking about. You will see in Part Three some of the ways in which Transition Initiatives are building this sense of optimism and working, through various approaches, to build self-efficacy - a community-wide belief that we can actually do this. This is one of the key areas that goes beyond the familiar approach to environmental campaigning with which we have become most familiar, that is about disseminating information. There is a real challenge too, in terms of how to create that sense of self-efficacy in diverse populations and how to design an approach that engages the diverse range of people that make up our communities.

Chapter 7: Harnessing the power of a positive vision

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It is one thing to campaign against climate change and quite another to paint a compelling and engaging vision of a post-carbon world in such a way as to enthuse others to embark on a journey towards it. 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 with how a powered-down future might be is essential.

I like to use the analogy of inviting a reluctant friend to join you on holiday. If you can

passionately and poetically paint a mental picture of the beach, the sunset and the candle-lit taverna by the sea, they will be more likely to come. Environmentalists have often been guilty of presenting people with a mental image of the world's least desirable holiday destination - some seedy bed and breakfast near Torquay, with nylon sheets, cold tea and soggy toast - and expecting them to get excited about the prospect of NOT going there. The logic and the psychology are all wrong.

Why visions work

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My sense is that creating a vision works in many interrelated ways. Tom Atlee writes of creating what he calls an "alternative story field". This in essence is creating new myths and stories that begin to formulate what a desirable sustainable world might look like. He talks of the potential power of bringing together activists, creative writers and journalists to form 'think-tanks' that create new stories for our times. When we start doing Energy Descent work, we should be looking to draw in the novelists, poets, artists, and storytellers. The telling of new stories is central. In Totnes we have started to do this with our Transition Tales initiative, which aims to get people writing stories from different points during Totnes's transition, as newspaper articles, stories, or agony aunt columns. Some of these appear later in this chapter. Such stories can come in all sorts of forms.

The pilot Totnes Pound that Transition Town Totnes (TTT) ran until June 2007 was also an example of this. People were able to hold in their hands a tangible, beautiful and spendable banknote. It told a new story about money, about its possibilities and about their community. The concept of telling new stories was also raised at the Official Unleashing of TTT in September 2006, when Chris Johnstone said:

"Totnes has an opportunity here to be ground-breaking internationally. Maybe in 400 years time, if humanity finds a way through, they will look back at this time at the beginning of the 21st century as a crucial time, as the last decade of the Oil Age. Maybe they will tell stories about what happened in Totnes. Maybe this evening will be something that is the beginning of one of those stories. If you look ahead at the future, there are gloomy possibilities, but there are also inspiring possibilities, and you are part of an inspiring possibility by being here tonight."

The tool of visioning offers a powerful new approach for environmental campaigners. We have become so accustomed to campaigning against things that we have lost sight of where it is we want to go. One of the best examples of this recently was provided by Transition Town Lewes, which when confronted by a local developer who wanted to develop a key part of the town, responded not with protests and petitions, but with a vision - the fictitious newspaper article on page 95.

This is a great example of what Atlee calls 'imagineering', and the creation of what he terms The Ecotopian Grapevine Gazette which he describes as "contain(ing) imaginary news stories about events or innovators that had not happened yet, but which I and others wanted to have happen, written as if they had happened. At the end of each article, I put the contact name of someone readers could call and participate in making that story a reality."

Peter Russell, the physicist and writer, describes a collective vision in terms of a Strange Attractor, as described in chaos theory. In effect it is like throwing a whirlpool in front of you which then draws you towards it. It has an energy, it is dynamic. He adds:

"There's something deeper which I can't really explain, but when there is a vision, it's somehow not just a motivation, but somehow the psyche gets involved in a way that seems to interact with the world in a way that makes it easier for things to actually happen, things seem to fall in place. I can't explain that rationally, but it's something that people notice time and time again. If you've got a strong vision of where you're going - it's as if the world seems to want to support that vision. It just seems to do it."

Visioning in this way has the added benefit of counteracting despondency. Climate change and peak oil can be terrifying, bewildering or seen as inevitably catastrophic. James Lovelock's recent book *The Revenge of Gaia*, with its paperback edition featuring a cover like a 1950s B-Movie horror film, and websites such as www.dieoff.org set out scenarios so grim that most people simply switch off; they don't want to engage with them. I am aware that being one of those people who can read a desperately depressing book about peak oil and societal collapse and draw from it the inspiration and motivation to do something practical puts me in an extremely small minority.

As a species with the creativity, adaptability and opposable thumbs that enabled us to create an Oil Age in the first place, we can be pretty certain that there will be life beyond it. Similarly, we may be able to prevent the worst excesses of climate change, and indeed the measures needed would almost certainly make the world a far better place. However, the point is that the world and our lifestyles will look very different from the present. 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 de-skilled on the monumental scale that we have, to the extent that some young people I have met are lucky to emerge from cutting a slice of bread with all their fingers intact. It is no exaggeration to say that we in the West are the single most useless generation (in term of practical skills) to which this planet has ever played host. However, the first step to the creation of a localised, low-energy-abundant future is actually visioning its possibility.

I can, of course, lay no claim to the idea of visioning the future as being unique to this book. Throughout history, humankind has always created visions of how the future might be - living in space stations, flying to work in our own flying saucer, going on holiday to the moon, for example. They rarely ever come to pass, though, usually owing to our not taking into account, among other things, the amount of energy that sustaining such visions would require. I remember as a child lying on the floor of my bedroom reading *Look and Learn* magazine, and thinking that holiday trips to the moon would be on the cards for my adulthood. I'm still waiting, and, however much Richard Branson might think holidays in space might be possible, I'm not holding my breath.

Captain Future - the wizard of science

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On the left is a picture of Captain Future, the 'man of tomorrow', published in the US between

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1940 and 1951, as a kind of long-running 'space opera'. Captain Future is the alter ego of Curtis Newton, a space-traveller and scientist for whom life is a non-stop whirl of vanquishing supervillains, tackling alien menaces and generally being a good guy in a universe of oddly shaped baddies. The stories begin in 1990(!) when scientists Roger and Elaine Newton and their brilliant scientific colleague Simon Wright move their laboratory to the Moon to enable them to continue their research in peace and quiet. Wright is very old and unwell, so in order to be able to keep working he transplants his brain into a clear perspex box, with wires on it which, when attached to someone's head (see previous page), enables them to have Wright's thoughts (a very early but somewhat more revolting version of the internet).

Newton and Wright create various things, including a robot called Grag and a shape-shifting android called Otho. Their lunar scientific idyll is cruelly spoilt when the baddie, the evil and utterly dastardly Victor Kaslan, arrives and kills them all, apart from their son, who is then brought up (somewhat unconventionally) on the Moon, by a robot, an android and a brain in a box. It is a childhood, however, on which he thrives, growing up to be an incredible scientist and athlete for whom no challenge is too much.

Captain Future had a penchant for hovering space boots (which disappointingly never came to pass) and helmets that miraculously never steamed up. He also appears to have relished squeezing women into absurdly small rockets that would panic even the most agoraphobic flyer (see left).

Of course, much of Captain Future's vision of the future didn't come to pass. We don't have household robots, chasing villains through space is something that thankfully we will never get to do, and our future is likely to be far more terrestrial, far less well-travelled, and with the robots limited to the inside of car factories. It will be, however, ultimately preferable.

Nonchalantly zapping enormous marshmallow monsters on the Moon (see page 100) is not something we will be called upon to do. Captain Future's scientific brilliance and his powerful physique are something we might find useful, however.

Visions of abundance

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Not all visions of the future have to be quite as absurd as that of Captain Future. I have, over the last year or so, become what one might call a voracious 'vision-harvester'. I am liable to ask the various ecological thinkers and practitioners I bump into what their visions are for a powered-down future. Their answers are intriguing. For some, such as Stephan Harding, author of *Animate Earth*, a central part of his vision is the return of the role of wilderness in our lives, our decreased ecological footprint having allowed nature to reclaim some of the space around us.

"I would know," he told me, "that I could put on my rucksack and walk out of the village (where I live) and into the forest and be really in the wild country for days and days if I wanted to. . . . My vision would be for an interconnected network of ecovillages, with lots of wild countryside in between, but also some lovely small cities where there would be theatre, culture, museums and good libraries, and good coffee shops, gorgeous organic architecture." The psychological and cultural effects of this reconnection with Gaia would be, he argued, hugely beneficial.

For Brian Goodwin, author of *Nature's Due*, a powered-down future is one where humanity becomes, as he puts it, "largely invisible"; that is, more blended into and in tune with our natural surroundings. He told me "I'm not talking about a Rousseau 'back to nature'; I'm talking about using appropriate technology, natural materials and energy to achieve a lifestyle in which we blend with the natural world. We will have learned how to live in a way that other species have, and therefore have reduced our footprint, decreasing it dramatically to the point where we are one among many instead of an absolutely dominant species."

Systems thinker Fritjof Capra's vision of 2030 is one where the ecological principle of community has become the central organising factor for society. Taking nature as the model, he told me, would mean that "we would have patterned our communities after . . . natural communities, which means that we would use solar energy as our main energy source, augmenting it with wind, biomass, and so on. We would have arranged our industries and our systems of production in such a way that matter cycles continuously, that all materials cycle between producers and consumers. We would grow our food organically, and we would shorten the distance between the farm and the table, producing food mainly locally.

"All of this would combine to create a world that has dramatically reduced pollution, where climate change has been brought under control, where there would be plenty of jobs, because these various designs are labour-intensive, and as an overall effect there will be no waste, and the quality of life would increase dramatically."

For Meg Wheatley, author of *Leadership and the New Science*, this kind of visioning is not hard, as she recognises the qualities of this future and the relationships we would have with those around us, in existing communities she has already spent time in. She identifies these as being communities "where you recognise that you're all working for the same values, for a shared vision, for similar goals, and you're not working at odds. You don't feel polarised, you don't feel afraid of truthful conversations, and you don't retreat from each other, whether it's because of conflict, or just because I have no patience for what you think and contrasting it with what's so prevalent right now."

For Tony Juniper, former executive director of Friends of the Earth, the principal noticeable difference would be that it would be quieter, and people would be in less of a rush. "There would be more sounds of people and less sounds of machines," he told me, "because communities would have been rebuilt and there would be people back in the streets once more, meeting each other rather than exchanging abuse through their car windscreens!"

According to Juniper's vision, the improved quality of life would be tangible. "It would smell fresher, there would be less pollution, less noise as well. . . . There would be more bicycles, more birdsong because the pollution that has been associated with industrial agriculture would have declined, there would be more organic methods, so there would be more wildlife back in the countryside and the cities."

Whatever happens, it is clear that what will happen over the next twenty years is almost unimaginable. When I asked Dennis Meadows, one of the co-authors of the *Limits to Growth* series of books, he said: "If you think about the degree of change you saw in the last 100 years - social, technical, cultural, political, environmental, all those changes - it's less than what you'll see in the next twenty years." These are extraordinary times.

Chapter 8: A vision for 2030 - looking back over the transition

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If I were to wake up in the UK of twenty years hence, which had successfully undergone a transition of the kind we are talking about, life would be very different from the present. It would have emerged from some very difficult times into a more settled place. It would be far more locally oriented than the present, and we would have much less reason to travel. Let's take a look at how 2030 might look from the perspective of someone in 2030 looking back. I have illustrated this below with some newspaper articles from various points in the future.

Food and farming

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Farming has experienced a remarkable transformation, undergoing a renaissance that few in 2008 could have thought possible. About twenty years ago, rising oil prices, international climate change agreements, and the findings of the Royal Commission on Food Security, made the UK Government reconsider its commitment to the World Trade Organisation's pro-globalisation, liberalised, unrestricted free-trade approach, leading to its re-prioritising national food security above international trade. Also, local authorities across the country made local food procurement a policy priority, thereby kick-starting a rapid expansion in the market for local food. Farms are now highly diversified, producing more than just food, and are also providers of local-scale renewable energy, building materials, and organically grown medicinal plants, among other things.

Rising natural gas prices and disruptions to supply exposed the vulnerability of UK farming's dependence on nitrogen fertiliser (which was made from natural gas). The building of organic matter in soils due to their increased ability to lock up carbon is now a priority, a key aspect of the Government's carbon reduction strategy. The integration of perennial tree crops is a central feature of agriculture, both for their crop yields and for their carbon-sequestering abilities. Stands of specially bred varieties of walnut, sweet chestnut and hazel have been integrated into most farms, offering protein-rich annual crops for a variety of food uses as well as for producing oils for biodiesel for local consumption. With the changes in climate, a wider range of tree crops is now grown, as well as vines and other perennials.

Farming has learned to compensate for its reduced oil consumption through the partial reintegration of working horses, alongside locally produced biofuel-powered machinery, and by employing more people. The average farm size is now much smaller than in 2008 and the countryside is substantially more populated. Farms are now host to a diversity of enterprises, not just food production: some now produce materials needed by a building industry now using more local building materials, such as clay plasters, cob and hemp/lime blocks, as well as local timbers. This in turn has enabled the creation of small-scale industries to process and produce these materials, often based on the farms.

Others now focus on growing organic mushrooms for both culinary and medicinal uses. Some

specialise in growing hemp for fabrics, or producing wood pellets or biofuels such as biodiesel or ethanol for the local market. For some farms, the installation of a methane digester means that they are able to supply heat and power to the neighbouring community. This newly found diversity of enterprise, alongside food production, has led to a much regenerated local economy, with the major part of each community's wealth being cycled locally rather than being leached out into the wider economy.

Over the last 25 years, food and farming in the UK has returned to being regarded as central to the security of the country. Food security is now seen as not exclusively an issue for developing nations. As the rising price of fuel and demand for land for the short-lived biofuels industry began to inflate the price of food around 2011, we found, for the first time in 50 years, that it was cheaper to eat local organic food. At the same time our diets, by necessity, became more seasonal and less meat-based.

Urban agriculture is now a priority for urban planners and communities. Cities have been redesigned as productive places. The city of London now produces 60% of its fresh vegetables and 30% of its fruit in and around the city - and Bristol is now pushing 80%. A massive programme of productive tree planting has brought fruit and nut trees into every park and school grounds. Urban market gardeners began to colonise land around the edge of the cities, producing a diversity of fresh produce for local markets with extremely low food-miles (leading to the use of the term 'food feet'). The keeping of small livestock, particularly chickens, has become the nation's favourite pastime. What were large parks now feature a diversity of allotments, market gardens and horticultural training centres.

Back garden and allotment food production was already a very popular leisure activity in 2008, but in 2012 the Government legislated to make gardening a key aspect of their carbon reduction and health promotion strategies. Now local varieties of fruit and vegetables are highly treasured, and the teaching of intensive organic gardening techniques is a core part of the National Curriculum, as part of the nation's Food Security programme.

Medicine and health

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Today our idea of health - how to create it and maintain it - has changed markedly from that of twenty years ago. The Health Service had to rethink itself as the oil price made many of its practices and approaches unaffordable, and it faced the very real threat of collapsing completely. The closure of local hospitals in favour of centralised ones - so rampant twenty years ago - has been reversed, and local healthcare centres are now not just about treating illness but promoting health in many diverse ways. They have forged partnerships with local schools, promoting food growing and familiarising young people with the whole food cycle from seed to salad. The wellbeing of the individual is seen as inseparable from the health of the community. Human biology is now a compulsory school subject, and has expanded to include nutrition and basic herbalism.

About half of the medicines prescribed by doctors are now locally sourced, with local farmers growing certain key medicinal plants which are processed in local laboratories. Local chemists also now make over 50% of the medicines they sell on the premises. Doctors are able to prescribe a range of complementary treatments, as well as involvement in local

community gardens, and access to affordable good food. The growth in access to meaningful work, the rebuilding of social cohesion and an emerging common sense of purpose, has resulted in fewer stress-related illnesses and cases of depression. Conventional and complementary practitioners are seen very much as two sides of the same coin, and the concept of promoting health rather than just treating disease has led to a range of innovative measures.

As a result of people's moving away from being sedentary consumers to becoming more physically active producer/consumers, there has been an increase in musculo-skeletal problems. Doctors are now able to issue prescriptions for, for example, Alexander technique sessions. It has become more commonplace, as in China, to see free Tai Chi sessions in local parks in the morning. Technology has also enabled certain tests and observations to take place online in the patient's own home, what is known as 'tele-medicine'.

Education

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Education in 2008 was woefully inadequate, given the scale of the Transition to come. It became clear around 2010 that young people leaving school were unprepared for the more practical demands that the emerging powered-down world made of them; their school years had left them unable to build, cook, mend, garden or repair, and the Government declared that youth was in crisis and education needed fundamental reform. A new curriculum was approved in 2012 which re-emphasised vocational education firmly rooted on foundations of sustainability and resilience-building. From primary school level upwards, gardening, cooking and woodwork skills have become a core part of the programme for the first time since the 1950s. School grounds have been transformed into intensive gardens, with many students running their own enterprises.

By secondary school age, students now learn construction, as well as creating, installing and maintaining renewable energy systems, alongside social skills like conflict resolution and community leadership. For adults, Colleges of the Great Reskilling are now central to most towns, offering a variety of courses in a wide range of practical sustainability skills for the public as well as retraining for professionals.

The number of smaller local schools around the country began to grow around 2015, as the price of liquid fuels made it unfeasible for children to travel long distances to school. By 2018 many of the larger comprehensive schools and universities were no longer able to attract their intakes from large areas and had to rethink how they used their facilities. With unused space on their hands they diversified, and are now also home to incubator units for new businesses, with skilled craftspeople having their workshops and offering apprenticeships onsite. Those schools which have become farms or intensive market gardens also now feature a diversity of value-adding enterprises. Schools are now vibrant, productive, bustling places, firmly rooted in, and key contributors to, the local economy.

Economy

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The way the economy works, and the way we think of money, has changed significantly since 2008. The globalised economic model began to run into significant difficulties sometime around 2010 when world oil production peaked. A period of sustained recession followed: a difficult transition, as our over-reliance on foreign investment and perilous levels of consumer debt became apparent. Parallel to this recession was the vigorous emergence of more localised economies. With national currency in short supply and pension schemes in tatters, towns and cities were forced to develop their own economic systems. New forms of trade are now commonplace, with systems such as LETS and Time Banks flourishing.

Towns and cities, as they did historically in times of hardship, now produce their own printed currencies, only usable within the town. Local investment models have been developed, whereby people invest their money in ways that support the economic regeneration of the community. As the focus becomes increasingly local, people now find the percentage of their daily transactions conducted in national currency continuing to fall. Money is now more answerable to the communities it serves. These local currencies may be backed by the national currency, but increasingly they are backed by locally produced energy or food production.

Each town and city now has its own printed currency used by all local businesses and proudly bearing the heads of prominent local historical figures. As part of national government policies to strengthen local economies, government grants and funding for the community are invested in the local currency and local authorities also accept part payment of Council Tax in local currencies. Shops pay part of their business rates and their local suppliers in them.

As globalised business models have begun to unravel, local entrepreneurs have stepped in to fill the gaps. In the 1930s nearly all businesses were owned by local people; a hundred years later this is true once again. The myth that a strong economy can only emerge if it is based on inward investment is now seen as an oddly warped argument from the Age of Cheap Oil. For communities dependent on globalised businesses, the transition was particularly difficult, but led to a firm commitment to building stable local economies.

Transport

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Private car ownership is now no longer the norm. Indeed, other than in some very rural areas, given the extent of the public transport system and the reprioritisation of urban streets to favour cyclists, pedestrians, trams and buses, private car ownership is seen as positively antisocial. The idea that one could live in a rural area and live an urban lifestyle has become a thing of the past. Rural communities have re-organised themselves around the re-creation of local employment, production and community. This has inevitably meant that over twenty or so years the population has changed as those seeking a more active, productive, rural lifestyle have moved out of the cities, while those seeking the enhanced sociability of urban living have headed in the opposite direction. Car clubs are a lot more common, allowing people access to cars without needing to own them; they also mean that cars are better used.

Cheap air flights are looked back on with nostalgia. The inability to travel long distances has had the added advantage that people are more connected to their immediate area, more intimately acquainted with its nooks and crannies. Back in 2007, local people were more familiar with Paris than Exeter, with Delhi than Manchester! Sharp rises in fuel prices and the Government's decision in 2009 to tax aviation fuel sent many of the budget airline companies out of business. Although air travel and the private car were the transport sector's losses, commercial sail-power returned with a vengeance, and other winners included tram and bicycle manufacturers.

Part of the process of relocalisation has been a slowing down from the frenetic pace that typified life in 2008. This has reduced the need to dash off somewhere exotic to 'relax'. People nowadays are more drawn to long summer days on their allotments, sleeping in their summerhouses, taking long cycle rides and familiarising themselves with the ecology and history of their bioregion. Indeed, the transformation of our towns and cities from large, bland places with a few 'entertainment' venues, to diverse places with gardens, ponds, artworks, more opportunities for meeting and working with people, and generally more to see and do, has given people less reason to travel to be entertained.

In 2012, the advent of 'peak cars' (closely following 'peak oil') meant that demand for car parking spaces began to fall, leading to councils looking for different uses for their large expanses of underused tarmac (for whose upkeep they were responsible). Many of these areas were handed back to community control, and became community market gardens and centres for Great Reskilling training. Public transport is now exceptionally well thought out and integrated. Many of the small branch rail lines shut down by Beeching in the 1960s were re-opened, to the great benefit of both the communities and local farmers who can now use them to send produce to local markets. Urban streets now prioritise pedestrians and cyclists, cars having been designed out of many public spaces.

Energy

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The UK has reached, thanks to an extraordinary crash programme initiated in 2010, a point of near self-reliance in energy. This was achieved through a 50% reduction in energy consumption and a massive scaling-up of renewables to provide the remaining 50% of energy demand. This was brought about partly by the introduction in 2010 of carbon rationing, based on the model of Tradeable Energy Quotas (TEQs) developed by David Fleming, which allocated to each citizen and business a carbon allowance which was gradually reduced each year, and managed electronically with a swipe card, used with every purchase of energy or fuel. Since their introduction, TEQs have rapidly become a fact of life, with some people now actually making part of their income by living simply and trading their surplus quotas.

A nationwide crash programme of domestic energy efficiency and retrofit begun in 2009 has brought down domestic consumption by 60%. Part of the success of this was the mainstreaming of energy efficiency. While domestic solar panels and wind turbines became seen as 'must haves' around 2010, as prices came down and there was increased grant aid, the much less glamorous work of retrofits still needed a push.

This was, in part, achieved by engaging local artists, who reconceived the installation of

insulation and other energy-saving devices as a settlement-wide art installation, akin to the artist Christo wrapping buildings and islands. The remaining energy demand has been made up from a mixture of wind (as much as half of it), including a big programme of offshore wind projects, as well as biomass-fuelled Combined Heat and Power systems and tidal power. Many towns have helped to reduce their demand on the grid by creating localised energy mini-grids, often owned and managed by locally owned energy companies using the ESCO model, an approach first tried many years ago in Woking, Surrey. These bodies put in place renewable energy infrastructure which is owned and supported by the community.

These mini-grids are powered by whatever has been identified as the most locally appropriate energy sources, be it tidal in coastal areas, biomass in the Forest of Dean, or wind in the Scottish Highlands - usually a mixture of a range of sources. They are connected to the National Grid in order to exchange surplus or obtain backup when necessary, but communities generating their own power in this way have developed an important tool for strengthening their local economies, enabling the money from its generation to be retained in the local economy.

It is standard practice now that many homes, especially new-build ones, are net energy exporters, thanks to generous subsidies for solar power (passive solar and photovoltaics). The surplus energy generated is fed into local mini-grids where they exist, or into the National Grid. Every home is fitted with a smart meter, which allows the occupants to see at a glance how much energy is being used in the house at that moment. Energy companies also use tariffs in imaginative ways, charging less for electricity at certain times so as to encourage less peak demand at other times.

People look back over the last twenty years with a sense of enormous achievement. What looked like an insurmountable challenge in 2008 has been tackled with a united effort and with great imagination. People look back to the wastefulness of twenty years ago with astonishment and a certain amount of distaste. The new energy economy is leaner, but people now appreciate that one's degree of personal happiness does not directly correlate to the size of one's energy consumption.

Housing

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The nation's housing stock, which although it looks to all intents and purposes much like it did in 2008, is today far more energy-efficient. In 2014, the model of the Local PassivHaus became the standard for all new domestic construction across the UK; based on pioneering research by Rob McLeod in 2007 which combined the technological advances of the European PassivHaus concept with the use of locally sourced biomaterials. This model allowed the construction of homes which require no space-heating at all, drawing all their heating requirements from solar gain and the occupants' body heat. In the local version, in excess of 80% of the materials used are locally sourced.

This in turn has led to an explosion of local industries producing clay plasters, natural insulation and cob/hemp blocks. The breathable construction and the materials used in the Local PassivHaus has led to buildings that are very healthy to live in, with very low embodied energy; they also contain significant amounts of stored carbon and contribute very few

polluting 'building miles'. All new buildings are designed to be autonomous and off-the-grid for water and sewage needs, as well as producing more energy than they consume collectively (as with a row of terraced houses for example) or, for stand-alone buildings, independently.

New models for inhabiting larger buildings, and new living arrangements - such as co-housing, where people have private units but some shared facilities - have become far more common. While the retreat in house prices of 2009 resulted in hard times for many, they also made home ownership feasible for young people again, as did falls in the rates of second home ownership.

The average footprint of new-build homes has fallen, and one of the great arts for architects is now the efficient design of the small home. 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. In rural areas, in response to the demands of adjusting to the needs of a much expanded agricultural workforce, clusters of small, low-impact buildings, built from local materials, have been created on farms. Agricultural ties have been used to keep these from becoming privately owned, based on the '15 Criteria for Sustainable Development in the Countryside', developed by the rural planning reform organisation 'Chapter 7'.

In 2011, the Government initiated the concept of the Great Reskilling in the training of construction industry workers. Added to the skills taught were the skilled use of hemp and lime, cob blocks, and so on - a much broader set of skills than had previously been taught. A trip to the local builder's merchants today presents the builder with a range of materials vastly different from those of 2007: bagged clay plasters, straw and clay, reed and clay boards, hemp or cob blocks, lime or clay renders, laths, locally made natural paints, pigments from local clays, and a wide range of locally grown and sawn timbers, as well as underfloor insulating pellets made from expanded recycled glass. Recycling has changed from 2007, when it involved long distance transportation for centralised industrial processing, to being primarily focused on local, low technology reprocessing, and many new innovative building materials are now made from the low-tech recycling of plastics, paper, fabrics and glass.

Chapter 9: Kinsale - a first attempt at community visioning

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The Kinsale Energy Descent Action and how it came about

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Kinsale (Cionn tSáile in Gaelic) is a town 25 miles south of Cork City in County Cork, Ireland. It has a population of around 2,300, and is a popular destination for tourists, both Irish and international, who come for fishing, sailing, golf and the gourmet food for which it is known. In September 2000 I initiated a permaculture course in the town's Further Education College,

which already had a strong reputation for art, drama, and multi-media courses. In its first year the course was essentially an expanded permaculture design course, but over the next three years it grew to become a two-year full-time course with modules in permaculture design, organic growing, natural building, sustainable woodland management, conflict resolution, community leadership, starting your own business, nutrition and field ecology. It is one of the first such courses in the world.

The course was, and still is, extremely popular, and attracts students from around the world. The grounds of the college have been transformed, as a result of the inspired hard graft of generations of permaculture students, from being an expanse of lawn to a diverse permaculture landscape, featuring a small coppice woodland, a straw-bale house, a polytunnel and vegetable beds, a forest garden, a small pond, and its crowning glory, the cordwood amphitheatre, built entirely using local materials.

In September 2004, on the first day of term, the students were shown a new film called *The End of Suburbia* (the first time I saw it), and then, later that day, Dr Colin Campbell of the Association for the Study of Peak Oil gave a talk to the students. The combined effect of this 'double whammy' was very powerful for the students. It greatly focused the mind, and came as quite a shock to everyone - myself included. 'Post-petroleum stress disorder' manifested itself in diverse ways. Once the mental dust had settled, the concept emerged of a project for the second-year permaculture students, which (on the assumption that Campbell's forecasts would be proved to be true) set out to explore how the town of Kinsale might successfully make the transition to a lower-energy future.

The first thing I did when conceiving the project was to look around for existing examples of this already happening. Astonishingly, we could find nothing at that point that constituted a community response to peak oil, despite scouring the internet. There were some useful tools in James and Lahti's *Natural Step for Communities*, some initial thinking by the Post Carbon Institute, and the two key books that most inspired the process, Richard Heinberg's *Powerdown* and David Holmgren's *Permaculture - principles and pathways beyond sustainability*.

Powerdown takes the reader on a journey exploring humanity's options beyond the peak. Heinberg argues that the desirable outcome lies somewhere between what he calls 'Powerdown' (a national government-led programme of economic contraction and relocalisation) and 'Building Lifeboats' (communities responding by building local infrastructure and self-reliance). While the book contains little in the way of practical suggestions for how this desired outcome might be achieved, it remains a seminal analysis of humanity's options, and the concept of 'Powerdown' has entered the collective consciousness. (The brief I set for this project is given in Appendix 3.)

Having received their project brief, the students divided into pairs and took on different topics. They drew up a list of the relevant people in the town, and I suggested useful reading and websites. We invited these people to come in and speak to the group, and went on a number of visits to permaculture sites, organic farms, and green buildings, to ask for the input and insights of those who have been practically engaged in this kind of work in the area for many years.

On Saturday February 12th 2005 we held an event in Kinsale Town Hall called 'Kinsale in

2021: Towards a Prosperous, Sustainable Future Together'. The event was presented as a 'community think-tank', in order to hear the community's ideas about how energy descent would affect the community and what might be done about it. We sent personal invitations to the movers and shakers in the town, drawn from the sectors identified in the project brief. The event was also open to the public, and we put posters up around the town. From the 60 people invited, about 40 turned up on the day. The event itself was opened by the then Mayor of Kinsale, Mr Charles Henderson, who spoke of the importance of energy as an issue and how it affects all aspects of our lives and our economy. This was followed by a screening of *The End of Suburbia*.

After the film we introduced the concept of Open Space Technology as a tool for facilitating community exploration. People were invited to identify the specific problems and issues that the film raised for them. These were then recorded on large sheets of paper, pinned up on the wall and then collated into subject areas, each of these becoming the basis for a discussion group. The groups covered the following subjects: Food, Rebuilding Communities, Youth Group/ Education, Business & Technology, Tourism and Renewable Energy. The groups came up with a wealth of ideas and possibilities that were then fed back to the rest of the participants.

After the event we collated the information that had come in from the day and pairs of students selected different subject areas. I supplied a lot of reading material for background research, and the students did a lot of internet research for useful ideas and examples from around the world. The final result was Kinsale Energy Descent Action Plan - Version 1, 2005 (KEDAP), which attempted a year-by-year plan for the town. Each section of the report begins with a section called *The Present*. This attempts to succinctly summarise what is the problem now, in 2005, with regards to the subject in question.

The Present is followed by *The Vision*, which is written in such a way as to give the reader an idea of how Kinsale could be, if all the recommendations up to that point had been implemented. This is then followed by a list of suggestions and recommendations, in chronological order. These are meant to be ambitious but also achievable, given a good deal of commitment and support. Each section is then rounded off with a collection of resources and internet links. I then edited and designed the KEDAP and 500 copies were printed in time for the *Fuelling the Future* conference run in Kinsale in June 2005. This conference featured, among others, Richard Heinberg, David Holmgren and Colin Campbell. It was a memorable and impactful two-day conference which explored community responses to peak oil.

At the time I don't really think we had grasped the significance of what we had created. The KEDAP wasn't even formally launched at the conference; it was just made available to the delegates on a table at the back of the marquee. It wasn't mentioned in the local press for some months, and slipped out rather than actually being launched. The copies sold steadily however, and fairly soon the only places it was available were as a download on the *Fuelling the Future* website and at www.transitionculture.org. It has since been downloaded many thousands of times, and has inspired many similar initiatives around the world.

Four lessons from the Kinsale Project

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In the months following the publication of the KEDAP, it became clear that we had stumbled across something important and powerful. People from all over the world got in touch to say that it was the missing piece of the puzzle, the thing they had been looking for. As interest in it grew, I started to muse on Transition culture, about what lessons might be discernible from the process that could inform similar processes. The resultant insights have done much to underpin the work subsequently undertaken across the emerging Transition Network.

Lesson One: Avoid 'Them and Us'

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It would have been easy to fall into the same trap that so much campaigning and activism falls into of creating a sense us 'them and us'; painting the local council as being the villains of the piece because they had failed, thus far, to begin formulating responses to peak oil, and indeed had done very little that could be called 'green' at all. It could also have resorted to attacking the business community for its un-green ways, but instead it sought to involve them.

Members of the Council and other stalwarts of the community were invited to the Open Space day as well as to the 'Fuelling the Future' conference. Many of them were approached and asked for their views, and the Town Hall was used to host the Open Space event, with the Mayor opening the proceedings. The project was always carried out in a spirit of inclusion and openness. The Practical Sustainability course attracted, from the outset, a wide range of people, many of them from Kinsale itself, who helped spread the concepts around the town.

The more I have been involved in this work and met people working in positions of authority, be they planners, engineers, councillors and even politicians, I have seen that they are ordinary people, often with families, just as bewildered by the turn of events as everybody else. For us to scream "why aren't they doing anything?" does nothing to help.

Lesson Two: Create a sense that something is happening

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From its beginning, the Practical Sustainability course developed a reputation in the town for being a place where unusual yet fascinating things were occurring. People often commented to me that they loved the 'buzz' around the town created by it. The various building projects that took place at the college were greeted with great interest, indeed sometimes students would spend the morning cob building or clay plastering, and then head down to the town for some lunch, leading to their being fondly referred to in the town as the 'Mud People'. We also had an annual Open Day where visitors would eat pizza from the clay pizza oven built by the students, salad from the polytunnel, have guided tours and generally soak up the atmosphere.

The amphitheatre project at the College which was completed in May 2005 did a great deal to put the College on the map. Many who attended the performances of 'The Merry Wives of Windsor' put on by the College's drama students, talked about the 'magical' feeling of the

space. The College's combination of interesting courses and ground-breaking practical projects did much to make the community well disposed to the Action Plan process when it began. When it came to developing the Plan itself, people were delighted to have input into it, and the reputation that had been built up for work that was exciting and done with good heart went before it.

Creating this sense that something is happening could also be done by staging an uplifting and high-profile conference, as was done in Kinsale with 'Fuelling the Future'. An event such as this, if designed with lots of outreach elements, and also involving local people with relevant skills and knowledge, can really embed the process in the town, bringing in new information and inspiration, while at the same time reinforcing and reaffirming the work that others have already been doing.

Another way of creating such a 'buzz' is through developing a reputation for addressing concerns that are seen as important more widely than peak oil. For instance some of the course's students organised a clean-up of a local nature area which was reported in the local press. Some others designed and planted a permaculture garden for a local hostel. One of my favourite examples of this is the City Repair organisation in Oregon in the US, who run a festival every year called the Village Building Convergence, building cob bus shelters, community gardens and what they call "intersection repair". They create a wonderful sense of innovation and positive things happening.

We need to communicate that this 'something' is profoundly meaningful and transformative, and has a sense of magic and a spark of wonder to it. Creating this atmosphere is the oil that lubricates the engine of your energy descent process. The more you can create a feeling that something important, positive and dynamic is underway, the less friction and resistance your work will encounter.

Lesson Three: Create a vision of an abundant future

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One of the essential ingredients in developing community responses to peak oil is enabling the community to create a vision of how the future could be. We move from working with peak oil, which is about probabilities (how probable is it that it will be horrendous, how probable is oil peak in 2007, and so on) to possibilities. The shift is subtle but illuminating. The Open Space event we ran in Kinsale gave the community permission to dream. It was very powerful to see it happening, people going home excited about how the future could be, and feeling they had met some kindred souls with whom they could create a future.

It is important that people can see where they are going and that they like what they see. If we present people with a vision of disaster and social collapse, what incentive do they have to do anything? This is not to say that we should not aim to raise awareness and talk about the issues, but at the same time, simply presenting people with bad news and expecting them to respond by engaging boldly and imaginatively is unrealistic in the extreme. Ken Jones, the Buddhist author, writes of 'changing the climate, rather than winning the argument'.

Lesson Four: Design in flexibility

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The Australian permaculture teacher Dave Clark speaks of his experiences implementing permaculture in refugee camps in Macedonia. He was dealing with large numbers of people moving to places with no infrastructure, all of which had to be created. He did amazing work, erecting strawbale buildings, food gardens, putting in miles of swales and hundreds of thousands of trees. One thing he said really stayed with me. He spoke of having to work with professional engineers who would design something such as a drainage system, which Dave could see wouldn't work, but which, because the person was a 'professional' could not be questioned. He saw much money wasted through this unchallengeable 'rule' that the professional is always right. He talked about how in his work he always worked from the premise that he was wrong. Designing this approach into the process led to an openness to reassessing at any stage.

I came to think that an Energy Descent Action Plan should be like this. It ought not be cast in stone, rather be a collection of ideas that is reworked and revised regularly. The original idea in Kinsale was for an annual revision, with each new update containing news of what had been achieved since the last one. From the experience of those now driving forward the Kinsale process, this has proved to be too onerous a task on top of actually implementing the plan - which is, after all, the main point. The principle still applies though, that once the first plan is done, it is taken out into the community and 'tested' through a series of specific Open Space events.

The worst-case scenario is what happens with some other 'plans'. They become, like the work of the engineer referred to above, carved in stone, immutable and fixed. "We are working our way through the plan", even though that plan may be long since irrelevant or based on assumptions that have long been superseded by events. By designing this flexibility into the process, we can make it infinitely more powerful, and give the community a far stronger sense of ownership and involvement.

Reflections on the Kinsale process

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The KEDAP arose from a programme of community think-tanks, awareness-raising, the work of the students and the inputs of various people in the area with ideas to offer. It is useful to wonder what might we have done differently, and indeed, whether it has made any difference. Firstly, some reflections on how it might have been done differently.

The process was not really as embedded in the community as it could have been - certainly nothing compared to the scale of the subsequent work in Totnes, Lewes, Stroud and the other emerging Transition Initiatives. It was principally my initiative and concept (with the support and inspiration of an assortment of others), and despite many of the students having been involved, when I left at the end of term to move to Totnes, no obvious support structure was in place to enable a continuation of the process. The team who had driven it forward were mostly not from Kinsale, and there was no community group in place to carry it forward.

Had it not been for Louise Rooney and Catherine Dunne (both former students), who formed

Transition Design, continuing to drive it along, it could have disappeared without trace. From this I learned that it is essential to root the process in the community. I can however excuse the approach used in Kinsale, in that the Action Plan is, in effect, a suggestion for further action, and once finished was offered to the community to take and develop in whatever way they felt most appropriate. Basically the lesson here is that the process needs an in-built resilience, so that one person can drop out without affecting the project, something that has been better addressed in subsequent Transition Initiatives.

Insufficient awareness-raising

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What would have been ideal would have been to have trained students up at an early stage to run peak oil awareness workshops in schools, youth clubs, gardening clubs - to anyone who would listen. The reason we didn't do this in Kinsale was constraints of time. To start with, we didn't know what the process we were developing was going to look like, and were still coming to grips even with what energy descent would mean in practical terms ourselves. Now, in the Totnes process, we run the Skilling Up for Powerdown evening class, to better equip people to be able to do this. This also makes the concept better embedded in the community. The problem with Kinsale was that I didn't live there, so I didn't know all the groups and networks, something such a training course may well have got round.

What's happening now in Kinsale?

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Is Kinsale now an Irish coastal utopia, all local food and pushbikes? No. Has the Kinsale Energy Descent Plan been rigorously implemented step-by-step? No. It has however, been the trigger for lots of action and activities. Initially the process was driven along by Louise Rooney supported by Catherine Dunne under the banner Transition Town Kinsale (TTK), and after a while a committee was set up which includes, among others, a member of the Town Council. TTK has monthly public meetings and publishes regular updates in the local community newsletter under the heading 'Transition Times'. They have also:

- run a number of film screenings and talks, as well as a one-day workshop with Brian Weller from Willits, a town in California spearheading innovative strategies for economic relocalisation
- been awarded some grant funding for a community garden project, begun developing a model permaculture garden on a local Council estate
- set up a community composting scheme on another housing estate within the town
- organised a fundraiser for TTK at the Further Education College which generated over 1,000 euros, with food, talks, films, and concerts in the amphitheatre
- prepared a brochure about what they are doing (to be distributed to every house in the town), and one member has produced an edited version of the KEDAP, to make it more available and accessible
- run a number of workshops with local schools setting up vegetable gardens and

planting fruit bushes.

There are now five subgroups meeting regularly: Food, Energy, Transport, Events, and Waste. When I asked Councillor Isabelle Sutton, a member of TTK, for her thoughts on how the process had gone and whether the EDAP had been a useful thing or not she replied, "It has been a huge help; we wouldn't be where we are now without it. We are always referring to it for the next thing to do."

One hindrance to the Kinsale process, and perhaps the key reason why it hasn't progressed further, is that, in terms of the twelve steps for a Transition Initiative process set out in Part Three (see page 148), Kinsale started straight away at number twelve, without the preceding eleven. This in effect meant that the process wasn't really grounded in a strong community awareness, didn't have the momentum behind it that an Unleashing generates, didn't emerge from local groups, was only based on one general Open Space Day, and had done no work with the older members of the community. There were, via the Permaculture course at the College, a good few visible, practical manifestations in place, and the Great Reskilling concept was understood and pursued, but both of these were, at that point, quite limited to the College grounds. Because of this, TTK really had to go back to square one, starting the process from scratch with the KEDAP to refer to as a guide, but not as a plan of action endorsed by the community.

However, as we have seen, up to now at least its impacts have been felt far more keenly beyond Kinsale than they have been in the town itself. What emerged from the work in Kinsale was an idea, a model, and a sense that, as Richard Heinberg put it in his Foreword to this book, a successful response to peak oil and climate change looks "more like a party than a protest march".

Summing up Part 2

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At one of Transition Town Totnes's Open Space Days in late 2006, a woman said to me, "When I think of what TTT is doing I feel so full of hope I could cry." This chapter has argued that hope is one of the key emotions we need to nurture and sustain in order to navigate the troubled waters ahead, and it has been something that environmental campaigns until now have struggled to generate. We saw in this chapter the different ways in which an awareness of peak oil can affect people in the varied manifestations of 'Post-petroleum stress disorder'. We also saw how important the creation of visions of a lower energy future is, and explored some tools, such as storytelling, that can be used to help create them.

Sometimes people can be dismissive of the inclusion of insights from addictions treatment or the addressing of the distress that immersion in peak oil and climate change awareness can bring about, seeing them as 'touchy-feely' stuff, or as somehow not practical or relevant to actual activism. I would challenge this. I think it is naive to expect that we could give someone a DVD of *The End of Suburbia* or *An Inconvenient Truth*, which they would then go home and watch on their own, in a darkened house, and expect them to be unaltered by the experience.

If finding out about peak oil and really taking on the implications of climate change were distressing for me, it would be reasonable to assume that they might be similarly so for other people too. We see it as entirely reasonable that someone who has gone through a distressing event in their life might receive counselling afterwards, but is it not logical to think that it might be advisable, given the scale of change our communities are about to undergo collectively, that we might begin to explore now how to, in effect, counsel them through such a transition, and all that it will entail: in effect pre-trauma counselling, rather than post-trauma. I feel that adding this dimension to the work of Transition Initiatives can only strengthen them, and the insights from the application of tools like the FRAMES model open up the possibility of a whole new way of thinking about engaging communities in this work.

Finally, this chapter also explored the first attempt at creating a community-scale vision by students at Kinsale Further Education College in early 2005. Although at the time no-one involved really appreciated the significance of what had been created, it has since become the foundation and the inspiration for the rapidly growing Transition movement. Sometimes an idea appears which is the right idea at the right time, and the Kinsale EDAP is one such idea. Since its publication the idea has evolved and expanded, and become increasingly dynamic. At its heart though is the core message that also underpins the Kinsale plan, that alongside the desire for change, we need to create a vision of where we want to go. The Kinsale EDAP opened with the following quote by Joel Barker: "Vision without action is merely a dream; action without vision just passes the time; vision with action can change the world."

Part 3: The Hands - Moving from ideas to action: exploring the Transition model for inspiring local resilience-building

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"The time is right to look at what it would mean for the UK over the period of fifteen to twenty years to create a post-oil economy - a declaration less of 'oil independence' and more the end of oil dependence." - David Miliband, UK Foreign Secretary

"Innovation requires a good idea, initiative, and a few friends." - Herb Shepard

"Let the ideas arise from the community and remain under community control. The job of the Council is to facilitate, to listen, possibly to provide advice, contacts or funds and, most important, to ensure that bureaucracy does not get in the way of grassroots initiatives." - a local councillor in contact with the Transition Network

Clearly, given the scale of the coming changes outlined above, the idea that we can navigate a safe way through merely by changing our light bulbs and turning the heating down a bit is completely insufficient. In Part Three, 'The Hands', we will look at how we can begin, with the community around us, to move towards a post-oil world that is actually preferable to the present. We stand, potentially, on the cusp of many things, one of which is an unprecedented

economic, cultural and social renaissance. The model I have been involved in developing is the Transition model, which is a positive, solutions-focused way of gathering those around you together to start exploring community-scale responses to peak oil and climate change. When we launched the UK's first Transition initiative, Transition Town Totnes, in September 2006, we talked flippantly about the idea 'going viral'. Now, eighteen months later, it has.

The Transition movement has rapidly become one of the fastest-growing community-scale initiatives in the world. In this part of the book, I will attempt to define what a Transition Initiative is, as well as present the Twelve Steps of Transition, the essential ingredients of the early part of a Transition process which should provide what you need to get started. The idea is that by the end of Part Three you will be fully equipped to start this process where you live. The essential message of this part of the book is that we cannot do this as individuals, and that both climate change and peak oil have to underpin both our thinking and our decision making. We need to think bigger, we need to work together with other people and we need very much to accelerate our efforts.

Chapter 10: The Transition concept

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Transition Initiatives

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So what actually is a 'Transition Initiative'? The initial term used to describe this concept was 'Transition Towns', but this has since become largely irrelevant, given that we are now talking about Transition cities, boroughs, valleys, peninsulas, postcodes, villages, hamlets and islands . . . So although none of these alliterates quite as nicely as Transition Towns, Transition Initiatives seems to be the best overall term. Transition Initiatives are an emerging and evolving approach to community-level sustainability, which is starting to appear in communities up and down the country. They are, to use a term coined by Jeremy Leggett, "scalable microcosms of hope". The idea began, as we have seen in Chapter 9, with the Kinsale Energy Descent Action Plan in Ireland, and has since spread to communities around the UK and beyond.

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.

The future with less oil could, if enough thinking and design is applied sufficiently in advance, be preferable to the present. There is no reason why a lower-energy, more resilient future

needs to have a lower quality of life than the present. Indeed, a future with a revitalised local economy would have many advantages over the present, including a happier and less stressed population, an improved environment and increased stability.

In fact some awareness of this is starting to appear at government level, in Australia at least. Andrew McNamara, Queensland's Minister for Sustainability, Climate Change and Innovation recently said:

"There's no question whatsoever that community-driven local solutions will be essential. That's where government will certainly have a role to play in assisting and encouraging local networks, who can assist with local supplies of food and fuel and water and jobs and the things we need from shops. . . .

We will see a relocalisation of the way in which we live that will remind us not of last century, but the one before that. And that's not a bad thing. Undoubtedly one of the cheaper responses that will be very effective is promoting local consumption, local production, local distribution. And there are positive spinoffs to that in terms of getting to know our communities better. There are human and community benefits from local networks that I look forward to seeing grow."

How this is explored and developed in practice will be different in each settlement: rather than offering prescriptive solutions, Transition Initiatives aim to act as catalysts for a community to explore and come up with its own answers.

They focus the collective mind on the practicalities of energy descent, which, as we saw in Part One, an increasing number of commentators argue will be the inevitable outcome of both peak oil and climate change. Transition Initiatives aim to create communities that are resilient; that is, more able to withstand shocks from outside (a concept explored in Chapter 3), be they from climate change, problems of energy security, or rising fuel prices. Rather than being just an intellectual exercise, they explore the practicalities of the conscious relocalisation of a settlement; to paraphrase David Holmgren (talking about permaculture, but the same is true in this context), Transition Initiatives are 'the wholehearted and positive acceptance of energy descent, as not only inevitable but as a desired reality'.

Given that oil and gas are depleting resources, and that we urgently need extreme cuts in CO2 emissions, even to the extent that our daily lives sequester more carbon than they produce, Transition Initiatives ask what would such a world actually look like? How would we live? Where would our food come from? What would we hear when we opened the window in the morning? The Transition process offers a positive, solutions-focused approach that draws together the various elements of a community to address this common challenge and sees much of the solution as coming from within, through a process of unlocking what is already there, rather than from experts and consultants coming in from the outside.

In Figure 18 on page 135 I attempt to distinguish how the Transition approach differs from more conventional approaches to environmentalism, having put resilience-building as one of its key objectives. I appreciate that in my 'Conventional Environmentalism' column I have, to an extent, set up a straw horse, so generalised that it verges on a stereotype, but I think this process is an important one, essential in distinguishing the distinctive ground that the Transition approach stands on.

The philosophical underpinnings

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One of the principal foundations of the Transition concept is permaculture. Permaculture is something notoriously difficult to explain in a single sentence: it resists an off-the-cuff definition that would enable an accurate mental picture to be formed. In essence, it is a design system for the creation of sustainable human settlements. When designing the transition that our settlements and communities will inevitably have to undertake, we need a design template with which we can successfully assemble its various components - social, economic, cultural and technical - in the most efficient way possible. Permaculture can be thought of as the design 'glue' and the ethical foundations we use to underpin Transition work, to stick together all the elements of a post-peak settlement. The reason that people with a permaculture background tend to 'get' the Transition concept ahead of most other people is that it is based on permaculture design principles. I have spent the last ten years teaching permaculture, and its ethics and principles very much underpin my thinking.

Permaculture was originally conceived in the 1970s at the time of the first oil crises, as being a 'Permanent Agriculture', moving away from annual cropping and monoculture in agriculture to multi-layered systems making use of productive and useful trees and perennial plants. Its focus on agricultural systems soon broadened, as it became clear that sustainability in food cannot happen in isolation from the range of other elements that make up society - economics, building, energy and so on. The term 'permaculture' became seen as a contraction of 'permanent culture', being about the creation of a culture of permanence. Its most thorough early exposition, Bill Mollison's *Permaculture: a Designer's Manual*, was, in effect, a manual for Earth repair, an astonishingly broad, ambitious, encyclopaedic work which offered the reader a toolkit for Earth restoration. Over the next fifteen years permaculture, at least in the mainstream psyche (despite growing massively and inspiring and underpinning thousands of projects around the world), became perceived by many as an odd form of gardening using car tyres and obscure plants which probably no one would want to sit down to for supper.

In 2004, David Holmgren, the co-originator of the concept, published *Permaculture: Principles and Pathways Beyond Sustainability*, which put permaculture back on the map as a radical design science, and redefined the principles of permaculture as the principles that will be needed to underpin a post-peak world.

When I encountered peak oil, my first response was instinctively to utilise permaculture principles when formulating a response. It struck me that the movement I was so fond of and a part of was still at such a small point in its development in terms of its prominence in national awareness, and the need for its insights in informing a massive-scale social transformation, that we needed to really ramp things up hugely. I began to wonder why that was. Then I came across an excellent and insightful article by Eric Stewart, in which he wrote:

"It seems to me that permaculture houses two virtually polar impulses: one involves removal from larger society; the other involves working for the transformation of society. While the case can be made that removal from the larger society represents action that is transformative of society, I believe that there is an imbalance within the cultural manifestation of permaculture that has favoured isolation over interaction. The cultural shift we need

depends on increasing interaction to increase the availability of the resources permaculture offers."

This hit the nail on the head for me. Permaculture is a movement which offers, as redefined by Holmgren, the design system and philosophical underpinning of a post-peak society, yet at the same time, according to Stewart, it is often guilty of maintaining a distance from that society. Peak oil, to me, is a call to the bodgers and chairmakers in the woods, the market gardeners and orchardists up misty rural lanes, the small-scale wind installers on the windswept highlands, to bring all the wonderful skills they have accumulated, the insights they have obtained through years of practice and contemplation, back to where the mass of the population is starting to realise things are not right. It is a call to learn new ways of communicating with the mainstream, and with an ethic of service, to seek to engage with others on an unprecedented scale.

The Transition approach is, I hope, one in which permaculture principles are implicit, not explicit. It is my attempt to get round the fact that permaculture is a concept that is very hard to explain to the person in the pub who asks you what it means, if you don't have a flip-chart and pens and fifteen minutes in which to draw pictures of chickens and ponds and greenhouses. Permaculture principles underpin this approach, which is designed to mainstream its concepts, presenting them as fundamental to any response to energy descent. Yet somehow the concept of Transition is easier to explain, allowing more time for other conversations. So, if you have a background in permaculture, and some of this feels familiar, that's why.

Six principles that underpin the Transition model

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There are six principles that I feel define what is distinctive about the Transition concept. They have emerged from observing the process as it has unfolded, and, I think, neatly sum up what is unique to this evolving approach.

Visioning

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The concept of visioning was explored in depth in Chapter 7. In the context of these six principles, visioning refers to the fact that the Transition approach has, as a fundamental principle, the belief that we can only move towards something if we can imagine what it will be like when we get there. The vision we have in our mind when we set out on this work will go a long way towards determining where we will end up. Are we working towards Holmgren's 'Techno Explosion' (see p.46), or perhaps something more realistic and desirable? Creating a clear and enticing vision of our desired outcome is a key principle of the Transition process.

Inclusion

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The scale of the challenge of peak oil and climate change cannot be addressed if we choose

to stay within our comfort zones, if 'green' people only talk to other 'green' people, business people only talk to other business people, and so on. The Transition approach seeks to facilitate a degree of dialogue and inclusion that has rarely been achieved before, and has begun to develop some innovative ways of bringing this about. This is seen as one of the key principles simply because without it we have no chance of success.

Awareness-raising

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The end of the Oil Age is a confusing time. We are constantly exposed to bewildering mixed messages. The media presents us with headlines such as "Steep decline in oil production brings risk of war and unrest, says new study", and "Carbon output rising faster than forecast, says study" yet at the same time advertising puts across the conflicting message that business as usual is the only way forward, that globalisation is the only model that can feed the world, and that just buying this next thing will make us happy. Indeed the contrast can sometimes be striking, with an article about the melting of Arctic ice-sheets next to an advert for a new car or cheap flights.

The media to which we are increasingly exposed continually give out double messages, which can leave one feeling perplexed. Sometimes new Transition Initiatives feel that they don't need to do much awareness-raising because everyone must be aware of these issues by now, but it is essential to start with the assumption that people don't know anything about these issues. We need to assume no prior knowledge, and set out the case as clearly, accessibly and entertainingly as possible, giving people the key arguments in order to let them formulate their own responses.

Resilience

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In Chapter 3 we explored the concept of resilience, but it is useful to restate at this point that the rebuilding of resilience is, alongside the need to move rapidly to a zero carbon society, central to the Transition concept. Indeed, to do one without the other will fail to address either challenge.

Psychological insights

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Insights from psychology are also key to the Transition model. It is understood that among the key barriers to engagement are the sense of powerlessness, isolation and overwhelm that environmental issues can often generate. These do not leave people in a place from which they can generate action, either as an individual or as a community. The Transition model uses these insights firstly through the creation of a positive vision (see Principle 1, p.141), secondly by creating safe spaces where people can talk, digest and feel how these issues affect them, and thirdly by affirming the steps and actions that people have taken, and by designing into the process as many opportunities to celebrate successes as possible. This coming together - the sense of not being the only person out there who is aware of peak oil

and climate change and who finds it scary - is very powerful. It enables people to feel part of a collective response, that they are part of something larger than themselves.

Credible and appropriate solutions

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In the film *Way to Go: Life at the End of Empire*, Tim Bennett talks about what he calls the 'happy chapter' at the end of most environmental books, which spend nine chapters telling you how dreadful everything is, and one on the end with a few token solutions. Similarly, I have heard many a talk where the speaker has set out the scale of the climate challenge, and at the end has one slide about turning down our thermostats and changing our light bulbs.

It is important that Transition Initiatives, having laid out the peak oil and climate change arguments, enable people to explore solutions of a credible scale. 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.

The Project Support Project concept

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One of the things that distinguishes the Transition approach is the concept of the Project Support Project (PSP). Ideally, we need Transition Initiatives to be self-organising, and able to harness the passion and enthusiasm that the process unleashes. Whilst looking around for such models, I happened by some considerable serendipity to meet with John Croft of the Gaia Foundation of Western Australia. A couple of months later he returned and ran a one-day training course on his approach for Transition Town Totnes. Some of the tools he had developed, in particular the approach he calls 'Dragon Dreaming', can be found in Appendix 2, but the concept of most relevance here is that of the Project Support Project.

The Gaia Foundation has catalysed and supported hundreds of projects, and has done much work in developing organisational models. It is a small group that has no one person at the centre, and that is founded on a set of shared principles. Any project supported by the Foundation agrees with the following:

1. It involves the personal growth of those involved
2. It strengthens and/or builds community
3. It works in service of the Earth.

Any projects that meet these criteria (Croft recommends no more than six) can apply to become a Gaia Foundation project. Each project has its own bank account, makes its own decisions, and so on. In essence, the concept of a PSP is that, rather than being an organisation that co-ordinates and drives a wide range of projects itself, the aim is instead to create an atmosphere within which projects emerge and then to support them when they do. This means that the organisation can be much lighter and more responsive and, in effect, truly act as the catalyst that these projects are intended to be.

With Transition Town Totnes, we have made this a central concept. We see the role of TTT as an organisation to raise awareness, to continuously raise the profile of the project and its aims, to build interest in the concepts as a whole, and to build enthusiasm for the Transition 'brand'. We exist to inspire and motivate the initiation of projects, and then to network and nurture them once they start. Within this model, one has to be careful that the integrity of the name is preserved. In order for someone to call a project they are doing a TTT project, they need to submit an A4 sheet outlining their proposal. One example is the Book and DVD Resource project, where a woman in Totnes decided she would like to create a collection of sustainability-related books and films, the books being available in the library and the DVDs for free hire in the DVD shop. She had decided that she wanted to do this, she asked for endorsement as a TTT project, which she got, and there are now Â£1,500 worth of books in the library that otherwise wouldn't be there.

One of Croft's suggestions is that groups ask themselves an important key commitment question. Once their proposed project has been effectively worked into a plan, and the draft budget finalised the planning group considers this: "If this project would not get funding from elsewhere, would those involved be willing to carry the financial burden of any losses incurred by the project?" The group driving the second launch of the Totnes Pound found this very useful, a real focuser of minds and generator of commitment.

Issues of scale

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One of the questions we are often asked is what is the ideal scale for a Transition Initiative. In many ways market towns, which are on the scale that many of the first Transition Initiatives started, are the ideal scale. They have a clear hinterland, historically defined by the villages and rural areas whose inhabitants brought their produce to that town rather than to an adjoining one. Similarly, islands are a good scale to work on, as they have a clearly defined boundary. Why the concept of 'Transition Towns' felt so right at the beginning was that the small town is a scale we can all innately relate to. Many people living in a large city crave the more identifiable scale of a town, or in this context, the neighbourhood. Many people feel that as globalisation has increased, the sphere that we are connected to and can actually influence has shrunk. Perhaps so few people vote now because they have come to feel that their vote makes no difference.

I have come to think that the ideal scale for a Transition Initiative is one over which you feel you can have an influence. A town of 5,000 people, for example, is one that you can relate to; it is one with which you can become familiar. Having grown up in Bristol, I am aware that most cities were, historically, a collection of villages, and still have that feel to them. This concept of working at a neighbourhood scale is not a new one.

Ultimately, you will get a sense of what is the optimal scale for your initiative. Indeed, you will probably instinctively already have a sense of this. As you look around you, what feels like the optimal scale to be working on? Where, instinctively, do you feel your sphere of influence to be? Transition Bristol, the first city-scale initiative, seeks to network, inspire, train and enable, and to support the emerging neighbourhood-scale initiatives, Transition Redland, Transition Witherwood and so on, in their own Transition Initiative.

There is no magic formula for the question of scale. Your group will need to follow its instincts, but don't worry about it - it will emerge naturally. Do resist the temptation, which has arisen for some, to try to start too big, thinking at the scale of Transition Yorkshire, or Transition Scotland. While useful as concepts, they are really putting the cart before the horse. While it may be the case that at some point in the future the broad spectrum of groups in a geographical area may recognise a need to network themselves to maximise their effectiveness, this needs to grow from a base of a network of vibrant Transition communities, rather than be created in advance (you can see how the Transition Network encourages groups at different scales in Appendix 5, 'How to become a Transition Initiative').

The interface between Transition Initiatives and local politics

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The power of the Transition process is its potential to create a truly community-led process which then interfaces with local politics, but on its own terms. The role we identify for Local Authorities in this process is to support, not to drive it. Local Agenda 21, although it created many interesting initiatives, was in essence a top-down process trying to pretend that it wasn't. It is important that Transition Initiatives operate independently of input from local politicians, at least to begin with. A Transition Initiative could not, by definition, be a project conceived and driven forward by a Council, although it is one where the active and enthusiastic support of local government is invaluable. What has been happening increasingly in recent months is that the first contact from a community is from someone in the local council, be it District, Parish or Town Council. Sometimes a Council member will end up as part of the Steering Group, or the Council will offer their support in a range of ways.

In the book Peak Oil Prep, Mick Winter argues that one of the main roles of state government in the US (for which read national government for the UK) is to "stay out of the way of local governments". He writes:

"They know better than the state what they need. Give them whatever they want. Focus on projects that serve regions . . . If something can be done at the local level, states should give communities what they need to make it happen - with no strings. If there's something that can only be done at the state level, then that is the state's responsibility."

In the UK one can extend this model down another level, and say that the role of local government is also to facilitate Transition processes, not to lead or guide them but to support them. Increasingly the Councillors who get in touch do have an understanding of this process, and are actively seeking to help facilitate it. One Chairman of a Town Council who contacted the Transition Network wrote:

"Whilst I would see the Council being supportive to a Transition movement, one of the things that I found most attractive about Transition Initiatives was the grass-roots community involvement. In my experience the very best model is the Council supporting and encouraging the various communities, but much if not most of the initiative coming from the various community groups.

We as councillors need to be aware that Transition Initiatives are not something that we

bestow on the community; it is not going to be just a badge or symbol for the Council, it is something that will happen anyway. Though Council support will help and assist the birth, the Council may also help the ideas to move into parts of the community that might otherwise not be reached."

When Transition Initiatives do approach their local or district council, they do so representing a significant part of the community, and with a groundswell of momentum behind them. In Kinsale, once the EDAP was done, a motion endorsing it was submitted to Kinsale Town Council and unanimously approved. In Totnes, six months after the Official Unleashing, the Council passed a resolution endorsing the work of Transition Town Totnes (TTT). This support is very powerful in terms of being able to drive the initiative forward with enhanced credibility, but should only be sought once the project has an established track record and has forged its own identity.

For many towns in the US, such as Portland and Oakland, the passing by the local authority of a 'Peak Oil Resolution' is seen as a key step. This may be the case, but my sense is that the important first steps are to engage the community in the awareness-raising and building the energy for the project, rather than disappearing at an early stage into the bewildering world of policy writing and working at the local government level. Once you have achieved this, local government will want to be part of the process because they can see it as being where the energy and innovative thinking is taking place.

In terms of TTT's interaction with the local authority, one of the most important elements of this is its Liaison with Local Government Group. This was formed by a group of people who had been involved for some time as local councillors, or had sat on various bodies and understood how the political structure works.

This group goes through each new programme of events that is coming up and invites the public representatives who they feel should be there. They also keep an eye on upcoming council consultations. They are a centrally important part of the TTT Initiative. One could argue that if at an early stage prominent local political figures want to get involved, their role is to work with such a group to drive forward the whole larger process.

Chapter 11: How to start a Transition Initiative

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At this stage you might, hopefully, be thinking that you would like to start a Transition Initiative in your community. You might be looking around you and wondering where to start, how on earth you might be able to even begin planning such an Initiative. Below I will introduce the Twelve Steps of Transition, which will hopefully address your 'Where do we start, and then what?' questions.

Before that, though, it is useful to address some of the questions that often arise for people at the early stage of planning a Transition Initiative, and which may well prevent them from

proceeding any further. I call these 'The Seven Buts'.

The Seven 'Buts'

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"BUT . . . We've got no funding"

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This really is not an issue. Funding is a very poor substitute for enthusiasm and community involvement, both of which will take you through the first phases of your transition. Funders can also demand a measure of control, and may steer the Initiative in directions that run counter to community interests and to your original vision. It should be straightforward for your Initiative to generate an adequate amount of income. Transition Town Totnes began in September 2005 with no money at all, and has mostly been self-funding until recently. The talks and film screenings that we run bring in money to subsidise free events such as Open Space Days. You will reach a point where you have specific projects that will require funding, but until that point you'll manage. Retain the power over whether your important Initiative happens, and don't let lack of funding stop you.

"BUT . . . They won't let us"

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There is a fear among some green folks that somehow any Initiative that actually succeeds in effecting any change will get shut down, suppressed, attacked by faceless bureaucrats or corporations. Transition Initiatives operate 'below the radar'; as such, they don't incur the wrath of any existing institutions.

On the contrary, with corporate awareness of rising energy prices and climate change building daily, you will be surprised at how many people in positions of power will be enthused and inspired by what you are doing, and will support, rather than hinder, your efforts. You will find your Transition Initiative is constantly pushing on open doors. The unanimous endorsements of many Transition Initiatives by their local councils is one example of this.

"BUT . . . There are already green groups in this town, and I don't want to step on their toes"

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We'll go into this in more detail in Step 3 (page 152), but in essence, you'd be exceedingly unlucky to encounter any 'eco-turf wars'. What your Transition Initiative will do is form a common goal and sense of purpose for the existing groups, some of which you might find are a bit burnt out and will really appreciate the new vigour you will bring. Liaising with a network of existing groups towards an Energy Descent Action Plan will enhance and focus their work, rather than replicate or supersede it. Expect them to become your allies, crucial to the success of your Transition process.

"BUT . . . No one in this town cares about the environment anyway"

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One could easily be forgiven for thinking this, given the existence of what we might perceive as an apathetic consumer culture surrounding us. Scratch a bit deeper though, and you'll find that people are already passionate about many aspects of what Transition Initiatives will focus on. The most surprising of people are keen advocates of key elements of a Transition Initiative - local food, local crafts, local history and culture. The key is to go to them, rather than expecting them to come to you. Seek out common ground, and you'll find your community to be a far more interesting place than you thought it was.

"BUT . . . Surely it's too late to do anything?"

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It may be too late, but the likelihood is that it isn't. Your (and others') endeavours are absolutely crucial. Don't let hopelessness sabotage your efforts. It is within your power to maximise the possibility that we can get through this - don't give that power away.

"BUT . . . I don't have the right qualifications"

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If you don't do this, who else will? It matters not that you don't have a PhD in sustainability, or years of experience in gardening or planning. What's important is that you care about where you live, that you see the need to act, and that you are open to new ways of engaging people.

Useful qualities for someone starting a Transition Initiative are:

- Positive
- Good with people
- A basic knowledge of the place and some of the key people in the town.

That, in truth, is about it. You are, after all, about to design your own demise into the process from the start (see Step 1 overleaf), so your role at this stage is like a gardener preparing the soil for the ensuing garden, which you may or may not be around to see.

"BUT . . . I don't have the energy for doing that!"

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As the quote often ascribed to Goethe goes, "Whatever you can do or dream you can, begin it. Boldness has genius, power and magic in it!" The experience of beginning a Transition Initiative certainly shows this to be the case. While the idea of preparing your town (or city, hamlet, valley or island) for life beyond oil may seem staggering in its implications, there is something about the energy unleashed by the Transition process that is unstoppable.

Everyone I have spoken to who has initiated a Transition project, has had a period after a few weeks of thinking, "What have we started here?!" It may feel that you will have to do it all yourself. You may feel overwhelmed by the prospect of all the work and complexity, but people will come forward to help. Indeed, many have commented on the serendipity of the

whole process, how the right people appear at the right time. There is something about seizing that boldness, about making the leap from 'why is no-one doing anything' to 'let's do something', that generates the energy to keep it moving.

Very often, developing environmental initiatives feels like pushing a broken-down car up a hill; a hard, unrewarding slog. Working with a Transition Initiative often feels like coming down the other side - the car starts moving faster than you can keep up with, accelerating all the time. Once you give it that push from the top of the hill it will develop its own momentum. That's not to say it isn't hard work sometimes, but it is almost always a pleasure.

The Twelve Steps of Transition

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These Twelve Steps emerged from observing how the Transition Town Totnes initiative evolved, and from other communities contacting us to ask what we were doing. They don't take you from A-Z, rather from A-C, which is as far as we've got with this model so far. These steps don't necessarily follow each other logically in the order they are set out here; every Transition initiative weaves a different way through the Steps, as you will see. These Twelve Steps are still evolving, in part shaped by your experience of using them. There may end up being as few as six or more than fifty!

It is important to observe that they are not meant to be prescriptive; rather they are intended to suggest pieces of the puzzle you may choose to assemble. You do not have to follow them religiously, step-by-step: you can use the ones that feel useful, discard the ones that don't, and add in new ones that you come up with. As you will see, many of the communities that have already started this process have already begun assembling them in different ways.

Set up a steering group and design its demise from the outset

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Bill Mollison, the co-originator of the permaculture concept, once famously said, "I can't save the world on my own. It'll take at least three of us", or words to that effect. In starting your Transition Initiative you will need to gather some like-minded souls in order to drive forward the first stage of the process. What is essential though, and its importance is becoming increasingly clear, is that from its first meeting, that group must design its own demise, set a defined lifespan for its functioning.

So many groups get atrophied and stuck with people who cling to their roles in a way that stifles the progress of the project. In the longer term it is important that the project becomes driven by those who are actually doing things. I would suggest that you form your Steering Group of reliable people with the aim of getting through Steps 2 to 5, and agree that once a minimum of four sub-groups are formed, your group disbands and the Steering Group becomes made up of one person from each of the groups. This requires a degree of humility, but is very important in order to put the success of the project above the individuals involved. It is also quite a relief! It means that you aren't forming a group whose aim is the complete relocalisation of the settlement in question; just to do the first few Steps - a much more manageable task!

Transition Tip

- Invite a professional facilitator/change manager to help you
- Involve everybody in the transformation
- Create, together, clear written aims and principles for the new formation (see our Wiki) and refer to them frequently
- Try to stay unattached to outcome, and let go of your own agendas
- Some people will leave and others will join - whoever turn up are the right people
- Trust the process! A new mindset takes time to take root

(by Adrienne Campbell, Transition Town Lewes)

Raise awareness

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You cannot assume that people in your community are familiar with peak oil, climate change, or even with basic environmental concepts and principles that you might take for granted. It is essential before launching an Official Unleashing event (see 4 below) that you have prepared the ground. In Totnes we spent nearly a year giving talks, film screenings and networking before we organised the launch. During that time we learned a great deal about how to do this most effectively.

We screened *The End of Suburbia* three times, and had a full room and a completely different audience each time. Various methods for facilitating film screenings can be read about in Tool for Transition no. 7 (see p.154). Other films we showed were *The Power of Community* and *Peak Oil: Imposed by Nature* (other ideas for films can be found in the Resources section). One important point is that you can never assume that everyone has seen the films and that no one will come if you show them again. These films create a ripple effect and lots of people want to see them. It is important that these screenings are presented in such a way that they are fun and memorable, and create a buzz, so that people go home and tell their friends and family.

Transition Tip

- Start any film screening or talk by inviting people to turn to the person next to them and tell them who they are, where they have come from, and why they are here. Then after the film (or talk) do the same thing (but with the person on their other side), this time to talk about their thoughts on the film. People enjoy doing this, it really enhances their enjoyment of the evening and is a powerful tool for starting to build connections.

Another aspect of this awareness-raising work is talks. It is essential to avoid a series of peak oil talks which are doom-laden evenings about how civilisation is about to implode and we are all about to start eating each other when oil hits \$120 a barrel. This will lead to your Transition Initiative falling at the first hurdle. Find speakers who can present the matter in a positive, engaging way. Organise events that make people think, but which also support them through the process of realising the illusory nature of the oil-created world around them, which for

some can be quite traumatic. You need to be prepared for the diverse manifestations of 'post-petroleum stress disorder'. Make sure you design enough space into your events for people to talk with each other and feel some degree of support in exploring these issues.

Although your awareness-raising process is, on the surface, about informing people and disseminating ideas, it is also, perhaps more importantly, about getting people talking to each other, starting to build the social networks on which your Transition Initiative will depend. Make sure any event gives people the time to talk to the person next to them.

You might also run an evening class, go into schools, write articles for the local paper, or get something on the local television. There is really no clear way of knowing when this stage has been done sufficiently to allow you to move on to Step 3 - you just have to gauge that yourself somehow. I was only able to effectively assess the impact of what we had done when Richard Heinberg was in Totnes in December 2006 and at the beginning of his talk he asked the audience how many of them were familiar with the concept of peak oil. Three quarters of the room (which contained about 350 people) put up their hands.

This stage also allows you, if you are new to the town you are working in, to meet people, to see who are the people who come to all these events, who may become your key allies. All this will stand you in very good stead when you kick off the process proper. The social network building aspect of this is as important, if not more so, than how many people are able to tell you who M. King Hubbert was and what the annual oil output of Mexico is.

Transition Tip

- One way you can use your film screenings to draw in official bodies is to invite a member of the local authority, preferably one who makes decisions on energy and environmental issues, or perhaps a planner, to be a member of a panel to comment on the issues raised by the film. This will be beneficial in two directions: it introduces them to the issues your Initiative is exploring and also to the organisation, but it also allows you to question them about their thinking on such issues.

Lay the foundations

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It is extremely unlikely that you will be starting a Transition Initiative in a place where absolutely no environmental initiatives have ever happened before. It is possible that such places exist: if you are in such a place it might be worth contemplating why nothing has ever happened there before! Within the community there will be people who are just finding out about environmental ideas, people who have been familiar with the intellectual side of it for years but haven't done much practical action, those who are gardeners, growers and builders, and people who are burnt out from doing similar stuff for years while no one listened.

There is also a range of official and semi-official organisations and bodies, from local government to Women's Institutes. It is essential at this stage that you network with these groups, and make it clear that this is a process of supporting and collaborating with them, rather than duplicating their endeavours or, worse still, dismissing their years of hard work as

somehow irrelevant. Offer presentations to all the existing environmental and decision-making organisations in the town.

When introducing your Initiative to other groups, give a concise and accessible overview of peak oil, what it means, how it relates to climate change (this may be an important point with some green groups who are committed to tackling climate change but not really *au fait* with peak oil and the relationship between the two), how it might affect the community in question, and the key challenges, as well as the key opportunities it presents. Set out your thinking about how the Transition process could act as a catalyst for getting the community to explore this and to begin thinking about grass-roots mitigation strategies.

You do need to be a bit careful in jointly organising events with other groups: when it works it's great, but if it runs into problems it can be difficult to keep everyone happy. You will need to ensure that each group is happy with how the event is presented, promoted and facilitated. For example, we have organised some talks with Schumacher College and the local FOE group (see poster above), which were very successful. Part of this phase also involves reaching out to groups who are usually bypassed or ignored by environmental groups, for example the local Chamber of Commerce or the Conservative Association. If this is going to work it will need the input of a broader range of bodies than has been the case in the past.

In essence, 'Laying the foundations' is about networking with existing groups and activists, and stressing that this Transition Initiative is not a process of duplicating their work but of requesting their input in a new way of looking at the future. Acknowledge and honour the work they do, and stress that they have a vital role to play.

Transition Tip

- Invite other local groups to co-present events with you, and design as many events into your programmes that involve other groups as possible.

Organise a Great Unleashing

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I use the term 'Unleashing' because that is the sense that this event should embody. Through the first three stages, ideally you now have a groundswell of people fired up about peak oil and climate change and eager to start doing something. The aim of this event is to generate a momentum which will propel your Initiative forward for the next period of its work.

The Official Unleashing of Transition Town Totnes was held in September 2006, and had been preceded by about ten months of talks, film screenings and so on. By the time of the Unleashing, we felt that there was sufficient energy in the town to do this successfully. This was based, entirely unsubjectively, on the fact that numbers attending events were steadily increasing, more people wanted to stop us in the street to talk about it, and also the fact that we were getting impatient to kick it all off. How you judge when to do your Unleashing is entirely a matter of collective judgement.

Some groups, such as Transition Penwith, started pretty much from cold with an Unleashing, because they had the chance of having Richard Heinberg present it, a rare enough

opportunity. The ideal though, as I see it, is like one of those toy volcanoes that children like: you gradually add a bit of vinegar, a bit of baking powder, a bit more vinegar, a bit more baking powder, until the pressure inside builds to an unbearable point, and then BAM, you hold your Unleashing. It marks the arrival of the project, and it is a celebration of the community's desire to act.

It is important to stress, as Chris Johnstone did at the TTT Unleashing, that this is an historic evening, the beginning of the great change, the evening people will look back to as the evening where it all started. There is a balance between it being perceived as too flaky for the serious environmentalists, and too dry for those who like to be more emotional about things. It is a balance Chris strikes perfectly, and I'm sure others can too. His angle is that, as observed in his work with addictions, once we decide to act, we find our power, and that in seemingly impossible situations, it is by doing it that we find qualities and strengths we never knew we had.

Other things we did at the Totnes Unleashing were getting people talking to each other in pairs about their concerns and fears in relation to peak oil and climate change, as well as their visions for the future. They were invited to write these up on post-it notes and put them on the wall. These were subsequently typed up and emailed out to everyone who attended. As many opportunities as possible for people to meet each other and to talk were built in. It should be a memorable and historic occasion. How you do that will be different in each community.

An Unleashing will inevitably be different from the usual peak oil presentation. It is not about bad news, gloom and doom and passing on to people the information about just how precarious our situation is. It is a celebration of the possibilities that lie ahead of us if we act together with imagination, having harnessed our collective genius. It is a celebration of the community's resourcefulness and creativity. Certainly the Totnes one created a huge amount of energy and goodwill that has driven it forward ever since. This also happened in Penwith and Lewes. One thing we should have done and which I would recommend is to draw up a list of people to invite, councillors, planners, politicians, local movers and shakers.

An Unleashing is not something to be organised lightly. It is a one-off opportunity to bring all those people together and to launch the Transition Initiative. If you get it right, people's lasting impressions will be that this is a dynamic project which is going to do great things. A poorly organised, ill-attended, half-hearted Unleashing will make the next phase of your work an uphill struggle. I would think that six months to a year after your first film screening is about right, but clearly that depends on your situation. It should be a powerful, passionate, informative, and inspirational evening that people will remember for many years to come. Don't rush it.

Transition Tip

- Your Unleashing need not just feature talks. It could include music, performance, images from local history. It is also useful to create space within it for local groups to present themselves. At the Unleashing of Transition Town Lewes, adjoining the main room was a room where all the various local 'green' groups and community organisations had stalls.

Form groups

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Part of the process of developing an Energy Descent Action Plan is that of tapping into the collective genius of the community. One of the most effective ways to do this is to set up a number of smaller groups to focus on specific aspects of the process. Each of these groups will develop their own ways of working and their own activities, but will fall under the umbrella of the project as a whole.

Transition Tip

- Each meeting of a working group could invite a 'witness', someone who has expertise in the field in question, who could then be asked for their perspective on the issues, their experience and their ideas for subsequent 'witnesses'.

As organisers of the initiative, you can be quite proactive in getting these groups to form. In Totnes what we did was to design the programme so as to encourage specific groups. For example, to get the Food group going, we first ran an evening event called 'Feeding Totnes: past, present and future', where speakers addressed each aspect of the issue in turn. This drew in many of the people in the town with an interest in food.

This was followed three days later by an Open Space Day on food. This explored in depth the possibilities of the relocalisation of food in the Totnes area. From this meeting a number of initiatives emerged, and people came forward to run the Food group. We have since used this model to start a few of the other groups.

In TTT, we have set out a collection of guidelines that we ask those considering forming new groups to read through first. They run as follows:

- Each group should have a core of people who steer it, and who meet regularly, but also be open to whoever else wants to come.
- Each group should be continually asking itself 'Who isn't here that should be here?', that is, always being open to exploring new 'avenues' by which new people with relevant skills can be drawn into the group.
- The key task of each group is to explore the question: 'What is a vision for a low-energy Totnes in relation to this field, and what might a timetable for that look like?' The group is assembling ideas and information that will enable them to put together their section of the Totnes Energy Descent Action Plan.
- Each group will have access to the relevant section of the project's website, and will also be able to use the logo in its publicity materials. In exchange, it will keep a record of its business on the website, be it as minutes or as notes. At present the Transition Network offers Wiki webspace to new Transition Initiatives, which is easy to maintain and update.
- Each group will also be able to use the Wiki website, allowing it to post initial drafts of documents or of its section of the Energy Descent Plan, in such a way that others can edit it online - a powerful collaborative information-building tool.

The final thing to say on the question of setting up groups is that you cannot assume that everyone who offers to form and facilitate a group actually has the skills to do so. It became

clear after a while that it was useful to offer training in facilitation and designing successful meetings to all our group convenors. We organised a day with Andy Langford and Liora Adler of Gaia University on the subject of Designing Productive Meetings. This covered basic tools like 'Go-rounds', 'Think and Listens' and so on (see Tools for Transition No. 9, pp,164-5), and was extremely useful.

It is also useful for these groups to meet each other on a monthly basis (at least). In TTT, the facilitators of each group meet on a monthly basis. Each group sends one person to that meeting. We meet and then have lunch together. Designing in as many opportunities for the groups to network and meet each other as possible is crucial.

Transition Tip

- It may not always be necessary to actually start a new working group. Sometimes there may be existing groups in the area who have done lots of work on a particular subject. There may, for example, be strong renewable energy groups, or local food groups. Consider avoiding duplication by going to them and asking if they may like to take on the role of being a Transition group, and feed their ideas into the EDAP process.

Use Open Space

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Open Space Technology is an extraordinary tool. It has been described as "a simple way to run productive meetings, for five to 2,000+ people, and a powerful way to lead any kind of organisation, in everyday practice and ongoing change". In theory it ought not to work. A large group of people comes together to explore a particular topic or issue, with no agenda, no timetable, no obvious co-ordinator and no minute-takers. Yet by the end of the process, everyone has said what they needed to, extensive notes have been taken and typed up, lots of networking has taken place, and a huge number of ideas have been identified and visions set out. (See page 168 for how to run an Open Space event).

Transition Tip

- Make sure that you have given a lot of consideration to the focusing question that will underpin your Open Space Day. It should be one that is relevant to those attending and that will draw in those people passionate about the subject, for example "How might our town feed itself beyond cheap oil?", or "What is the role of education in a lower-energy future?"

At TTT Open Space Days, the ideas generated in the event are uploaded in real time, live onto our website. So far these have been on Food, Energy, Housing, Economics, the Arts, the Psychology of Change, Education and Transport. This requires someone prepared to 'scribe' the notes that emerge from the different groups, access to broadband, two laptops, a memory stick or writeable CD, and someone able to upload onto the website. A digital camera is also useful. The beauty of posting it live onto a Wiki site is that anyone who is following the event anywhere in the world can send in their thoughts on the subject. It also means that at the end of the day you don't have loads of notes that some poor soul has to take home to type up, but

that all the outcomes of the day are typed and available for people to muse over and add comments to when they get home.

Some time in advance of each Open Space, draw up a list of the key people you feel should be there for that topic. Send them a personal, not a generic, invitation. Make them feel that you have specifically invited them because of their expertise on the subject. There are other tools which are similar to Open Space, such as World Caf  (see pp.184-5) which have many of the same outcomes. The essence is to get people talking, building relationships, discussing ideas and making connections. It can do a great deal to identify priorities for the work ahead in relation to that subject.

Transition Tip

- Sustaining energy levels can be done in different ways. Ensure that tea and coffee are available throughout the day. If you can organise lunch for people it helps a great deal, as it gets round the problem of people drifting off for lunch and then getting back late. One thing we did at one Totnes Open Space day was have a group of musicians who were playing later that evening in Totnes come and play to the Open Spacers at lunchtime. It was good advance publicity for them, and it completely changed the focus and re-energised the day.

Develop visible practical manifestations of the project

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It is easy to come up with ideas, but harder to get practical things happening on the ground. It is essential that you avoid any sense that your project is just a talking shop where people sit around and draw up endless wish lists. Your project needs, from an early stage, to begin to create practical manifestations in the town, high visibility signals that it means business. The power that doing this has to affect both people's perceptions of the project and their willingness to engage is huge.

These manifestations can take a variety of forms. It might be productive tree plantings, solar panels, or hemp/lime plastering. It could be a beautiful cob bus-shelter or an alternative currency used for a defined period. They should, at this point, be both uncontroversial and photogenic.

In permaculture, we talk about the need to observe a plot of land for the first year before making any interventions or completing any design. The same goes for a Transition Initiative. Your first year is a time for networking, brainstorming, awareness-raising, information gathering. It is the time when you are gathering the pieces that are later assembled in an Energy Descent Action Plan. You don't want to start doing projects which, once you have completed your Energy Descent Action Plan, you realise are in the wrong place and not actually properly thought out. While it is essential to take your time and plan properly, there is a balance to be struck here; you also need to carry the community along with you. Small highly visible projects will allow people to see that you mean business, that you are here to stay, and will give them a tangible sense of what you are talking about.

People need to get a sense of the whole, and to see things happening that they can go home and tell their friends about. These practical manifestations will also bring into the project the

people who have spent the first few months sitting back, saying, "We'll see. I've heard all this before, this is just another of those flash-in-the-pan projects, I'll keep an eye on it." When they start to see infrastructure going in, it becomes infectious, they want to be a part of it.

If you have done the previous steps well, you may well find that the sub-groups start developing their own practical projects automatically. As the momentum builds, you will find practical manifestations bursting out all over the place.

Another spin-off benefit of these practical projects is their great team-building potential. A group meeting regularly to discuss food issues is one thing. If that group meets and plants an orchard in a day, shares a picnic and leaves with a sense of great achievement, that is very powerful in terms of building the dynamic of that group. A Transition Initiative with dirt under its fingernails will carry a lot more credibility. In Totnes, the Totnes Pound has been our most successful manifestation of this Step.

Transition Tip

- Make sure that you get good publicity for all these practical manifestations. This will be very helpful in building a widespread confidence in what you are doing. Involve local schools, local dignitaries, and design events that grab the attention, be they tree plantings, natural building projects in schools or delivering books to the local library. Make them as photogenic as possible.

Facilitate the Great Reskilling

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I believe that one of the main factors contributing to the sense of panic that often sets in immediately after an awareness of peak oil, especially for young men, is the realisation that we no longer have many of the basic skills our grandparents took for granted. One of the most useful things a Transition Initiative can do is to offer widely available training in a range of these skills.

What skills ought we teach? We need to enlarge our ideas of what these might be. Some research is useful, in terms of what skills people used to have that might still be appropriate, as well as looking at the skills people have or need now. These Reskilling events fulfil a few different functions:

- They bring people together, relaxing and learning new skills
- They build networks
- They build a fundamental sense of 'can do'
- They can create a link between old and young, as skills are passed on
- They can be practical events which actually put something in place, like a natural building day that produces a cob bus stop or similar, thereby offering an opportunity for creating Practical Manifestations (see Step 7, p.163)

Work with existing groups, local sustainability centres, colleges and so on where possible. Draw on local skills wherever you can. It is great if you can design these events in such a way that students from the first running of a course can help teach the students the second time it runs.

To begin with, your Great Reskilling will largely consist of one- to two-day courses, or longer evening classes like 'Skilling Up for Powerdown' (see page 194). In time you might be able to offer something like the two-year full-time Practical Sustainability course at Kinsale FEC in Ireland. On that scale there is a lot you can do in terms of outreach and engagement.

A Transition Initiative invites a community to undertake a journey, to embark on a collective adventure. Very often in modern society people feel disempowered, such that even changing an incandescent light bulb for a low-energy one is too much effort. Your Great Reskilling should give people a sense of the power of solving problems, of practically doing things rather than just talking about them, and of the sense of belonging that comes from working alongside other people. Above all it should be fun.

Build a bridge to local government

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Whatever the degree of groundswell your Transition Initiative manages to generate, however many practical projects you manage to get going on the ground and however wonderful your Energy Descent Plan is, you will not progress very far unless you have cultivated a positive and productive relationship with your local authority. Whether it is planning issues, funding issues or whatever, you need them on board. You may well find, in many places now, that you are pushing against an open door.

It is advisable to start the process of drawing them in as early as possible in the process. Go and see the relevant people within the Council and introduce yourself and the project. It is essential to steer clear of any sense of 'them and us'. It would also be very useful to research the development plans that they have generated, to see what they have already done. Rather than your reinventing the wheel, very often Councils have done lots of community consultation and research, and although much of it will be based on dubious presumptions with regards to oil availability and climate change, it is worth checking out.

In short, seek to engage. You may well find people far hungrier for your ideas than you imagine! In Transition Town Totnes, our Liaison with Local Government Group works on ways in which the TTT Initiative can most successfully interface with Local Government. They do much that I have set out above, and seek to maximise the productive 'edge' between the two. Eventually the link with local government might extend, once an Energy Descent Plan has been produced, to someone running for election to the local council on an Energy Descent Plan ticket. If Steps 1 to 7 have been successfully pursued, they should get in by a landslide!

Transition Tip

- For any big events you plan to run, draw up a list of people within the local authority (as well as local business, the community and so on) who you feel should be there, and invite them personally. Make sure they are personally welcomed and greeted upon their arrival.

Honour the elders

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For those of us born during or after the 1960s when the cheap oil party was in full swing, it is very hard to relate the idea of life with less oil with our own personal experience. Every year of my life (the oil crises of the 1970s excepted) has been underpinned by more energy than the previous years. I have no idea of what a more localised society looked like in the UK; the closest I have is how towns were in rural Ireland when I moved there in 1996, where most of the shops were still owned by local families, the most memorable ones slightly damp-smelling with wooden floorboards, selling the most unusual combinations of things (paraffin lamps, boxes of biscuits and aprons) generally run by a couple in their late sixties. There is a great deal that we can learn from those who directly remember the transition to the age of Cheap Oil, especially the period between 1930 and 1960.

As part of the Transition Town Totnes Initiative, we have been doing oral history interviews with older people in the area. One, with Muriel Langford, now in her mid-eighties, contained a passage I found especially illuminating:

"Upstairs I had Jeremy in his cot on my side, so I had an electric torch so that when he woke up I would switch on the torch and then immediately Eric would turn to the candle on his side which you couldn't have on the side where the baby was, and he'd light the candle to save the battery in the torch. We had a good little system going!"

This was in 1945, and batteries were so precious that they had to develop this system to minimise their use. Totnes at that time imported very little food, people lived at higher densities within the existing buildings (which were lived in more like bedsits rather than the larger homes they are nowadays). There was very little traffic. She spoke of moving into a flat on the High Street in 1945 which required the windows to be removed and large pieces of furniture to be winched in. This meant that the removals lorry was stationary in the middle of the road, where nothing could pass, for over 4 hours. Nowadays after 4 minutes you would have created a major traffic jam and you'd have some very irate drivers to deal with!

Transition Tip

When doing oral history interviews, avoid doing them with more than one person at a time. I recently went to do one with a lady who had fascinating stories to tell about being a land girl on Devon farms during the War, but she said, a few minutes into our chat, "My dear, I have nothing interesting to tell you at all, so I invited my friend to come along as well." A few minutes later he arrived, and I started talking with the two of them. The problem is that they began to reminisce; one would say "And down by the Quay there was that shop, what was it called?", the other would reply "Jameson's", to which the first would say, "Oh yes, Jameson's . . . now they had three sons, didn't they?" "Oh yes, Jason, he's in Australia now . . ." and so on. It was very hard to get any useful information at all!

As well as those kinds of anecdote, I find it fascinating to hear peoples' stories of how they lived then. Most people gardened - it was just what they did. People talk of the sense of community they had. It is fascinating to see, when talking to those who lived through the war years, the sense of thrift and 'enough' that those people I spoke to had. What would it take to

rebuild that?

Oral histories are also very useful for getting a handle on the skills that people used to have, which links directly to Step 7 (p.163). In doing research for the Transition Town Totnes process, I found, for example, that until the early 1980s there were market gardens within Totnes, in what are now the car parks, which supplied the shops in town (as described in Chapter 3). Oral histories and historical research can offer fascinating insights into how people used to feed, employ and heat themselves. Clearly not all of it is relevant, and collecting reminiscences carries a danger of romanticising the past and devaluing the present, but there is much that can be learned.

Perhaps you might collect these stories together and publish them. I do think there is something powerful in making one of your first steps in doing this process to go to the elders of the community and ask for their input. It is something that in many cultures would be instinctive, but in ours has been sidelined. One interesting thing when you start doing an interview like this is that people always start by saying "I don't know why you want to talk to me, I'm sure I have nothing interesting to say to you . . .", and then go on to dazzle you with spellbinding anecdotes and fascinating information!

Let it go where it wants to go

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Step 11 is really pretty straightforward, requiring very little elucidation. In essence, if you start out developing your Transition process with a clear idea of where it will go, it will inevitably go elsewhere. You need to be open to it, following the direction of the energy of those who get involved. If you try to hold onto the idea that it will be a certain way it will, after a while, begin to sap the energy that is building around the process. This is what is so exciting about the whole thing: seeing what emerges. It is worth bearing in mind all the way through that your role is to act as a catalyst for the community designing this transition and to facilitate people asking the right questions, rather than to come up with the answers.

Create an Energy Descent Action Plan

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At the moment there is only one Energy Descent Action Plan, the one done for Kinsale in Ireland. It makes no claims to being authoritative or comprehensive; it was, after all, done as a student project before we really knew what we were doing. What it did very well was to suggest a template that other settlements can follow in designing pathways away from oil-dependency. An Energy Descent Plan needn't even be called an Energy Descent Plan. Other names have been proposed by those who feel the term 'energy descent' is somehow too depressing; alternative suggestions have included 'Community Resilience Action Plan' (that one didn't stick too long, for obvious acronymic reasons) and 'Energy Transition Pathway'.

Whatever it is called, the idea is straightforward. 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. Every settlement's EDAP will be different, both in content and in style. However, they will all explore a wide range of areas as well as energy: energy

descent is an issue which affects every aspect of our lives. You will also be exploring food, tourism, economics, education and a lot more besides.

The EDAP model can be seen as a flow diagram in Appendix 4. This is work in progress, to be shaped as more and more communities head off down the road of creating their own EDAPs. We have, however, identified the following ten steps in the process of creating an EDAP:

Step One: Establish a baseline

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This involves collecting some basic data on the current practices of your town, whether in terms of energy consumption, food miles or amount of food consumed. One could spend years gathering this kind of data, but you aren't trying to build up a hugely detailed picture, more a few key indicators around key elements of how the place functions. How much arable land is there, how many cars come and go each day? You may well find your local Council has a lot of this information anyway. Your working groups may have identified some of this information.

Step Two: Get the Local Community Plan

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Your local government's plans for the area are likely to have timescales and elements that you need to take into account in your EDAP. They will also be a useful source of information and data. You will need to decide whether you assume that the existing plan is based on unrealistic assumptions and will become irrelevant, or whether you want your plans to wrap around theirs.

Step Three: The overall vision

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What would your community look like in fifteen or twenty years if it were emitting drastically less CO₂, using drastically less non-renewable energy, and it was well on the way to rebuilding resilience in all critical aspects of life? This process will use information gathered in your Open Space Days, from Transition Tales and a range of other visioning days, to create an overall sense of what the town could be like. Allow yourselves to dream.

Step Four: Detailed visioning

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For each of the working groups on food, health, energy etc. (although this is trickier for Heart and Soul groups, for example), what would their area look like in detail within the context of the vision set out above?

Step Five: Backcast in detail

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The working groups then list out a timeline of the milestones, prerequisites, activities and processes that need to be in place if the vision is to be achieved. This is also the point to define the resilience indicators that will tell you if the settlement is moving in the right direction. Using the tool of backcasting will also enable you to think through some very useful questions. An example of this is the model, being developed in Totnes, of the Local PassivHaus (see p.115).

This takes the Scandinavian model of the PassivHaus, a house which derives all its heating needs from good orientation, super-insulation and the occupants' body heat, and redesigns it to use 80% local materials. However, clearly having a Local PassivHaus built tomorrow would be a near-impossibility: a number of things would need to be in place first. There would need to be a local hemp industry in place, local lime production, people making clay plasters and, perhaps more importantly, a workforce trained up and familiar with these new materials and techniques. An EDAP offers a way of setting out the practicalities of the transition.

Transition Tip

- You might commission local photographers or photography students to produce some photos of your community in 2030 to illustrate your EDAP.

Step Six: Transition Tales

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Alongside the process above, the Transition Tales group produces articles, stories, pictures and representations of the visioned community (such as those seen in 'A Vision of 2030' in Chapter 8), giving a tangible sense, through a variety of creative media, of what this powered-down world could be like. These will later be woven into the document.

Step Seven: Pull together the backcasts into an overall plan

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Next, the different groups' timelines are combined together to ensure their coherence. This might be done on a big wall with post-it notes to ensure that, for example, the Food group haven't planned to turn into a market garden the same car park that the Medicine group want to turn into a health centre. This process ought not to be too time-consuming; it is just to ensure that when combined, the different strands of the plan all tell a consistent story.

Step Eight: Create a first draft

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Merge the overall plan and the Transition Tales into one cohesive whole, with each area of the plan beginning with a short summary of the state of play in 2008, followed by the vision for 2030. This is then followed by a year-by-year programme for action, as identified in the backcasting process. Once complete, pass the document out for review and consultation.

If your mental picture of the final EDAP is community planning documents you have seen before, then think again. Your EDAP should feel more like a holiday brochure, presenting a localised, low-energy world in such an enticing way that anyone reading it will feel their life utterly bereft if they don't dedicate the rest of their lives towards its realisation.

Step Nine: Finalise the EDAP

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Integrate the feedback you receive into the EDAP. Realistically, this document won't ever be 'final' - it will be continually updated and augmented as conditions change and ideas emerge. Make a big splash when it comes out.

Step Ten: Celebrate!

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Always a good thing to do. In fact, you probably should have been doing this after every step above!

Transition Tip

- Just because your local planning framework documents might set out plans for the next twenty years is no guarantee, in the context of peak oil and climate change, that they will come to fruition. If there are assumptions made in it that you feel to be utterly unrealistic (a new airport or hugely increased road transport), don't feel duty bound to design your plan around every word in these documents.

Beyond the Twelve Steps . . .

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The Twelve Steps above set out a plan of action, and you may be forgiven for assuming that Step 12 is the end of the process. On the contrary, it is with the completion of Step 12 that your Transition Initiative really begins! The EDAP sets out the work you will be doing into the future, and in theory (no-one has got there yet) once you reach that stage, your Transition Initiative changes, and becomes, in effect, a relocalisation agency, whose job it is to implement the EDAP.

Chapter 12: The first year of Transition Town Totnes

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First, a bit of background

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Totnes is a town in Devon with a population of about 8,000 people. It has a reputation and a history of being quite an 'alternative' town (one wag wrote 'Twinned with Narnia' on one of the signs on the edge of the town), a reputation that began with the arrival of Leonard and Dorothy Elmhirst in 1926. She was a wealthy American heiress, and the two of them were searching for a place to develop an experiment in land-based regeneration combining arts, music and theatre. Their regeneration of the Dartington Estate adjacent to Totnes, the establishment of a college of the arts, a wide range of rural enterprises, and a reputation for Dartington as an international centre for the arts put the area on the map, and attracted lots of creative and alternative people to the area.

Totnes has been a hotbed of environmental activists for many years, being home to one of the most successful anti-GM groups in the country, as well as what was, for some years, one of the best LETS schemes in the country. It suffers, like many rural market towns in the South West, from high house prices, low wages and an ageing population (Totnes is the town in the UK with the highest per capita number of people over 60 living on their own). It has a vibrant market on Fridays and Saturdays, and a strong culture of local food. It is unusual in that it has largely managed to avoid the Clone Town Britain phenomenon, with an uncharacteristically high proportion of small, locally owned shops. I moved there from Ireland in September 2005. I could be telling you the stories of any of the other developing Transition Initiatives here - Lewes, Penwith, Bristol (indeed I will go on to tell those stories in less detail) - but Totnes is, in many ways, the flagship initiative, and also the one I am most familiar with.

Then, a bit of prehistory

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What follows is an attempt to write a history for a project which is very broad, diverse and dynamic, and is still ongoing and evolving. In the interests of conciseness, some things have been deliberately left out, and unavoidably, given how big it has become so fast, some things I don't even know about may have fallen through, but hopefully, this will give you an overview of this one town's story.

Transition Town Totnes (TTT) began in October 2005 with a screening of the film *The End of Suburbia*. Over the next few months, fellow peak oil educator Naresh Giangrande and I held a series of talks and film screenings and began to network with existing groups. At this stage the process wasn't called 'Transition Town Totnes'; indeed it didn't come under any collective name until the week before the Official Unleashing. We tried to make any events that we ran as much about building networks and relationships as about viewing films. You can see some of the tools and exercises we utilised on pages 154-5.

September 2006

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Early in the first week of September, posters began popping up all over Totnes advertising an

'Unleashing', no doubt leading to many people wondering what on earth such a thing might be. All was revealed on Wednesday 6th September at the Civic Hall in Totnes, when the 'Official Unleashing of Transition Town Totnes' took place. The evening was attended by over 350 people, who packed the hall to hear presentations by myself and Dr Chris Johnstone. It was opened by the then Mayor of Totnes, Pruw Boswell, who talked enthusiastically about the initiative and her hopes for its success. "If this can happen anywhere," she told the audience, "it will be in Totnes."

I spoke about peak oil, what it is and why it is such an urgent issue. I talked about the concept of energy descent and of relocalisation, and told the story of the Kinsale Energy Descent Action Plan. I set out my vision for how the Totnes process might unfold, and what TTT's plans were for its first four months.

Chris Johnstone talked about how insights from the addictions field can inform energy descent work. He argued that peak oil and climate change represent our call to power, our defining moment, and by engaging with them, we will find a great deal of inner resources and strengths we didn't know we had. At the end of his talk he divided the audience into pairs and got them talking to each other.

In pairs they focused for three minutes on each of the following questions: "When I hear about climate change and peak oil the concerns I have include . . .", "My vision for Totnes after peak oil is . . .", and "The steps I can take towards this vision are . . ." After this, people were invited to write down their thoughts on these questions, each on a different-coloured post-it note, which were then stuck up on the wall so people could read them.

People remarked afterwards that they really enjoyed the opportunity to discuss their thoughts, and to chew over what they had heard. People left the evening very enthusiastic about the process. It was designed from the outset to be an historic occasion, the night that people would look back on as the start of the whole process, and it very much had that feel. The Unleashing generated a lot of energy that has really propelled TTT forward since.

A few days later we showed, for the second time, the film *The Power of Community* which relates the experience that Cuba underwent when it experienced its own oil peak, albeit an externally imposed one, when the Soviet Union collapsed in 1990. Despite having sold out the previous venue the first time we showed the film, we once again filled it, with over 100 people and a very vigorous discussion after the film.

Around this time, the evening class, Skilling Up for Powerdown (see page 194) began for the first time. The group of 35 people from a range of backgrounds began the course which covered a wide range of subjects, and was designed to train up fieldworkers for the project.

October 2006

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October began with an evening event called 'Feeding Totnes, past, present and future' held at St John's Church, which featured, appropriately, three speakers. The first, Mary Bartlett, gave a fascinating account of her years as a horticulture student at Dartington in the 1960s, and the second, Helena Norberg-Hodge from the International Society for Ecology and Culture, gave an overview of the dangers of globalisation, and how communities are strengthening their

food economies around the world in response. The last speaker was Guy Watson from Riverford Farm, one of the UK's biggest organic farm businesses, who talked about how the farm (situated close to Totnes) runs, and the steps they are taking to make it less oil-dependent.

This was followed three days later by the first TTT Open Space, on food. This was attended by well over 100 people, although people came and went during the day (the practicalities of Open Space are explored on pages 168-9). This was the first time we tried to document an Open Space in real time on the Wiki website. It went very well, and proved to be a very potent tool. The day generated a great deal of networking and subsequent projects, such as the Seed Swap day, emerged from discussions on the day.

On the 12th, Paul Mobbs, author of *Energy Beyond Oil*, gave a well-attended talk which set out a rich overview of the energy challenge facing the UK, which was again followed by an Open Space Day on energy. Although a few less people came than had attended the Food day, it was still a vibrant and productive Open Space. On the 26th we had a talk, arranged at the last minute, by organic gardening expert Bob Flowerdew. Bob drew a large crowd - quite a different demographic than previous talks - and passed on many insights from his knowledge about gardening.

On October 17th, the Heart and Soul group had their launch. The Heart and Soul group set out to explore the psychology of change, and identified the questions it aims to address as follows:

"What is it actually like to be human, alive and awake at this time in the history of the planet, the history of humanity? What is it really like to live within, and inevitably be part of, our current global economic system? What of our dreams and visions, fears and angers, grief, passion and inspiration? What motivates us to creatively transform how we live, and equally, what tends to 'shut us down' and reach for comfort instead? How are we shaped by the society in which we live, and how does what lies within us, in turn, create the society we make together? Perhaps most importantly, what structures or processes do we need to create to support us in both the practical work ahead, and in the 'change of heart' on which that work rests?"

Their launch evening was very well attended, with singing, reflection and discussion, and they have gone on to be one of the best attended of the groups. As their programme of events emerged, other more experiential things were added, exploring a variety of different tools.

Another group that kicked off around this time was the Energy group, which had its first meeting in the shed at the end of a garden, where, Tardis-like, an extraordinary number of people managed to fit in a very small space and explore the energy aspects of TTT. The other group that emerged in October was the Health and Medicine group, whose first meeting was a small but dynamic affair, exploring what such a group might go on to do.

November 2006

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November's first event was an evening about building, entitled 'Building Locally; the potential of natural building materials'. Three speakers discussed different aspects of building and

construction: Gareth Walton introduced the Devon Sustainable Building Initiative, Jim Carfrae discussed the process of building the straw-bale house he created in Totnes, and I spoke about the range of natural building materials and techniques. This was followed three days later by our last Open Space of 2006, entitled 'Housing Totnes in an Energy Scarce Future' which was, again, well attended, and generated a wealth of ideas.

On November 8th, Simon Snowden of Liverpool University, who has been developing the tool of Oil Vulnerability Auditing (OVA) made his first visit to Totnes. Simon ran a one-day workshop for ten local businesses at the South Hams District Council offices, outlining the OVA process and the insights it could offer to businesses in terms of understanding their degree of vulnerability, and therefore, risk.

On November 9th, the TTT Arts Group had its launch. A group of local artists came together and discussed how their art practices could inform, document and inspire the TTT process. Although trying to get a lot of artists to do things together has been likened to 'herding cats', there was an energy generated to drive forward this aspect of the project.

Around this time, Schumacher College hosted a remarkable course called 'Life After Oil', a two-week intensive immersion in peak oil. One of the teachers was David Fleming, economist and originator of Tradeable Energy Quotas, who on November 7th gave an evening talk for TTT called 'A Practical Guide to Energy Descent'. To a packed hall, he wove a charming tapestry of subjects, from peak oil to choral music and from carbon rationing to Wordsworth. The Transition, he argued, is as much about reclaiming and rebuilding culture as it is about solar panels. He ran wildly over time, and everyone loved it. The previous evening he and I had sat, together with Stephan Harding, on a panel to discuss the film *An Inconvenient Truth* at the Barn Cinema, Dartington. Someone asked the panel, "What gives you hope?" David replied, after some deliberation, "Bach".

Later that week I visited the offices of a local film production company. During our discussions about localisation and so on, they produced, from the wall in their office, a framed 1810 bank note (the building used to be a bank). It got my mind ticking about local money and bank notes. Also around this time, a group began to meet to discuss the creation of a local food directory. Inspired by one produced in the Forest of Dean, they began to explore how such a Directory might be created for the town.

Another group that began to emerge in November was the Local Government Liaison Group, made up of local councillors and others who wanted to connect TTT with local government. In the TTT email Bulletin, they wrote:

"The proposed TTT Local Government Liaison sub-group would aim to promote the development of local government policies that would encourage and avoid hindering the action necessary to reduce the fossil fuel dependency of Totnes and its environs in line with the proposals arising from other sub-groups and the TTT process."

They rapidly became a key aspect of the work of TTT. The final event of November, on the 22nd, was a talk by Richard Heinberg at the Civic Hall, attended by almost 400 people. People travelled from as far away as Leeds to hear Richard's talk, which was very well received. It was, alongside the Unleashing, our largest event of 2006.

December 2006

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A lot was starting to happen around this time with the Totnes Renewable Energy Society (TRESOC). This is a sister project to TTT, which emerged from the Energy Open Space Day and aims to allow local people to invest in renewable energy infrastructure. Also emerging at this time was the Economics and Livelihoods Group.

December 15th was the first time the Project Support Group met. A previous attempt at forming a Steering Group had not really worked, but using this model it was possible to create a group to co-ordinate and guide the process whereby each of the working groups contributed one person, making it more dynamic and vital. This settled in very well and has been a very effective decision-making tool.

January 2007

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The first event that we ran in January was a training day with Andy Langford and Liora Adler of Gaia University, on the theme of Designing Productive Meetings. It had become clear as people came forward to facilitate the various TTT groups that, although they all have a great deal of enthusiasm and passion for the work, they may not necessarily have the skills in terms of facilitating meetings, conflict resolution and so on. This workshop brought together these various group facilitators for a very useful day exploring these skills.

On the 17th, we hosted a talk by Peter Russell called 'Waking Up in Time'. It was the biggest crowd we had yet drawn to St John's Church, nearly 300 people. Peter talked about the importance of consciousness in the Transition, something we hadn't touched on yet.

Sunday 28th was 'Seedy Sunday', the TTT seed exchange, with hundreds of people bringing out seeds - the weird, the wonderful and the heirloom - to swap with other people. The day also included talks and demonstrations, and was a very energetic event. TTT also, at this time, got its first mention in the national press. The Guardian's Eco-Sounding section ran a brief piece as follows:

"The idea of Totnes, Devon, running out of oil conjures images of matrons hitch-hiking to Exeter and retired chaps cooking on open fires, but the town is deadly serious about producing local food as and when the black stuff runs out. It has now declared itself Britain's first 'transition' town, and permaculture guru Rob Hopkins is drawing up a 25-year plan to see how Totnes could support itself without oil. There have been meetings about how food and energy could be produced locally, but the plan is to set up a local energy company, rewrite the local development plan and persuade others to join the movement. It must be working. Stroud in Gloucestershire and Lewes, East Sussex, have just joined."

February 2007

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The Transition process in Totnes continued to deepen, with the Project Support group meetings going well, continuing to explore structure and so on. During February, Schumacher

College ran a three-week course on climate change, with some excellent speakers. We borrowed some of them for some public events that we co-presented with South Hams Friends of the Earth, Schumacher College and TRESOC.

The first of these was Aubrey Meyer, the creator of 'Contraction and Convergence', and the second was by Tony Juniper, the director of Friends of the Earth. Both were very well attended. While Tony was at Schumacher College, he also participated in an event that had been organised by the Local Government Liaison group, a World Caf   day for local councillors. World Caf   is similar to Open Space, but it can be more guided, less chaotic, and self-organising (you can read how to run a World Caf   event on pages 184-6). The event was attended by 23 councillors, from parish, town and district levels, as well as by the local MP, Anthony Steen. The event began by explaining peak oil and climate change, and then suggesting that, at present, local government decision-making is based on the assumptions that oil prices will remain low for the foreseeable future, that climate change won't impact for some time, and that the move away from people doing things for themselves will continue indefinitely.

We asked what their forward planning might look like if those weren't the assumptions. A wealth of thoughts were generated, on subjects as diverse as tourism, planning, transport and the economy. It was done using Chatham House Rules, meaning that what is said in the meeting can be cited outside, but is not attributable to any individual.

A few days later, the first Totnes Pound (of which more later) went to the printers, designed with one side being a facsimile of the 1810 Totnes banknote I had seen hanging in the old bank three months previously.

Two other notable events in February were the Heart and Soul Open Space Day, exploring all the different elements of this aspect of TTT, which was very well attended and did a great deal to shape and inform the work of that group, and also the first meeting of the Transition Tales group. You can read more about the work of this aspect of TTT on pages 200-1.

March 2007

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Early March was a Totnes Pound frenzy, trying to get the notes printed and ready for their launch on March 7th. In the short amount of time available, eighteen shops were signed up for the scheme, and the notes were designed and printed. The first note was given to Totnes Museum, and the next ones to the members of Totnes Town Council.

The Council had invited me to speak to them about TTT, to bring them up to speed with progress. At the end of my talk I told them that although I didn't make a habit of giving money in brown envelopes to Councillors, for them I would make an exception (the notes had come from the printers wrapped in brown paper), and proceeded to give them each one of the first Totnes Pounds. Following the meeting, the Council voted unanimously to endorse the work of TTT, which was a great boost to the project.

The notes themselves were launched at an event called 'Local Money, Local Skills, Local Power' held on March 7th, which also included a talk by Molly Scott Cato of gaianeconomics.org, an economist and member of the nascent Transition Stroud project. The

Pound got some great publicity, our local MP Anthony Steen being photographed brandishing fistfuls of notes. This was then followed by an Open Space Day on economics, which generated lots of ideas about the role of the Pound, alongside other tools such as LETS, Time Banks and Credit Unions.

Also in March we organised a tree-planting on Vire Island in the centre of Totnes, to plant five almond trees and two walnuts. The then-Mayor, Pruw Boswell came down and planted one of them, and we got some great photos in the paper to launch our 'Totnes, the Nut Tree Capital of Britain' initiative.

The next talk in our series of events was by Jerry Mander, one of the co-founders of the International Forum on Globalisation. His talk was called 'At the end of the era of globalisation: turning again to the local'. He gave a very thorough overview of globalisation and why its life-span is limited, and the potential of a more localised future.

April 2007

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On April 5th, TTT presented, at the Barn Cinema in Dartington, the South-West premiere of the film *A Crude Awakening*. The evening was a sell-out, and the film, an excellent motion picture which does for peak oil what *An Inconvenient Truth* does for climate change, was very well received. It was followed by a discussion with a panel of local people with an interest in the subject.

On April 12th, one of the most dynamic groups to emerge from the TTT Arts group, the Sustainable Makers Project, had its first meeting. It brought together a collection of craftspeople from a range of disciplines, to look at how best to support the concept of useful crafts made locally.

On the 19th, I had a very odd call from a reporter in Mexico, who had somehow heard about TTT and wanted to write a piece about it. However, her main question, to which she kept returning, was: "So, to what extent is Transition Towns like John Lennon's 'Imagine'?" I mean, how would you answer that? It led to a bemusing piece in the Mexican paper, and a rather amusing piece in the *Totnes Times* (see below).

On April 22nd, TTT ran its first Transition Tales event. The idea was to bring together storytellers and writers, as well as anyone with creative urges, to begin to tell stories around different points in the town's transition. In order to do this, a few days in advance of the event a few of us created a 'timeline', a chronology of the next 25 years, with key events such as oil peak in 2010, carbon rationing being introduced in 2012 and the first car park being returned to being a market garden in 2015, among other things. People were then invited to write newspaper articles from any point along the timeline. The event generated some hilarious and also some rather touching stories. We giggled a lot together whilst, I suspect, also exploring some quite intense ideas and possibilities.

A couple of days later, as part of the Transition Tales Initiative, we hosted an afternoon event at Schumacher College for teachers, to ask for their thoughts on the Transition Tales project so far, and to explore with them how it might fit in with their work in schools. Both primary and secondary schools were represented, and the discussions were very valuable in shaping the

subsequent work.

Around the end of April, TTT presented Totnes Library with over Â£1,500 worth of books, which had been individually sponsored by local shops and individuals, as well as some DVDs, which can be rented for free from the local DVD shop. The end of April also saw, after some delay, the beginning of the TTT Building and Housing group. Their first meeting, which was very well attended, was basically a 'getting to know each other' meeting, and also got the group starting to think about what it might like to do.

May 2007

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On May 1st, TTT ran a 'Business Swap Shop' on Totnes Industrial Estate, which was the first such workshop, getting groups of businesses together to look at what they need and what they throw out, based on the principle that one person's waste is another's raw material. A diversity of businesses came together, and found that there were indeed a lot of connections that could be made. That week, thanks to the kindness of a local resident who offered to fund some aspects of TTT, we were able to advertise our first paid post.

Keith Ellis from Moving Sounds and Transition Town Lewes came to Totnes to run a one-day course on making short films using a digital camera and a laptop and posting them on YouTube. One of our only disappointments with the TTT process up to this point was that no-one had been documenting it on film. Several production companies had wanted to, but had, for one reason or another, been unable to attract funding, or wanted to take an angle on it that we were unhappy with, so all we had were photos and notes. The beauty with Keith's approach is that it makes it very possible to create short films to document different aspects of TTT's work. The course produced four short films and was great fun. You can see some of what they produced by going to YouTube and searching for Transition Town Totnes.

On May 8th, international permaculture teacher Penny Livingston-Stark came to Totnes, as part of a course at Schumacher College, and we put her on to speak as part of our programme, an evening called 'Permaculture: designing for transition'. Her ideas about the power of permaculture as a design tool for post-carbon societies were very insightful.

On the 15th, an evening meeting was held in Totnes called 'Funny Money: where next for the Totnes Pound?', which explored the possibilities of a second phase. It drew a lot of people together to explore the possibilities of an enlarged scheme, and also brought out a number of new volunteers for the project. The first scheme still had a couple of weeks to run, but they wanted to look beyond it to what might follow it.

The next big evening talk was on the 23rd, and explored 'New Strategies for Zero Energy Housing'. The speakers were Bob Tomlinson of the Living Villages Trust and Bill Dunster, the designer of BedZed in London. The evening was very well attended and generated a lot of discussion around what might be appropriate strategies for Totnes.

On the 26th we held the 'Totnes, Nut Tree Capital of Britain, Design Day'. Sixteen people came together to explore where in Totnes might be most appropriate for nut-plantings. A couple of speakers opened the day: Martin Crawford from the Agroforestry Research Trust was one of them, and he explained that walnuts were not a good choice for urban tree

plantings, unless you wanted a major ongoing squirrel cull! He suggested sweet chestnut and heartnuts as better choices. The group split into two, and armed with maps, 'surveyed' the centre of Totnes looking for good spots. May 31st was the last day of the first Totnes Pound scheme. The shops were interviewed, the last notes gathered in, and an avalanche of media coverage was dealt with. BBC Devon news ran a great piece on it, and the coverage reached the pages of the *Daily Mirror*, and even the *Buenos Aires Herald* (maintaining our levels of South American coverage!) You can read more about the Pound below.

June 2007

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The next event on the programme was a talk by Andrew Simms and Nic Marks of the New Economics Foundation, called 'The New Economics, from growth to wellbeing'. Andrew's talk focused on the challenge of climate change, and Nic looked at the concept of Happiness Indicators, new ways of looking at progress, and how despite increasing national wealth, our sense of how happy we are has fallen steadily since the 1970s.

On the 11th, two of our biggest events thus far took place in the Great Hall at Dartington. The first ran during the day and was called 'Estates in Transition'. The idea was that for a town like Totnes to explore the practicalities of Transition is fairly futile without the re-engagement of the land surrounding the town. Historically there would have been a lot more links than there are now. Estate managers, trustees and CEOs were invited from across the South-west, and the day featured a mixture of presentations by people such as David Furzedon, head of the Country Landowners Association, Chris Skrebowski, editor of *Petroleum Review*, solar expert Jeremy Leggett, Patrick Holden of the Soil Association and myself, and Open Space-style group discussions.

The day was a very powerful exploration of the issues, and introduced the work of TTT and the concepts underpinning it to a wide range of people. That evening, also in the Great Hall, was an evening called 'Food and Farming in Transition', which made some of the key speakers from the day available to the public. The speakers were Chris Skrebowski, Jeremy Leggett, Patrick Holden and Vandana Shiva. The evening sold out the Great Hall, with nearly 300 people, and more turned away. It was an energising exploration of the impacts peak oil and climate change could have on agriculture, and a look at what agriculture may go on to look like. During this time, plans were also afoot for the second release of Totnes Pounds. Drawing from the observations from the first one, the second one would be more available, smaller and more plentiful. The design work was completed, and they went to press at the local printer, incorporating a number of clever security features on each note. They were launched on the 20th (in fact they were launched three times).

The first launch of the Totnes Pound was at the relaunch of the Totnes Chamber of Commerce (one of the sponsors of the notes), in which TTT featured heavily. Then, later that evening, the Pound was also launched at a talk at Schumacher College by economist Wolfgang Sachs. Particularly at the Schumacher talk, there was a huge amount of enthusiasm for the project, and when I went home afterwards my head was buzzing with the potential of the whole thing, to the point where I actually found it hard to get to sleep.

Two days later, the Pound had its final launch alongside the launch of the Totnes Local Food

Directory, which had emerged from the hard work of the food directory group, published under the heading 'A Celebration of Local Food'. It combined the Directory itself, articles, recipes and work by local artists. The launch was possibly the wettest day of the year up to that point (June 2007 was the wettest on record), in a rain-swept Civic Square. The Town Crier opened the proceedings, and then the new Mayor of Totnes spoke about the need for more local food and officially launched the Directory and the Pound. There were also talks about the Pound and the Directory, followed by a specially composed song about local food by a local choir group. The group then spent the rest of the day giving out food directories on the High Street.

That week also featured the launch by the Heart and Soul group of the Home Groups, an initiative which could potentially play a big role in the future evolution of TTT. The Home Groups concept is explored in more detail below, but the evening was very positively received, with two new groups forming, and one that was already up and running sharing its experience of how helpful they had found the process. July finished with a team from Radio Scotland coming down to interview many of the key people in TTT for a long piece they wanted to do on the Transition idea.

The last important development to take place in late June was the Oil Vulnerability Auditing training run by Simon Snowden in Totnes. As already mentioned, we had been planning this training for some time, and sixteen people undertook Simon's two-day training. The training went very well, and some of those who undertook it will go on to do three pilot audits in July. TTT is the first group to run training in this approach.

July 2007

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July opened with our local MP, Anthony Steen, writing his monthly column in the local press about TTT, peak oil and relocalisation. In it, he mused:

"When cheap oil is no longer, what will happen to our lifestyle? With climate change leading the global action agenda, we must now consider 'Life after Oil'. Could less oil result in a renaissance of British agriculture, and expansion of small businesses? Could peak oil help change attitudes and rebuild 'social capital' by bringing people and disparate groups together, united in tackling a common world problem?"

Speakers for TTT during July included Alastair McIntosh, author of *Soul and Soil*, who discussed land reform in the context of Celtic spirituality, and Marianne Williamson, who added a spiritual dimension. As part of TTT's post-John Croft decision to weave more celebration into its daily fabric, we held the TTT Summer Picnic by the River Dart on a very pleasant summer evening (the same evening in fact that most of the Midlands were disappearing under water in the heaviest rain on record). Food, conversation and rounders went on late into the night.

On July 19th, at Bowden House near Totnes, the TTT International Youth Music Festival, which brought together students (mostly from Spain) who were studying at the Totnes School of English and local kids for an evening of music, circus skills and other entertainment. The theme of the evening was TTT, and they had painted a glorious day-glo banner of the TTT logo. The evening was solar-powered, and was as much a cultural exchange as a party.

The last day of July was very special. After weeks of legal t-crossing and i-dotting, TTT finally had its own office for the first time. The July 31st meeting was the first we had there; it felt good to have put down roots in the centre of the town.

August 2007

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August is the month where we try to take a break, and in the main, apart from organising the next programme of events, we managed to achieve this. One of the few things that happened was the broadcast on BBC Radio Scotland of the item recorded a month or so previously in Totnes. The resultant piece was one of the best pieces of media anyone had yet put together about TTT. It was followed by a phone-in, where pretty much everyone who rang in said they thought it was a wonderful idea, or that they were already underway in their communities starting a Transition Initiative.

September 2007

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It was heartening to discover early in September that, according to the Style Magazine in the *Sunday Times*, "community spirit is back in fashion". An article called 'Love Thy Neighbour' talked to Duncan Law of Transition Brixton and celebrated the fact that actually talking to your neighbours is the new Gucci. On Thursday 6th September, a year to the day after its Official Unleashing, Transition Town Totnes celebrated its first birthday at the Royal Seven Stars Hotel in Totnes. The sell-out event was an opportunity to reflect upon the achievements of the previous year and to look ahead to where TTT might go next. It was a great example of John Croft's exhortation that Transition Initiatives should celebrate as often as possible.

The evening was a delightful celebration of the year, with good food, music, dancing and laughter. It was a fitting close to a quite extraordinary year, and a fitting beginning to the next one.

The first talk of the new programme was an evening called 'Redesigning our towns and cities for life beyond the car', which featured talks by Herbert Girardet and Peter Lipman. A dazzling array of ideas was put forward for how a town like Totnes could break its love affair with the car. This was followed by an Open Space day on transport, which came up with some good ideas.

As September draws to a close, the first steps are being taken towards the creation of an Energy Descent Action Plan for the town and TTT is a key player in a coalition being formed to develop the site of Dairy Crest, previously the town's foremost employer, which has now closed with the loss of 160 jobs. The Totnes Pound continues to be widely used, we are in discussions with a local developer about 'transitioning' a major housing development in the town, TTT made a major submission to the Local Development Framework when it came up for review, and the Totnes Renewable Energy Society launched in early November. Transition Tales will be working with a larger group of kids at KEVICC School and is expanding into other areas, such as working with the local art college getting them coming up with some Transition Tales. The programme for 2008 is focusing much more on practical projects, and

we are also running a five-minute film competition on the theme of 'Totnes in 2030'.

Chapter 13: The viral speed of the Transition concept

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Running alongside the unfolding of the Transition process in Totnes and Kinsale was a rapid take-up of the idea. Within weeks of the Unleashing other places were getting in touch to ask what we were doing, and soon this had become a viral phenomenon. Some of the key events along the way included:

- 'One Planet Agriculture', the January 2007 Soil Association conference in Cardiff which was focused on peak oil and relocalisation, and proved to be their most popular ever
- a talk in Lampeter in west Wales, organised by the West Wales Soil Association, which raised the idea of Transition Town Lampeter and was attended by over 400 people. It has since gone on to be the catalyst for a lot of the towns surrounding Lampeter to start their own Transition processes, with Lampeter as the hub
- lots of media coverage, including ITN News, *The Guardian*, a whole programme on BBC Wales and also an excellent piece on BBC Radio Scotland.
- the Official Unleashing of Transition Town Lewes, which took place in the Town Hall, was attended by about 450 people and which as well as Unleashing the Lewes process, triggered other similar projects in surrounding communities
- a meeting with Prince Charles at his Food and Farming Summer School at Highgrove and giving him a Totnes Pound.

Since Transition Town Totnes Unleashed, the Transition model has been taken up by communities all over the UK and increasingly beyond. The demand became such that we set up an organisation called The Transition Network to most effectively support them (see Appendix 5). The Transition model is a simple one, and each community that gets involved is contributing valuable research as to what works and what doesn't, and how the model needs to be adapted for different scales, settings and cultures.

What follows is a snapshot of seven Transition Initiatives on a range of scales, in the order in which they emerged, to give you a feel for how this idea is being interpreted in different places. It is important to remember that at the time of writing, the most advanced of these has only been going for just over eighteen months.

Transition Penwith

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Penwith is not a town or a city but a peninsula, the westernmost district on the UK mainland. It has a population of 63,000, but given the land area of Penwith, this means that overall the

density is only 2.07 people per hectare. Most of those live in urban centres, but there are many small scattered rural communities too.

Transition Penwith (TP) came about when Jennifer Gray attended a small informal think-tank meeting with myself and a few others to look at various aspects of the Transition process. This was prior to the Unleashing of TTT, and Jennifer felt that what seemed to be emerging in Totnes could also work in Penwith. It then transpired that Richard Heinberg would be in the country soon, and the idea was born that Transition Penwith would start with what Jennifer called a 'Big Bang', rather than with the awareness-raising stage. In the run up to Heinberg's talk a lot of time and energy went into publicity and into inviting many people from all aspects of the community and a range of organisations. In the end over 400 people turned up, including the area's MP and the Town Mayors from Penzance, St Just, Hayle and St Ives.

The event created a huge wave of interest. Jennifer talks of the buzz it created, about how walking down the street for a couple of weeks afterwards everyone was talking about the evening, about Transition Penwith and about the implications of the talk. TP's first programme was modelled quite closely on the TTT programme, and also adopted the same design template. It included talks by David Fleming and myself among others, and also film screenings such as *The End of Suburbia* and *The Power of Community*, all facilitated in the way set out on page 154. Working groups began to emerge spontaneously, and a large number of partnerships were formed with a wide range of groups. These partnerships were important in not duplicating work already being done elsewhere and also in being part of the strategic framework in the area. Transition Penwith have since organised many events with these partnership organisations.

Some of the practical projects that have emerged from the TP working groups include:

- A study looking at energy usage and requirements for the area as a whole
- Transition Energy Tours - tours of local renewable energy installations
- 'Chutney Rules' - home-based reskilling workshops, doing things like building a worm bin, installing a solar panel, making a raised vegetable bed, and so on
- workshops on a range of skills such as compost toilet building
- a 20-week course in renewable energy skills
- a Transition Roadshow created by the Education Group to take around village halls and schools in the more outlying areas of Penwith

Transition Penwith has acted as a catalyst, along with Transition Falmouth, for the many emerging Transition Initiatives in Cornwall. They are endorsed by the local District Council, who have come on board as partners and who provide resources such as meeting spaces and audio-visual equipment.

<http://www.transitionpenwith.com>

Transition Falmouth

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At the Permaculture Convergence in Dorset in 2006, Lorely Lloyd heard a presentation I gave about peak oil and the Transition concept, and had her 'peak oil moment'. She went home to Falmouth, where she was a Town Councillor, and thought about it all for three weeks until at a conservation event in the town she began headhunting people to form a steering group for what would become Transition Falmouth.

In October I went to Falmouth and gave a talk to the fledgling group in the Town Council chambers. Those attending ranged from a 13-year-old boy to the Town Clerk and the Town Centre Manager, and the talk gave them an overview of the what, why and how of the Transition approach. After the talk there were meetings every two weeks, talks, films or discussions. There was also a Powerdown Christmas party, and a number of working groups began to form.

One of the key areas of Transition Falmouth's (TF) work has been in building partnerships. They have made strategic partnerships with Friends of the Earth, the Town Centre Forum, the Town Council, Falmouth Green Centre and many other groups. One of the key achievements from their partnership-forging has been the development of an integrated transport package for the town centre, including the pedestrianisation of the High Street. The Transition approach of embedding peak oil and climate change and looking for common ground managed to draw together previously disparate groups to produce important local action.

Some of the practical projects that have emerged from TF include:

- 'Darnit' - an arts and crafts group which brings people together to learn/share knitting, sewing and other craft skills
- The beginnings of a move to make Falmouth plastic-bag free
- A food group, whose first event was Seedy Saturday - a seed-exchange day
- Supporting Falmouth School to become an 'Eco-School'

With their local Arts Centre showing the film *ACrude Awakening* and Falmouth University College starting to do more talks on issues relating to Transition, TF is moving away from organising programmes of events and is able to focus more on practical projects. There are also plans, in partnership with the Town Council, the Allotment Association and Falmouth Green Centre to create a Sustainability Centre, which would host education, reskilling and community development activities. They are also applying for funding for edible pathways throughout the area. Reflecting on the first year of Transition Falmouth, Lorely says:

"As a tourism and dock-based town with a high elderly and student population we are finding it quite a challenge to engage the majority of people, but Transition is an excellent peg for all kinds of groups and individuals to hang their hopes for the future. We are steadily forming a diverse and committed team who are establishing projects and partnerships to suit all who wish to join us in working towards our resilient community. Working with other local Transition Initiatives is proving excellent."

Transition Town Lewes

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Lewes in Sussex was one of the first Transition Initiatives to get underway. They have modelled their approach very much on that of Totnes, and have also inspired other emerging Initiatives in the area. Transition Town Lewes (TTL) began when Adrienne Campbell heard from a friend about the Totnes Unleashing. Inspired, she and others set up a steering group and TTL was born.

The first programme of events they did was called 'Energy Transition Comes to Lewes', and it included talks by Jeremy Leggett and Caroline Lucas, as well as facilitated screenings of *The End of Suburbia* and *The Power of Community*. This led on to the Official Unleashing (making Lewes the third Initiative to do so) on April 24th 2007. Over 400 people came, the Town Council finished their regular meeting early so they could attend, and the venue was also filled with stalls of other local groups.

After an introduction from the Mayor, I spoke, followed by Dr Chris Johnstone. The event was very energising, with lots of enthusiasm about the future. Following the Unleashing, Transition Town Lewes has been very busy. They have run Open Space days (see pp.168-9) on food, housing, energy and their Energy Descent Action Plan, as well as a full programme of talks, film screenings and events, including Slow Food feasts and a very busy Great Reskilling programme.

Not content with the above, TTL has also catalysed a number of interesting projects. These include:

- Work in local schools
- 'Heat your greens', a local solar panel "buyers' club
- 'Grow your own vegetables', a series of practical workshops
- The Lewes Community Bag - a cloth shopping bag, printed with 'Love Lewes, Shop Local' on one side, and the logos of twenty local shops on the other, produced as a limited edition of 1,000.

There are a number of other schemes in the pipeline too. These include the Lewes Pound, a car club, something called the 'Book Crossing of TT Books', which is about leaving books in public places to read and then pass on, the mapping of existing orchards and creation of a forest garden, and the creation of OVESCO (a community owned energy company for the Ouse Valley Bioregion).

Although it wasn't the very first Transition Initiative, TTL has a few 'firsts' under its belt. One is that it is the first to really implement Step 1 of the Twelve Steps of Transition, 'Form a Steering Group and design its demise from the outset' (p.148). Having formed a dedicated group of people who had navigated the project through the first few steps, it was decided to wrap up the group and hand the project over to representatives of each of the Working Groups. This was by all accounts not an easy process: for those who had been there from the start it

required a great deal of letting go and trust that it would work.

However, on reflection, it is seen to have been a useful process. Adrienne describes it thus:

"A dozen people willing to form working groups had emerged from the Unleashing and the core group started to discuss our demise. Fortunately, some professional 'facilitators of change' turned up who invited the group contacts to create a new set of aims and principles. If applied with responsibility and openness, these empower the working groups to work autonomously. Our demise was a painful process for me, a kind of paradigm shift, that required a good deal of trust. Some of the original core group has left TTL, and some of the groups are struggling, but I feel the overhaul was necessary to allow Transition Town Lewes to really fly.

There's always been a creative tension between people who are more motivated by either peak oil or climate change issues. There's also a dynamic between the campaigning types - for change now - and the Energy Descent planning/permaculture approach. We're having an ongoing discussion about how divergent our attitudes can be, and whether even an assumption of 'life with less oil' is a given. And if not, what is the transition we are making? The background global context of continuous growth and erosion, plus the lack of a language to describe the inevitable paradigm shift, makes this whole community-building enquiry rich, scary, inspiring and surreal all at the same time."

<http://www.transitiontowns.org/Lewes>

Transition Ottery St Mary

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This initiative began with Sara Drew attending a talk by Peter Russell in January 2007, presented as part of the Transition Town Totnes programme. "I felt the energy at the event, and thought 'wow!'. Here at last was a vehicle that was positive rather than negative, and wasn't about falling into a pit of despair!" She went home and wrote a letter to the local paper, which ran as follows:

"I live in Ottery St Mary and have spent a lot of time reflecting on the state of the planet, and the coming crisis of resources - especially oil. For instance, we consume six barrels of oil for every one we produce! Put that with carbon emissions, melting ice caps and runaway climate change and it is easy to feel we are on the edge of an abyss which is going to claim us all. The system is completely unsustainable.

However, I recently attended a talk in Totnes where the community is coming together to develop practical ways of doing something about all of this in their own backyard. Their project is called Transition Town Totnes and is all about developing highly local ways of reducing energy consumption, building a better community and taking charge of their own lives to cope successfully in a world after oil - a Post Carbon Community. Their ideas include food-growing groups, transport sharing and energy efficiency. There are groups like this getting together all over the planet. I am sure we can build a Post-Carbon Ottery which will improve the quality of all our lives and help us get through the coming years - together. If you are interested in getting together to make it happen please contact me (details provided)."

A number of people responded, and the core group of Transition Ottery formed. It has twelve members, and is working on the principle of not rushing, but taking the time to really put down deep roots and establish connections in the community. They have run a series of events, attracting over 100 people to a screening of *An Inconvenient Truth*, running a Family Green Day (a fÃ¢te with local food, solar energy, and a computer where one could measure one's carbon footprint, among other things).

They are designing a lot of their programme for families with young children, and are working with the local Later Life Forum, to draw in older members of the community. Screenings of *The End of Suburbia* and *The Power of Community* are planned, and they plan to Unleash in summer 2008. They see their evolution as slow but steady, and they have built strong networks with existing groups, such as local composting groups and local food growers.

<http://www.transitiontowns.org/Ottery-St-Mary>

Transition Bristol

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The genesis of Transition Bristol (TB) came out of a permaculture design course that was run in Bristol in 2006. In discussions that emerged from the course, people explored what projects they might like to get involved in, and the idea was raised of doing an Energy Descent Action Plan for the whole city. Although the idea seemed pretty daunting, it took root. Some time later, there was a Permaculture Day School which brought a large group of people together for a day of workshops and practical skills training, after which a group formed (originally under the title 'Transition City Bristol').

No one really had an idea how the concept might work on such a scale, but all of those involved felt it important that they try. The first steps were forming the Steering Group and beginning the awareness-raising stage. The first high profile talk was by Dr Chris Johnstone, which made it on to the local BBC evening news.

In May 2007 I gave a talk at the Trinity Centre in Bristol, at the end of which people from the various parts of the city organised into their respective 'villages' and discussed how they would like to evolve this process at the local level. Bristol, like all cities, is formed from a collection of 'villages', each area having a distinct identity and this feels like the ideal scale for much of this work.

Transition Bristol, as a result, now works on two levels. One is to go through the Transition process in order to work towards an Energy Descent Action Plan for the city as a whole, and the second is to network, inspire, train and support the 'village-scale' initiatives in the city. To support the villages, TB organises monthly meetings to enable them to share what works and what doesn't work. Alongside this, TB runs a programme of events and talks, a website and are promoting a 'virtual orchard' initiative, where fruit trees will be made available at cost across the city.

Working on the scale of 400,000 people is clearly different from working on the village and market town scale. According to Peter Lipman, one of the founders, the Twelve Steps of Transition were very useful in designing their strategy:

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"They helped us to slow down and deal with the pressure to do everything now on both of the levels we're working at. That pressure is inevitable, given the scale of the challenges and the feeling of incredible urgency - but if we don't resist it, we feel it could lead to us failing to open out the process to as wide an audience as possible as well as burning us all out. They have also helped us when working with the local Transition districts, reminding us to encourage them to think about the importance of not dashing ahead too fast, and about how crucial it is to broaden your base of support and not assume that awareness is already in place."

Another of the things that has also been very useful has been the Criteria for becoming a Transition Initiative (see Appendix 5, p.221), which Transition Bristol has been using with the 'Village' initiatives, stressing that there are criteria that need to be in place which will make their success more likely. TB are planning their Unleashing for Spring 2008, and are increasingly in dialogue with some of the other emerging city-scale projects such as Nottingham, in order to share best practice.

In November 2007 Transition Bristol held 'The BIG Event', the largest Transition event yet to be held anywhere. The main speakers were Richard Heinberg, Jeremy Leggett, David Strahan, Dr Chris Johnstone and myself, but there was also a full programme of workshops and talks on a range of other subjects. Nearly 400 people attended and the day was a dynamic, positive and inspirational introduction to the whole concept of Transition, as well as giving people a number of tools for beginning or supporting their local Transition Initiatives.

<http://www.transitionbristol.org>

Transition Town Brixton

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Possibly the biggest task taken on by a Transition Initiative is Transition Town Brixton in London. Transition Town Brixton started life as the Lambeth Climate Action Group, which was formed after screenings of *An Inconvenient Truth* at the Ritzy Cinema in 2006. Early in 2007 member Duncan Law came across the Transition model, and was seized by the idea of campaigning for something rather than against. He was also struck by the degree to which adding peak oil to the climate change debate strengthened and deepened both arguments.

Duncan suggested that the group reinvent itself as a Transition Initiative, which was unanimously approved. The group then began their awareness-raising stage, and thus far has held five film screenings and has hosted nearly twenty different speakers. It has also organised 'green' walks, visits to interesting projects and panel discussions. This has considerably raised the profile of the initiative, and generated national media coverage. The group has also formed strong links with the local Council.

Working groups are starting to form, but the group is still putting in place the infrastructure to enable this to happen most effectively. When asked how useful the Twelve Steps have been, Duncan told me: "They have been extremely useful, but unfortunately they arrived slightly too late! We had already formed our steering group for the Lambeth Climate Action Group, which hadn't formed with the intention of becoming a TT or with its own demise being an option. We are still working on how we might apply the first Step, and certainly aren't working on them all at present. In many ways we are still in the Laying the Foundations and Awareness-raising

stages." They had planned to have an Unleashing at the end of the summer of 2007, but felt that they still hadn't reached the critical mass required to guarantee an explosion, so it has been put back to Spring 2008.

Being still largely in the Awareness-raising stage there are few practical manifestations of the project, although some that are planned include a Green Map of Brixton and an urban gardening education project based on a gardening site which is already established. The Hyde Farm Climate Action Network has formed in a local estate, is growing food in front gardens and has held energy-saving workshops, film showings and fruit-picking events.

I asked Duncan what he saw as being the difference between applying the Transition model in Brixton and elsewhere. He told me:

"One of things that is so different about trying to implement this model in Brixton as opposed to a market town or village is that Brixton is a post-industrial phenomenon - it is not based on an ancient model of sustainability. There is no pre-oil infrastructure in place we can learn from. The effect of peak oil on somewhere like Brixton will be a huge shake-up. No one is looking squarely at the dependency of cities - how to feed them, and what will happen when unemployment rises and house prices fall catastrophically, when there is no more money in the grant pots, and when local government is squeezed. Local government is still making cuts. We are saying to them: invest now in this new infrastructure. We are also exploring how to make relationships outside the city that will support the city, connections to farmers, as well as putting in place local infrastructure such as organic food hubs."

Applying the Transition approach to urban areas is one of the cutting edges of this work, and information-sharing between the various projects is important, so Brixton, Bristol, Nottingham, Brighton and the other urban projects draw a great deal of inspiration and encouragement from each others' efforts.

<http://www.transitiontownbrixton.org>

Transition Forest of Dean

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The Forest of Dean in Gloucestershire clearly presents a very different set of challenges from those of the city of Bristol. It covers about 200 square kilometres and is home to about 75,000 people. The Forest is bounded by the River Wye (and Wales) to the west, and the River Severn to the east. The district's northern boundary is north-west of the city of Gloucester in the Vale of Leadon.

Transition Forest of Dean emerged with Sue and Andrew Clarke, who both worked as environmental consultants and were becoming frustrated at the lack of local action on climate change. They contacted their local council to ask them what they were doing about climate change, the answer to which was not much, because the community hadn't yet told them that they felt it to be an important issue. Around this time, Sue began to focus her work at a more local scale and in March 2007 she came across the Transition Network website. Seeing that the Inaugural Meeting of the Transition Network was coming up soon at Ruskin Mill near Nailsworth, she booked a place and headed over.

Inspired and fired up by the event, Sue returned home to initiate Transition Forest of Dean. She wanted to form a steering group which was not primarily made up of people from a 'green' background, but which represented the broader community. Sue describes the make-up of the group thus:

"We have two with science/environmental/strategic consultancy backgrounds, three with a permaculture background, one Friends of the Earth, one Green Party, one from green business (a local wood co-op), one from a housing co-op, and another a key representative of 'Foresters' involved with preserving our local traditions and rights (very important to the community here). We also have two people who are basically concerned individuals who keep the rest of us grounded and are motivated enough to want to make a change."

Given the dispersed nature of the Forest, and the fact that driving from one side to other takes about 40 minutes, the group quickly realised that they needed to go to the community, rather than expecting the community to come to it. They therefore developed a 'roadshow approach' to take round the main towns, showing films and facilitating discussions afterwards, some of their events focusing on peak oil and transition, and others on the possible impacts of climate change specific to the Forest of Dean area.

Their perspective is that although there are distinct towns within the Forest, most people see themselves as Foresters first, and as residents of their towns second. They, therefore, feel that working on the scale of the whole area is the most skilful approach.

At the beginning, they were concerned that people would feel that Transition Forest of Dean was going to do everything for everyone. Now, as word gets round, people are coming forward, more people are offering help and time. To date their audiences have tended to be mostly of those over 40 years of age, and so they are designing events and publicity in such a way as to have a broader appeal. They have also recently been invited to present to secondary schoolchildren.

Other events they have organised include a monthly social networking get-together, a quarterly local food feast, and stalls at local events. In terms of the Twelve Steps (p.148), they see themselves as being still in the first three, though the recent purchase of a number of Electrisave meters for loan to anyone who would like to monitor their energy usage is a visible action that will reap immediate benefits as people become more aware of their energy-usage habits and how they can reduce their consumption.

<http://www.transitionforest.org.uk>

Some closing thoughts

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Something about these profoundly challenging times we live in strikes me as being tremendously exciting. Clearly peak oil and climate change are potentially catastrophic challenges which can easily lead to our painting grim pictures of social breakdown and ecological collapse. It is easy to spend many sleepless nights worrying about them - many of us have. With a small shift in thinking though, such as that laid out in this book, we may find it

hard to get to sleep due to our heads buzzing with possibilities, ideas and the sheer exhilaration of being part of a culture able to rethink and reinvent itself in an unprecedented way.

I believe that a lower-energy, more localised future, in which we move from being consumers to being producer/consumers, where food, energy and other essentials are locally produced, local economies are strengthened and we have learned to live more within our means is a step towards something extraordinary, not a step away from something inherently irreplaceable.

And what is it exactly that we are so fearful to move away from? The New Economics Foundation has shown that:

- Increased income stopped making us any happier sometime around 1961⁶
- When asked which decade from the 1950s onwards respondents would most like to have lived in, the 1960s emerged as most popular⁷
- 62% of people in the UK have jobs they find uninteresting or stressful
- 87% of Britons agree with the statement 'Society has become too materialistic, with too much emphasis on money and not enough on the things that really matter'
- The degree to which we trust each other has fallen by half since the 1950s.⁸

Also, with national indebtedness now at a record £1.2 trillion, it is clear that we are paying through the nose for something that fails to meet our fundamental human aspirations: happiness, security, time for relaxation, rewarding work and access to healthy food.

Those who are involved in Transition Initiatives (which might now include you if you have got this far in the book) are part of one of the biggest and most important research projects underway anywhere in the world. You are catalysing those around you to ask the questions that government still finds it very hard to ask, but that are essential to our collective survival. You are acknowledging that it is with us that real change begins, and that it is up to us whether we accept this responsibility or shy away from it. I hope you will find the tools in this book useful. What you do with them, how you assemble the pieces, is up to you. We are all making this up as we go along, creating the road as we travel along it.

Central to this book is the proposition that the future with less oil could be preferable to the present, if we are able to engage with enough imagination and creativity sufficiently in advance of the peak. I have mentioned this a few times through this book; I have done so because it is the Transition concept in a nutshell. What that engagement will look like in each community will emerge from that community itself. The idea that every village, town, city, hamlet, island or district could become a Transition Initiative may seem fanciful, yet it is entirely possible. It is an idea whose time has come. It is important to remind ourselves that this is not a process which has achieved nothing until it has completely powered-down its community; rather, what matters is the journey, the process, the coming together and doing it.

When I sat down to begin writing this book, oil cost around \$70 a barrel. Now, in June 2008, the price has almost doubled, being close to \$140. Previously optimistic forecasts are being continually revised downwards, with Fatih Birol, Chief Economist at the IEA, now saying: "We must leave oil before it leaves us." The Age of Cheap Energy is over. The sooner we can acknowledge that and can start to engage our collective creativity, the less likely it is that we will sink into despondency, blame-seeking and powerlessness, and the more likely it is that

we will unleash the most extraordinary and historic transition. We are alive at a pivotal moment in human history.

While peak oil and climate change are undeniably profoundly challenging, also inherent within them is the potential for an economic, cultural and social renaissance the likes of which we have never seen. We will see a flourishing of local businesses, local skills and solutions, and a flowering of ingenuity and creativity. It is a Transition in which we will inevitably grow, and in which our evolution is a precondition for progress. Emerging at the other end, we will not be the same as we were; we will have become more humble, more connected to the natural world, fitter, leaner, more skilled and, ultimately, wiser.

We will emerge blinking into a new way of living, yet it will feel more comfortable and familiar than what we left behind. If we are to trade mobility, growth and affluence for something else, we need to be able to articulate something preferable and more nourishing to put in its place. I hope this book has inspired you to be a catalyst for exploring these new possibilities, in your life, your community and your world. May it keep you awake at night, but this time for all the right reasons.