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**LOCALISATION AND RESILIENCE AT THE LOCAL LEVEL:
THE CASE OF TRANSITION TOWN TOTNES (DEVON, UK)**

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**LOCALISATION AND RESILIENCE AT THE LOCAL LEVEL: THE CASE OF
TRANSITION TOWN TOTNES (DEVON, UK)**

by

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A thesis submitted to the University of Plymouth in partial fulfillment for the
degree of

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School of Geography, Earth and Environmental Science
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University of Plymouth

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List of Abbreviations

BNES	Bath and North East Somerset Council
CCE	Centre for Community Enterprise
CLT	Community Land Trust
CSP	Concentrated Solar Power
DARE	Devon Association for Renewable Energy
DCC	Devon County Council
DPD	Development Plan Document
EDAP	Energy Descent Action Plan
EIA	US Energy Information Administration
FEASTA	Foundation for the Economics of Sustainability (Dublin)
IEA	International Energy Agency
IPCC	Intergovernmental Panel on Climate Change
Mbd	Millions of barrels per day
PB	Participatory Budgeting
SCC	Somerset County Council
SHDC	South Hams District Council
SPSS	A statistical analysis software programme
TDT	Totnes Development Trust
TTC	Totnes Town Council
TTT	Transition Town Totnes
WADE	World Association for Decentralised Energy

Abstract

Robert John Hopkins

Localisation and resilience at the local level: the case study of Transition Town Totnes (Devon, UK).

This thesis provides a critical review of the Transition movement, a grassroots response to peak oil and climate change, co-founded by this author. It focuses on two key aspects of the Transition approach, resilience and economic relocalisation, with the aim of analysing whether and how they can be implemented in a locality based on the Transition approach, and assessing what socio-economic and community-related structures would be necessary to implement such a process. The focus of the research is Totnes, Devon, which because of its status as the UK's first Transition initiative and the longer history of various initiatives to promote local resilience, offers a valuable case study of attempts to practically implement resilience and localisation. A variety of research methods were employed, including surveys, focus groups, oral history and in-depth interviews, as well as less conventional public participation methods such as Open Space and World Café.

The first major finding was that Transition Town Totnes (TTT) has become a significant organisation in the town, with a high level of popular support. It was also found that the obstacles to resilience and relocalisation lie not, as was hypothesised, in a lack of skills or an absence of community cohesion, but in issues of governance and the need for increased social entrepreneurship. It was found that what researchers call the 'Value Action Gap' (i.e. the gap between people's declared sympathies and intentions and their actions) exists in Totnes as much as anywhere else, but that some of TTT's projects, such as 'Transition Together', are working imaginatively to overcome this and to reduce emissions.

From this evidence it is concluded that Transition's approach towards relocalisation and reducing carbon emissions can be argued to be effective in, generating engagement and initiating new enterprises. Like other 'green' initiatives, it struggles to engage those from more disadvantaged backgrounds, but some of its initiatives are showing promise for overcoming this. Its primary contribution is in suggesting a redefining of resilience, not as a state of preparedness for disaster, but as a desired characteristic of a sustainable society. A more resilient community, it is argued, would be one more in control of its food and energy production, as well as being one that enables inward financial investment. It also argues that the government focus on '*localism*', the devolving of political power to the local level, ought to be expanded to include '*localisation*', the strengthening of local production to meet local needs, a shift which would financially benefit local communities. It argues that the key challenge for Transition initiatives such as TTT is going to be scaling up from being 'niche' organisations to become economically viable organisations with a broad appeal and engagement, and also articulates the need for 'Resilience Indicators' which would allow communities to measure the degree to which their levels of resilience are increasing.

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Author's Declaration

At no time during the registration for the degree of Doctor of Philosophy has the author been registered for any other University award without prior agreement of the Graduate Committee.

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Publications:

Bailey, I, Hopkins, R, Wilson, G. (2010) *Some things old, some things new: The spatial representations and politics of change of the peak oil relocalisation movement*. *Geoforum* 41(4) 595-605.

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Also, regular blog posts on www.TransitionCulture.org exploring different aspects of this research.

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Signed..........

Date.....10/11/10.....

"There's lots of things one can't understand,' Moominmamma said to herself.
'But why should everything be exactly as one is used to having it?'

Tove Jansson. '*Moominsummer Madness*' (1954)

"It was a funny little path, winding here and there, dashing off in different directions, and sometimes even tying a knot in itself from sheer joy. (You don't get tired of a path like that, and I'm not sure that it doesn't get you home quicker in the end)."

Tove Jansson '*Comet in Moominland*' (1946)

Chapter 1. Introduction.

1.1. The Background to this research

My work for the last four years has been involved with the Transition movement, a social change project I unwittingly initiated in 2005 and which is now seen by some as one of the most interesting social movements currently underway. Emerging from my background in permaculture design¹, Transition attempts to catalyse community responses to two issues, peak oil and climate change. Although the theory that human activity is, in large part, responsible for climate change is now an established scientific consensus (IPCC 2007), peak oil is more contested, although over recent years reports (Sorrell et al. 2009, Sankey et al. 2009, Owen et al. 2010, Peak Oil Task Force 2010) have suggested a growing consensus that peak oil is a pressing real concern. For Transition, the challenge is to explore the practicalities of what North refers to as 'intentional' relocalisation (North 2010a), building on Fleming's observation, in the context of peak oil, that "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" (Fleming 2006b:109).

Coming from an activist background, my purpose in undertaking this research was firstly to provide a research foundation for Transition Town Totnes's (TTT) Energy Descent Action Plan (EDAP) project, and secondly to provide a degree of academic rigour to TTT, in order to learn lessons of value to the wider Transition movement. In 2008, I published "The Transition Handbook" (Hopkins

¹ Permaculture was a term coined by Mollison & Holmgren (1990) to describe a "perennial agriculture for human settlements". It is now seen more as a design system for sustainable living, and is taught widely around the world.

2008), which set out a proposed, but largely untested, model by which communities might be able to prepare themselves proactively for peak oil. Much has happened since then, and this research is an attempt to expose that model to critical analysis and 'in-the-field' testing. Transition has always been seen as an iterative process (Hopkins & Lipman 2009), and so this research sits well with the concept of learning equally from failures and successes.

1.2. The Research Gap

Transition is an emergent concept and network of initiatives built on the principle that it is a process of learning from mistakes and successes of work on the ground in initiatives on a range of scales. This essence is captured in what is known as the 'Cheerful Disclaimer', as described on the Transition Network's website;

"Just in case you were under the impression that Transition is a process defined by people who have all the answers, you need to be aware of a key fact. We truly don't know if this will work. Transition is a social experiment on a massive scale. What we are convinced of is this:

- if we wait for the governments, it'll be too little, too late
- if we act as individuals, it'll be too little
- but if we act as communities, it might just be enough, just in time.

Everything that you read on this site is the result of real work undertaken in the real world with community engagement at its heart. There's not an ivory tower in sight, no professors in musty oak-panelled studies churning out erudite papers, no slavish adherence to a model carved in stone".

In this spirit, Transition has emerged somewhat organically, and with a rhizomic pattern of spreading (Bailey et al. 2010), but it has perhaps not been so strong

in critically reflecting on its successes or failures, or in measuring the impacts and effectiveness of its initiatives (claims Seyfang 2007), noting the 'dearth' or research on the subject. Transition has generated a great deal of expectation, but has not been the subject of much academic evaluation, with a few exceptions. To the best of my knowledge, this is the first PhD to examine Transition, although there has been some Masters-level research (e.g. O'Rourke 2008, Wreford 2008, McDonald 2009, , Pir 2009) as well as some undergraduate dissertations (Höynälänmaa 2010, Balls 2010), and research conducted by academics (i.e. Seyfang 2009b,d). This research aims to fill several gaps in the literature. The links between peak oil and relocalisation have only recently begun to be explored in the academic literature (e.g. Bailey et al. 2010, North 2010a), although a great deal of thinking on the matter has already taken place with writers such as Heinberg (2007), Astyk (2008), Greer (2009) and Rubin (2009), as well as in the blogosphere. Academic debates still lag behind popular debate, and relatively little published academic material exists.

A key foundation of Transition is the concept of resilience. While a great deal of literature on resilience exists, there is little that looks across the spectrum of resilience research: ecological/social resilience, personal/ 'ego' resilience, community resilience, organisational resilience and so on, seeking common threads that could inform the Transition model. Also, much literature on resilience is underpinned by the concept that resilience is about being able to weather shocks and then return to previous modes of organisation, whereas increasingly, and certainly in the Transition model, resilience is seen as a desirable state, rather than something purely done to avoid disasters. What

resilience might actually mean in practice on a community scale in response to energy scarcity has similarly been little explored in the literature. Other than evaluations of Transition Norwich (Seyfang 2009d) and Transition initiatives in Dorset (Höynälänmaa 2010), there has been little in the way of case studies of individual Transition initiatives, their effectiveness and achievements. This research aims to fill the gap, offering a detailed, research-based case study of the first UK Transition initiative, Transition Town Totnes, the one with which I am most familiar, and am still involved.

Finally, the other research gap this thesis sets out to address focuses on the practicalities of relocalisation. There is a growing body of literature which looks at what one might term the 'ingredients' of Transition; local food systems, community energy companies, 'green' building and so on, but little that pulls it together to look at how, strategically, it would apply to the intentional relocalisation of one settlement. Here, Totnes offers an opportunity to explore how issues of governance, economics, community engagement and infrastructure might all apply to one settlement, offering an important new contribution to the resilience literature. Thus far, much of that literature, especially that produced by national government, focuses on resilience as emergency preparedness, but this thesis sees resilience as an opportunity to re-think communities and redesign them to be more appropriate for a declining net energy, low carbon future, seeing resilience not in terms of disaster preparedness, but as a desirable state in itself.

1.3. Aims and Objectives

This study will be based on the assumption that peak oil is a distinctive and pressing challenge. Using the town of Totnes (Devon, UK) as a case study, the aim is to analyse whether and how resilience and relocalisation can be implemented in a locality based on the Transition approach, and to assess what socio-economic and community-related structures would be necessary to implement such a process.

The study will have five key objectives (which will be presented in greater detail in Chapter 3):

1. To analyse constraints and opportunities for the adoption of relocalisation and resilience in Totnes.
2. To assess the suitability of Heinberg's (2004) framework – in particular exploring the conceptual space between his 'powerdown' and 'building lifeboats' approaches
3. To develop an empirically-based behavioural model by which communities can be *actively engaged* in relocalisation and energy descent pathways, and in measuring their success or failure in building resilience.
4. To explore the potential role of social enterprise in achieving relocalisation and resilience
5. At a broader level, to examine whether and to what extent lessons learned from the Totnes case study can inform similar debates on energy descent pathways in other localities.

1.4. Structure

Chapter 2 sets out the foundations to this research. It explores the issues of peak oil and climate change, in the case of peak oil giving a 'crash course' in the subject, exploring its genesis and core concepts, as well as offering an overview of the most recent studies and research on the subject. Its exploration of climate change takes as a starting point the fact that a scientific consensus on climate change already exists, and instead focuses on the most recent science that has emerged since the 4th Intergovernmental Panel on Climate Change Assessment (IPCC 2007), suggesting a far graver situation than that set out by the IPCC. It moves on then to the subject of resilience, offering an overview of the literature, and then asks whether the concept of 'energy descent', that is, the end of the age of cheap fossil fuels, could be viewed as being an opportunity rather than a crisis. It reviews the literature on localisation, the concept that the shift of economic focus moves from the global to the local, suggesting that much of this literature, until recently, has focused on this being a move determined from choice, rather than necessitated by circumstance. This leads into a look at the Transition movement that has emerged, inspired, in part, by developments in Totnes, and then into a look at the literature on environmental behaviour change.

Chapter 3 offers an overview of the methodology for this thesis. It sets out the thinking behind the choice of a multi-method approach, mixing qualitative and quantitative methods. The methods selected were oral history interviews, in-depth interviews, focus groups, questionnaire surveys and also less conventional methods such as Open Space. This chapter also sets out how the resultant data were analysed.

The focus of **Chapter 4** is the case study, Transition Town Totnes. It begins by asking 'why Totnes?', and outlines some socio-economic data about the town by way of background, and whether Totnes is, as is often stated, 'unique'. This is followed by a look at the history of TTT, how it emerged, and what it has achieved. Finally there are some reflections on reflexivity and positionality.

Chapter 5 starts to focus on the practicalities of localisation in Totnes. It begins with the attitudes towards relocalisation revealed by the various research methods used, and then concentrates on four particular areas, food, energy, housing and transport, to attempt to assess what degree of relocalisation is possible, and what obstacles to that relocalisation there might be.

Chapter 6 explores the community structures necessary to enable the kind of infrastructure for relocalisation set out in Chapter 5 to become a reality. It examines current governance structures and their shortcomings, illustrated by the story of the Totnes Development Plan Document (DPD). It distinguishes between *localism*, an approach much in political vogue, and *localisation*, a much deeper process of refocusing infrastructure to local provision and consumption. Finally it asks what local government founded on the principles of Transition would look like.

Chapter 7 returns to resilience, asking firstly what exactly it is that TTT is building resilience *to*, or *against*? This leads, via. oral history interviews, to an exploration of the recent history of Totnes, and whether it can be argued to have been more, or less, resilient than the present, and if so, what lessons can

be learnt from that. It then assesses the literature on personal and community resilience, to see if useful lessons can be learned. The chapter then moves to the many projects of TTT, to identify whether or not they are contributing to the rebuilding of resilience. Finally, the concept of 'Resilience Indicators' is explored, and whether the indicators developed by TTT for its Energy Descent Action Plan (EDAP) process represent a fully rounded set of indicators.

Chapter 8 summarises the key findings from the research, and then draws out lessons that could be seen as relevant to places other than Totnes. At this point I return to the question of my positionality and reflexivity, to explore the extent to which someone as embedded in this process as myself can hope to produce 'objective' research on the subject. Finally, areas for future research are explored.

Chapter 2. Peak Oil, Climate Change and the Challenge of Energy Descent

2.1. Introduction

The aim of this chapter is to set the foundation for this thesis, providing a grounding in the issues to which Chapters 5-7 will be exploring responses. The Transition approach is specifically conceived as a practical response to peak oil and climate change (Hopkins 2008), so both will be explored in depth. Firstly peak oil will be explored, based on a round-up of the most recent analysis on the subject. Climate change is then explored, and while this is not examined in as much depth, given that a scientific consensus exists in relation to climate change, the focus is rather on the science that has emerged since the Intergovernmental Panel on Climate Change's Fourth Assessment (IPCC2007), which suggests that global warming is occurring far ahead of schedule, with alarming implications. What this could mean in terms of policy and emissions targets is explored. This is followed by a review of the different scenarios suggested by a range of authors as to what peak oil might mean in practice. From these scenarios, a model is generated which sets these scenarios along a continuum. The central focus of this thesis is then explored, that of resilience. While emerging initially from the fields of ecology and human psychology, it has now broadened to focus on what is termed 'social/ecological' resilience. Until recently resilience was conceived as the ability of systems to return to function after a shock, however, it is increasingly seen as being about seeing shock as an opportunity for change and development. An extensive review is then offered of the resilience literature. The concept of 'energy descent' is introduced (Odum & Odum 2001), the concept that the challenge of the 21st

century is to design for an era of declining net energy. Given that the focus of the Transition movement is on localisation as a response to peak oil and climate change (North 2010a, Bailey et al. 2010), the concept is then explored, looking both at its advocates and its critics, followed by a look at the Transition movement itself, its genesis, key concepts and current status. Finally, this chapter closes with a look at the literature on behaviour change, and what insights are emerging as to the conditions under which change is most likely, drawing from a range of research.

2.2. Energy Use

Availability of energy is a critical concern to any civilization, and the availability of cheap fossil fuels has underpinned society since the time of the Industrial Revolution. Cheap energy made possible a huge expansion in the human population (Catton 1982) and is the lifeblood of the global economy (Kunstler 2005, Heinberg 2007). The UK has moved from being energy independent (in coal) up to the beginning of the Second World War, to an increasing dependence on imported oil in the 1960s and early 1970s, and then back to energy independence from 1975 with the discovery of North Sea oil and gas. In the early 21st century, Britain is once again a net importer of energy (Strahan 2007, Chamberlin 2009), with, for example, gas imports rising steeply, from 40% today to an estimated 80% by 2015 (Pagnamenta 2008). This increasing dependence leaves the UK vulnerable in energy security terms and raises a range of issues about the future of energy supply and demand and societal adaptation to their potential decline.

Porritt (2005:59) argues that "without that massive and exhilarating infusion of plentiful hydrocarbons, our world today would look *very different*". It is predicted by the International Energy Agency that the world will be consuming over 40% more energy per annum in 20 years (EIA 2003), although many people, even within the oil industry, are now questioning the reality of this statement, and most organisations charged with predicting future world oil production are scaling back their estimates (Mackenzie 2009:unpaginated).

2.3. Peak Oil

Debates around resource scarcity have historically variously focused on a range of resources: from food and timber to whale oil, from coal and oil to metals and fish. Hemmingsen (2010) notes that these debates have become highly charged, with terms such as "Cassandras", "resource pessimists" or "doomsayers" being thrown at those who emphasise resource constraints, and "Cornucopians", "resource optimists" and "boomsayers" for those who take a more optimistic perspective on reserves (see Bailey & Wilson 2009). One of the resource debates that has generated the most controversy is that surrounding oil reserves.

The peak oil concept was first formulated by the geophysicist M. King Hubbert (1956) and refers to the point at which the world reaches the maximum achievable level of oil production, and beyond which production will irreversibly decrease on an annual basis (Heinberg 2003). It is not that humanity will 'run out' of oil, rather that once the point of having used about half of it is reached, it becomes increasingly difficult to extract, and increasingly costly, both in energetic and financial terms.

On the basis of his reserve estimates and study of the lifetime production profile of typical US oil reservoirs, Hubbert predicted that peak oil production in the US would occur between 1966 and 1972. He was widely derided as at the time America was the world's leading oil producer, and people could see no end to it. With hindsight, US oil production peaked in 1971 (Deffeyes 2001) and has fallen steadily ever since.

According to Mobbs (2005:40), "the value of Hubbert's method isn't just the prediction of when production will peak. It also provides an analysis of the potential for new finds, based upon historical experience, and the levels of production that might be achieved from the existing reserves and any new finds". Hubbert observed that before the peak in production there should be a similar curve and peak that describes the level of discoveries. This is usually around 30 years ahead of the production curve, which many subsequent researchers use as one of the arguments for imminent peak, as world peak in oil discovery took place in the 1970s (Mobbs 2005).

After Hubbert's death in 1989, his work and ideas have been further developed by others, who Deffeyes (2005:28) refers to collectively as the "Hubbertians", most of whom have backgrounds as petroleum geologists. Colin Campbell has been referred to as "the dean among Hubbert's followers" (Heinberg 2003:92). In 1998 he published in *Scientific American*, together with Laherrère, a paper called '*The End of Cheap Oil*' (Campbell & Laherrère 1998) which brought Hubbert's ideas to a new generation, and applied them to more up-to-date scenarios. Campbell's hypothesis is essentially that regular conventional oil

(defined to exclude heavy oils, deepwater oil, polar oil and Liquids from Gas Plants) is of most importance, with heavy oils and tar sands being only of minimal relevance to the global picture. He gives a world ultimate recoverable reserve figure of 1.85 trillion barrels (Campbell 2005).

Hubbert's techniques were also explored and explained by Deffeyes (2005), who calculated an ultimate recoverable reserve figure of 2.12 trillion barrels, and placed the peaking of conventional oil on Thanksgiving Day 2005.

Simmons (2005) evaluated the Saudi oil fields and concluded that reported Saudi oil reserves have been over-inflated for political and economic reasons and concluded that the Kingdom's largest oil fields are already in decline.

Hirsch (2005b) re-evaluated Hubbert's model and challenged the assumption that the peak will actually take the classic bell curve shape. He looked at 7 countries or regions who can be safely assumed to have already peaked: Texas, North America, UK, Norway, Argentina, Columbia, and Egypt, and studied their depletion curves. Focusing on the Lower 48 States in the US, he observed that their peak was more a triangular point than a gentle curve. He defined a decline rate of less than 2% as gradual, over 2% as steep. He showed how increasingly sophisticated technology made no difference to the rate of decline in their production.

This undermines the idea, put forward by many who criticize the Hubbert model (Odell 1984, 1991, 1994; Lomborg 2001; Lynch 2003; Bailey 2006), that high oil prices and advancing technology will mitigate decline. Hirsch's findings (2005b) are that in all the cases studied, decline took place at between 3 and 13%, a far greater rate than the 2-3% decline rate projected by Campbell (2005). He

concludes "if historical patterns are appropriate indicators, the task of planning for and managing world conventional oil peaking will indeed be very challenging" (Hirsch 2005b).

Another group of writers, from outside the oil industry, have explored Campbell et.al's assumptions more deeply. Heinberg (2003) explored the range of perspectives put forward above, as well as those who claim that peak oil is not a problem (see Section 2.9) and concluded that the truth lies close to Campbell's scenarios. For Porritt (2005:63) peak oil is one of the key factors alongside exponential growth that necessitates a profound rethink of economic systems; "conventional economic growth and cheap oil have marched hand in hand for the best part of 60 years; within just a few years, it will have become increasingly apparent that both are on their last legs". Leggett (2005) linked the issues of climate change and peak oil, arguing that they are both symptoms of the same problem.

Although there is still no consensus in the same way as there is in climate science, the past two years have seen a number of highly credible reports focusing on the peak oil issue. In 2008, the International Energy Agency, until that point dismissive of peak oil, published their 'World Energy Outlook'. It argued that "what is needed is nothing short of an energy revolution ... the era of cheap oil is over ... time is running out" (IEA 2008:7). In 2009 the UKERC published a study based on a review of the peak oil literature and the studies up to that point. It sought to address the question "what evidence is there to support the proposition that the global supply of 'conventional oil' will be

constrained by physical depletion before 2030?" (Sorrell et al. 2009:i). It concluded that;

1. The mechanisms leading to a 'peaking' in conventional oil production are well understood and provide identifiable constraints on its future supply at both the regional and global level
2. Despite large uncertainties in the available data, sufficient information is available to allow the status and risk of global oil depletion to be adequately assessed
3. There is potential for improving consensus on important and long-standing controversies on the source and magnitude of 'reserves growth'
4. Methods for estimating resource size and forecasting future supply have important limitations that need to be acknowledged
5. Large resources of conventional oil may be available, but these are unlikely to be accessed quickly and may make little difference to the timing of the global peak
6. The risks presented by global oil depletion deserve much more serious attention by the research and policy communities (ibid).

This was followed by a report by Deutsche Bank (Sankey et al. 2009) which argued that global oil supply will peak in the next few years, predicting an oil price of \$175 by 2016. In February 2010, the Industry Taskforce on Peak Oil and Energy Security (ITPOES 2010:21), comprising leading British companies, warned that by 2015 "capacity starts to be overwhelmed by depletion and lack of new capacity additions, and consequently declines".

A report by Nashawi et al. (2010) applied advanced mathematics to reserve and production data for the top 47 oil producing nations using Hubbert's approach methodology. They argued that world crude oil production would peak in 2014

at around 79 mbd, and showed that non-OPEC production peaked in 2006 at 39.6mbd. Later that month, a study by Owen et al. (2010) co-authored with Sir David King, former Chief Scientific Officer and a former peak oil sceptic, concluded world oil reserves have been exaggerated by up to a third, mostly by OPEC, and are closer to 850-900 billion barrels, not the 1,150-1,350 claimed by the IEA. Demand, they claimed, will outstrip supply by 2014-2015.

The UK Government's position on peak oil continues to be that;

"...with sufficient investment, the Government does not believe that global oil production will peak between now and 2020 and consequently we do not have any contingency plans specific to a peak in oil production" (Monbiot 2009: unpaginated).

The UK Government's (HMG 2009:5) 'Low Carbon Transition Plan', its "national strategy for energy and climate", didn't mention peak oil once, the closest it came to acknowledging the issue was the following;

"In Britain, as our own reserves in the North Sea decline, we have a choice; replace them with ever-increasing imports, be subject to price fluctuations and disturbances in the world market and stick with high carbon, or make the necessary transition to a low carbon, right for climate change, energy security and jobs".

This focus on North Sea depletion rather than global depletion effectively sidestepped the global peak oil issue (Hopkins 2009). In 2010 a private meeting was held at the Energy Institute, bringing together DECC officials, academics, leaders of industry and peak oil analysts to look at what a government response to peak oil might look like, attended also by this researcher. The Guardian (guardian.co.uk:2010:unpaginated) quoted Jeremy

Leggett: "the Government has gone from the BP position – '40 years of supply left, the price mechanism works, no need to worry' – to 'crikey'".

There are those who believe the Peak Oil scenario to be flawed. Most of these writers have backgrounds in economics rather than geology or the oil industry. The base argument for most sceptics is the allocative and dynamic efficiencies of the market, that as oil becomes scarcer, its rising price will encourage innovation and technology to develop alternatives. Economides wrote that "trusting markets is only way we can assure energy abundance in the future, it's also the only way that we will ever transition to something other than oil and gas" (Bailey 2006). This belief is summed up in the oft-quoted saying "the Stone Age didn't end for lack of stone, and the oil age will end long before the world runs out of oil", attributed to former Saudi oil minister Sheik Ahmed Zaki Yamani. One of the main exponents of this school of thought is Lomborg (2001), who believes that humanity always finds substitutes for any resource that begins to grow scarce. One of the first and most vocal critics of the peak oil concept, Adelman (2004:17) wrote "it is commonly asked when will the world's supply of oil be exhausted? The best one word answer: never". For him, the root of the oil 'problem' lies with OPEC; "once we dispense with (the myths about an oil gap...), we will begin to see that many of the problems in the world oil market are the result of this short-sighted cartel, as well as the failure of importers to seize opportunities to weaken it" (Adelman 2004:1).

Smil argued that the peak oil argument is nothing new, that people have been predicting oil peak since 1865, and have always been proved wrong. He outlined his belief, common among many peak oil critics, that the market

economy will function to develop alternatives in time to facilitate a transition. "There is *no reason*" he wrote," to see an eventual decline in oil's share in the global energy supply as a marker of civilisational demise" (Smil 2006:24). Smil (2006:22) was critical of the 'Hubbertians', stating that they "resort to deliberately alarmist arguments as they mix incontestable facts with complex realities and as they ignore anything that does not fit their preconceived conclusions in order to issue their obituaries of Western civilization". For Smil (ibid), humanity has passed through a number of 'energy transitions', each of which "has stimulated technical advances and driven our inventiveness". "Unless we believe, preposterously", he continued, "that human inventiveness and adaptability will cease the year the world reaches the peak annual output of conventional crude oil, we should see that milestone (whenever it comes) as a challenging opportunity, rather than a reason for cult-like worries and paralyzing concerns" (Smil 2006:24).

For Yergin (2009:95), his company's analysis of more than 800 of the world's largest oil fields, indicated sufficient resource "for decades to come". He didn't rule out the possibility of price volatility and interruptions to supply, but felt they will arise from 'above ground' risks and obstacles, not geological constraints. He did however acknowledge, as major challenges, the sharply rising cost of developing new oil projects, and increasing dependence on 'unconventional' oil.

2.4 Climate Change

The second issue underpinning the Transition approach is climate change. The basic mechanics behind climate change were identified in the mid 19th century, when Fourier and Tyndall demonstrated that carbon dioxide and water vapour

trap incoming solar radiation, a process without which the planet would be 20-30°C colder (Kemp 2010). In 1896, Arrhenius argued that the burning of fossil fuels would raise the Earth's temperature (Arrhenius 1896). Since then, the average global surface temperature has risen by 0.8°C, and is already committed to a further 0.6°C rise from emissions already in the atmosphere. The scientific consensus behind the science of climate change is overwhelming, and in spite of a recent vociferous campaign by climate sceptics (Hoggan & Littlemore 2009, Schnieder 2009, Baxter 2010, McKie 2010, Pearce 2010), the effects of a rise in global temperature are being observed from a large number of different lines of evidence from a range of disciplines. These include altered plant and animal behaviour patterns, contraction of Arctic sea ice extent and glaciers, increasing ocean acidification, changing seasonal patterns (IPCC 2007). Ecosystems are proving vulnerable even to small increases in temperature. A rise of 4-6°C would be similar to the difference between today and the depths of the last Ice Age (Kemp 2010). The focus here will firstly be on how the science has moved on since the publication of 2007's fourth IPCC Assessment, and then on the actions necessitated by this latest science on climate change.

Since the publication of the IPCC's 2007 Fourth Assessment, new studies are strongly suggesting that climate change is accelerating ahead of the IPCC's projections (WWF 2008). As Chamberlin (2009:146) put it, the IPCC has "downplayed many of the low-probability, high consequence events". The warming trend observed in the IPCC assessment continues uninterrupted. The 10 warmest years on record have all occurred since 1997, with the decade 2000-2009 being the hottest on record (ibid), June 2010 was the fourth consecutive month with reported warmest averaged global land and ocean

temperatures on record (March, April, and May 2010 were also the warmest on record) (NOAA 2010). For many aspects of climate change, observations are outpacing the IPCC's forecasts. For example, sea level rise predictions continue to rise beyond those predicted by the IPCC (Pfeiffer et al. 2008, Verneer & Rahmstorf 2009). In Antarctica, ice sheets have lost 30 feet in thickness per year since 2003 (Pritchard et al. 2009). 'Dramatic shrinkage' of glaciers in Alaska has also been observed in recent years (USGS 2009), about 30 years ahead of IPCC projections (Stroeve et al. 2007), and it looks virtually certain that the area will be free of summer ice within 10 years, for the first time in over a million years (WWF 2008, SEARCH 2008).

These changes, and others, are being observed in a world which has, so far, only risen 0.8°C on pre-industrial levels. A recent report which compiled and evaluated much of the climate research produced since the 2007 IPCC assessment concluded that a target of 2°C is no longer suitable, given the symptoms of climate change already being observed in the world. Spratt & Sutton (2008:40) argued that;

"Today at less than a 1°C rise the Arctic sea ice is headed for very rapid disintegration, in all likelihood triggering the irreversible loss of the Greenland ice-sheet, catastrophic sea level increases and global temperature rises from the Albedo flip (dark water absorbing more heat than reflective white ice). Many species face extinction from the speed of shifting isotherms. Our carbon sinks are losing capacity and the seas are acidifying".

Given the severity of the potential impacts of climate change discussed above, what levels of cuts in emissions are needed in order to avoid the risk of

catastrophic runaway climate change? The United Nations, the European Union and the UK government concurred that emissions "should not exceed 2°C above pre-industrial levels" (Council of the European Union 2005) given that above 2°C the risk of runaway climate change is much greater. However, Meinshausen et al. (2009) argued that even a 2°C rise cannot be considered 'safe', and would result in the planet being hotter than it has been for millions of years (Schmidt & Archer 2004). Hansen et al. (2008) argued that current CO₂ concentrations of 389ppm may already have committed society to dangerous climate change by the end of the century. Meinshausen estimated that there is about a 70% chance of staying under 2°C if global emissions are cut by 50% from 1990 levels by 2050, and that emissions would need to have peaked by 2020, and that they would need to continue being cut beyond 2050, and to have reached zero before 2100. Meinshausen suggested that a programme of reductions capable of producing cuts in emissions necessary to avoid a 2°C rise would mean that by 2050, the annual UK personal carbon allowance would be between 1.96 and 1.10 tonnes of CO₂e per year, a cut of between 86% and 92% on 1990 levels, a level of emissions similar to that of Mozambique today (WRI 2005). However, Helm et al. (2007) argued that even this scale of cuts is unrealistic, because presently the emissions of different nations are based on production rather than consumption, that is, they don't factor in 'embodied' emissions in imported consumer goods, which could be seen as 'outsourced emissions'. If emissions were calculated on the basis of consumption rather than production, the UK's would increase by 50%.

They argued, like Hansen et al. (2008,) that the 'tipping point' for the Earth's climate was a 0.5°C increase on pre-industrial levels. Given that the global

climate is already committed to a 1.4°C increase, this might seem an impossible task, as Spratt & Sutton (2008:27) acknowledged; “the fact that we have long passed this point in no way detracts from its importance as a policy goal, and a state to which we should wholeheartedly endeavour to return the planet”. For Hawkins et al. (2008) and Kemp (2010), this means nothing less than a target of zero carbon within the next three decades, a target clearly far in advance of current UK government policy, which, as set out in the 2008 Climate Change Act, is to cut UK emissions by 34% by 2020 and at least 80% by 2050 (HM Government 2009). Is this feasible without a major rethinking of many of the assumptions underpinning a business-as-usual approach?

While there now exists agreement among just about all credible scientific analysts that anthropogenic global warming is happening, and that its impacts will be undesirable, in terms of what to do about it, no such consensus exists. One of the key tensions in debates about what to do about climate change is that between mitigation and adaptation. As Gardiner (2004) identifies, the future can be seen as a choice between either simply adapting to the results of unabated climate change, or alternately reducing the risks through abatement activities (mitigation). Striking the balance between adaptation and mitigation is highly complex (Adger et.al:2009): Gardiner (2004:574) warns against “making the case for adaptation a self-fulfilling prophecy”. The worst impacts of climate change can, of course, be avoided by a sustained and effective programme of action, locally, nationally and internationally, to reduce emissions of greenhouse gases, which can be done in many ways, as will be discussed below, including individual behaviour, the development of new technologies, government

regulation and new architectures for international co-ordinated action (Barrett 2007, Stern 2007).

While much research and energy has gone into the area of mitigation, adaptation is more complex and less certain. The question arises, "adapting to what"? Bob Watson of DEFRA has observed that the most recent climate science on emissions trajectories indicates that the UK should plan for the effects of a 4°C rise in average temperatures (Randerson 2008), but many uncertainties remain around this. For example, Ramanathan and Feng (2008) show how aerosols from pollutants are masking warming trends, and that their reduction will unmask the real warming trends, taking observed warming above previous estimates. The ability to adapt is by no means universal: some nations and communities are more able to adapt than others, likewise individual species and natural communities are limited in their adaptation capacity, whereas others are less so. Adaptation, argue Adger et.al (2009:20) is "an imperfect process, driven by our limited understanding and ability to act". While acknowledging this tension between adaptation and mitigation, this section will now focus principally on mitigation.

In debates around mitigation options, there is broad disagreement around the role of technology, and the extent to which technological solutions will enable the mitigation of climate change. One school of commentators are often referred to as 'Promethians' (Dryzek 2005), meaning that they believe that all problems can be dealt with by the appropriate application of technological or economic solutions. They also believe that left to their own devices in a free market, people will automatically generate solutions to the problems they are

facing, climate change included, a view challenged by 2007's Stern Review, which called climate change "the greatest market failure the world has ever seen" (Stern 2007:viii).

Many Promethians (e.g. Bradley 2003, Lawson 2009) question the climate science and argue that it does not represent a serious problem. For example, Bradley (2003) argues that the effects of climate change will be mostly benign, bringing warmth, moisture and carbon fertilisation, all to humanity's benefit. Although economist Kahn (2010) agrees that climate change is happening, his solution is a Promethian one, stressing adaptation over mitigation. He argues that free market supply and demand will mean that people will simply move to different cities in order to adapt to a changing climate, and that that will, in turn, stimulate economic growth. Lomborg (2010) also takes an economist's perspective, arguing for the need to apply cost-benefit analysis to the range of policy options: "if the world is going to spend hundreds of millions to treat climate, where could you get the most bang for your buck?" (Jowitt 2010:unpaginated). He continues, "this is not about 'we have to live with less, wear hair shirts and cut our carbon emissions'. It's about technologies, about realising there's a vast array of solutions" (ibid).

This insistence on the ability of technology to overcome the climate challenge is not limited to Promethians, but also to some within the green movement. Brand (2009), long seen as an 'elder' of the green movement, argues that tackling climate change effectively will require many greens to give up what he calls 'romantic' ideas, and unreservedly embrace science. He argues that in practice, this means an acceptance of nuclear power, genetic engineering,

urbanisation and geo-engineering, usually seen as highly undesirable by the green movement. He asserts that 'romantic environmentalists' are ideologically opposed to finding solutions, whereas engineers believe there must be a solution to everything, and are a better place to look for solutions.

Brand's embracing of nuclear power is increasingly being echoed by a growing number of prominent environmentalists (Lovelock 2006, Lynas 2008, Monbiot 2009). Likewise, Hansen supports the expansion of nuclear power, (2009) stressing that the most urgent priority in tackling climate change is stopping the burning of coal. He argues "if we want to solve the climate problem, we must phase out coal emissions. Period" (ibid:176). His response argues that the most urgent priority is a massive shift to energy efficiency, followed by a huge roll-out of renewable energy. However, he also argues that nuclear power will be needed as a part of the energy mix during the transition to a renewable energy mix. This is echoed by Walker and King (2008:147) who argues that although nuclear power "is not necessarily an ideal way to make energy, the dangers of climate change are certainly far worse".

This focus on energy efficiency and conservation is a key part of the debates. Some (von Weizsacker et.al. 1997, Hawken et.al. 2005) argue that there is significant scope for carbon savings without loss of economic momentum. Kemp (2010) argues that the installation of a new infrastructure of renewable energy needs to be accompanied by deep reductions in energy consumption, what he refers to as the balance between 'powering up', and 'powering down'. One of the more memorable models is Pacala and Socolow's 'Stabilisation Wedges' approach. This argues that the necessary levels of energy reduction

can be achieved, not by one 'silver bullet' technology, but by a collection of proven, non-experimental technologies. They divide the necessary reductions into 7 'wedges', arguing that "a wedge represents an activity that reduces emissions to the atmosphere that starts at zero today and increases linearly until it accounts for 1 GtC/year of reduced carbon emissions in 50 years". The seven wedges include:

- Improved fuel efficiency in vehicles
- Reduced use of vehicles
- More efficient buildings
- Improved power plant efficiency
- Decarbonisation of electricity and fuels
- Natural sinks

As will be seen however, it could be argued that the 'wedges' concept assumes no issues around energy availability and price, and only envisages energy reductions within a 'business as usual' scenario. It also fails to address forecasts that while improved efficiency is possible, it can easily be overtaken by increases in consumption. For example, the World Energy Council predicted in 1997 that global electricity consumption will rise at least 50% by 2020, with per unit efficiency gains being overtaken by the effects of continuing economic and demographic growth (Brierley 1997).

What economic models are proposed that might assist with this reduction in energy consumption and, by extension, carbon emissions? A range of models have been proposed, from carbon taxes to 'Cap and Share' (Douthwaite 2010), and to Tradable Energy Quotas (Fleming & Chamberlin 2010). The latter two

propose varying models for the rationing of carbon-producing fuels. Within these debates, there is also a tension between those (Hopkins 2008, McKibben 2010, North 2010) who argue that the need to urgently reduce carbon emissions inevitably necessitates intentional localisation, and those who argue against this. North (2010:6) refers back to Pacala and Socolow's 'stabilisation wedges' referred to above, suggesting that "avoidable international trade that does not include other desirables, like human social intercourse or knowledge transfer, should be seen as one of the stabilisation wedges that we need to decarbonise through localisation". The idea of relocalisation as a key strategy for reducing greenhouse gas emissions is also proposed by White (2010), who notes that one-third of EU nations' carbon emissions are embodied in goods and services imported from other countries, mainly in the developing world, and suggests a policy framework that could support relocalisation, although she notes that at present this is not on the international political agenda: "the G20 has directed all its efforts to saving the free market global economy – leading to an even greater reliance on export-led growth, reduced barriers to trade and increased capital flows between states".

The idea that reducing emissions logically means a reduction of reliance on imported goods is also dismissed by Lawson (2009:105) (who it should be noted is sceptical of the scientific consensus on climate change) who argues that:

"... it should not need pointing out that a lurch into protectionism, and a rolling back of globalisation, would do far more damage to the world economy, and in particular to living standards in developing countries, than could conceivably result from the projected continuation of global warming".

While the Transition movement (Hopkins 2008) argues that a grassroots response to climate change is a non-political response, that “we are all in this together”, this is challenged by Swyngedouw (2006) who argues that political elites prefer to cast climate change as a ‘post-political issue’. Monbiot (2006) argues that tackling climate change necessitates political campaigning and activism. He argues “in fighting climate change, we might fight not only the oil companies, the airlines and the governments of the rich world; we must also fight ourselves” (ibid:212). Others argue that responding to climate change requires not only political engagement, but that it represents an unprecedented refocusing of the need for strong national governance. Orr (2009:211) reflects that:

“From nearly half a century of work in sustainable and natural systems agriculture, urban design, biomimicry, ecological engineering, green building, biophilic design, solar and wind technology, regenerative forestry, holistic resource management, waste cycling, and ecological restoration, we have the intellectual capital and practical experience necessary to remake the human presence on the Earth”.

He argues, echoing Brown (2006a), for a political response akin to a ‘wartime mobilisation’, a refocusing of national effort in order to bring this about. However, as Monbiot (2010b) recently observed, any hope of an international agreement on climate change, or of the US government passing any meaningful legislation on climate change would now appear to be a long way off, any hope of a government-led ‘wartime mobilisation’ looking highly unlikely. Prins et.al (2010) argue that, in the light of the failed Copenhagen summit, the Kyoto model of international agreement is “structurally flawed and doomed to fail” (Prins et.al 2010:5). They proposed a “radical reframing”, an “accepting that

decarbonisation will only be achieved successfully as a benefit contingent upon other goals which are politically attractive and relentlessly pragmatic" (ibid). It is their assertion that this necessitates the reframing of the climate issue "around human dignity rather than human sinfulness" (ibid:6) offering a balance between mitigation and adaptation in their three key recommendations:

1. Ensuring energy access for all
2. Ensuring that we develop in a manner that does not undermine the essential functioning of the Earth system
3. Ensuring that our societies are adequately equipped to withstand the risks and dangers that come from the vagaries of climate, whatever their cause might be.

Most of the above, however, view the climate change issue in isolation from the peak oil issue. Bringing the two challenges together, as the Transition movement does, gives rise to a fresh set of questions. If the world really is at, or within a few years of an 'oil crunch', might it be that this constraint to fossil fuel supplies actually means that, through circumstance rather than choice, the world finds itself living within the rapid reduction scenarios for carbon emissions described above? A study by Schmidt and Archer (2009) argued that to avoid runaway climate change, the world needs to keep well below the amount produced by burning all the remaining proven economically recoverable fossil fuel reserves. One of the key challenges presented by peak oil is the shift to what are termed 'unconventional oils', what Chamberlin (2009:128) called the "substitution problem". This refers to the enforced substitution of relatively clean, high EROEI (Energy Return on Energy Invested) fuels such as natural gas and conventional oil, to less clean fuels such as heavy oils and tar sands (NCEP 2004). The oil price spike of July 2008 led to an expansion of oil from

these sources, as well as of coal-to-liquids, a method of producing liquid fuels with twice the carbon footprint of conventional oils (Market Avenue 2009).

A report by Lloyds and Chatham House looked at the combined impacts of peak oil and climate change, concluding that:

“energy security is now inseparable from the transition to a low-carbon economy and businesses plans should prepare for this new reality. Security of supply and emissions reduction objectives should be addressed equally, as prioritising one over the other will increase the risk of stranded investments or requirements for expensive retro-fitting” (Froggatt &Lahn 2010:38).

2.5. Future Scenarios: Assessing the Scale of the Challenge

2.5.1. Introduction

What might be the implications of peak oil for Western economies? The most authoritative analysis thus far is *'Peaking of World Oil Production – Impacts, Mitigation and Risk Management'* (Hirsch et al. 2005), commissioned by the US Department of Energy. The study did not look at when peak oil might occur, rather at its risk management implications, and the lead-times preparation would require.

Peak oil, they concluded, represents “an unprecedented risk management problem” (Hirsch et al. 2005:4). They analysed three scenarios, the first where action is not initiated until peaking occurs, the second which assumes that action is initiated 10 years before peaking, and the third where action is initiated 20 years before peaking. They concluded:

“the problems associated with world oil production will not be temporary, and past ‘energy crisis’ experience will provide relatively little guidance. The challenge of oil peaking deserves immediate, serious attention, if risks are to be fully understood and mitigation begun on a timely basis” (ibid:5).

Regarding the amount of time required for adequate mitigation, the authors write that any response will “need to be initiated more than a decade in advance of peaking” (ibid:4).

While there is no way of knowing exactly what life beyond the oil peak might hold in store, a number of writers have explored the range of possible outcomes through the vehicle of scenarios. In order to enable Chapters 5-7, which look at the practicalities of community-initiated responses to peak oil and climate change, to be as grounded as possible, an in depth look at some of these scenarios will be useful. Just what might a post-peak world look like?

2.5.2. The Scale of the Challenge

Hirsch et al. (2005:7) argued that peak oil represents a problem “unlike any yet faced by modern industrial society”. Yet, how might this ‘change in direction’ in terms of our energy availability and all that it has made possible be conceptualised? For Brown (2006b:2006), like Hirsch et al. (2005), the scale of response required is that of a ‘wartime mobilisation’. Taking as an historical example the restructuring of the US economy at the beginning of World War Two he wrote:

“this mobilisation of resources within a matter of months demonstrates that a country and, indeed, the world, can restructure its economy quickly if it is convinced of the need to do so. The issue is not whether most

people will eventually be won over, but whether they will be convinced before the bubble economy collapses" (Brown 2006b:unpaginated).

In a later article he characterised this shift as being "from a fossil-fuel-based, automobile-centered, throwaway economy to a renewable-energy-based, diversified-transport, reuse/recycle economy" (ibid). The concept of a 'war-time mobilisation' was echoed by Heinberg (2004:88), who called it "a species-wide effort towards self-limitation".

2.5.3. The Concept of 'Energy Descent'

Much has been written about the geological and economic aspects of peak oil, but very little which looks beyond the peak, into what some now refer to as 'energy descent' (i.e. Jarman 2006; Heinberg 2006; Hopkins 2006; Fenderson 2004, 2006). The concept of energy descent was first put forward by ecologists Odum and Odum (2001:4):

"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".

The term was further developed by Holmgren (2003b:unpaginated); "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".

For the purpose of this paper energy descent will be defined as:

"the continual decline in net energy supporting humanity, a decline which 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 the 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" (Hopkins 2006:19).

Heinberg (2010:unpaginated) argues that energy descent and the end of economic growth are inevitably intertwined, that the downward side of the energy bell curve will be one of economic contraction:

"In effect, we have to create a desirable 'new normal' that fits the constraints imposed by depleting natural resources. Maintaining the 'old normal' is not an option; if we do not find new goals for ourselves and plan our transition from a growth-based economy to a healthy equilibrium economy, we will by default create a much less desirable 'new normal' whose emergence we are already beginning to see in the forms of persistent high unemployment, a widening gap between rich and poor, and ever more frequent and worsening financial and environmental crises—all of which translate to profound distress for individuals, families, and communities."

2.5.4. Future Scenarios

While some authors have used fiction to explore how the post-peak world might unfold (Callenbach 1975; Slonczewski 1987; Starhawk 1994; Poyourow 2005, Kunstler 2008), it is from scenario planning that much insight has emerged offering useful tools for assessing general post peak oil trends. Gallopin (2002:365) argues “unlike projections and forecasts, which tend to be more quantitative and more limited in their assumptions, scenarios are logical narratives dealing with possibly far-reaching changes”. He continues, “the scenario approach can provide a common framework for diverse stakeholders to map and address critical concerns and identify alternatives as a forum for discussion and debate” (ibid). None of the authors below would argue that their scenarios will unfold as described. They are storylines rather than predictions, offering tools to encourage creative thinking, which as Figure 2.2. shows, have many overlaps.

Holmgren (2009) identifies four possible scenarios (see Figure 2.1). The first two, the ‘techno-explosion’ (holidays on the moon, unlimited nuclear cold fusion etc.) and ‘collapse’, he sees as unlikely or eminently undesirable. More realistic are the third and fourth, ‘techno-stability’ and ‘energy descent’. ‘Techno-stability’ outlines the idea that business-as-usual can continue indefinitely, with renewable energy replacing conventional energy, hydrogen cars replacing existing cars. The concept of ‘energy descent’ Holmgren defines thus, “human society *creatively* descends the energy demand slope essentially as a ‘mirror image’ of the creative energy ascent that occurred between the onset of the industrial revolution and the present day” (Holmgren 2005:7). It is this fourth

scenario which Holmgren believes to “represent the only truly sustainable future” (ibid).

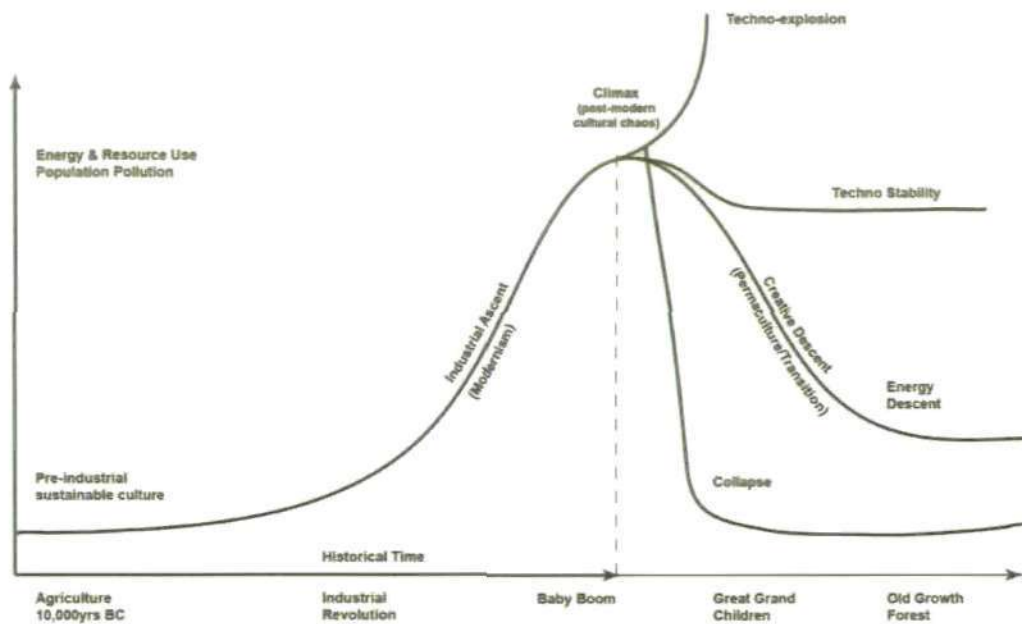


Figure 2.1. Holmgren's Energy Futures Scenarios (Source: Holmgren 2009).

The first of Heinberg's (2004) four scenarios, "Last One Standing", describes a scenario where military force is used to secure remaining world hydrocarbon reserves. In his second, "Waiting for the Magic Elixir", a new energy source as abundant and versatile as oil is developed, such as cold fusion or the mythological 'free energy'. The third scenario, "Powerdown", is seen as "the path of cooperation, conservation and sharing" (Heinberg 2004:14), a Government-led strategy utilising all the resources at its disposal to reduce per-capita consumption and build the post-fossil fuel economy and infrastructure. Finally, "Building Lifeboats", which, Heinberg (2004:15) suggests, "begins with the assumption that industrial civilisation cannot be salvaged in anything like its present form ... a process of building community solidarity, creating a localised infrastructure and preserving and enhancing the essentials of life". Heinberg

suggests that “the most fruitful response is likely to be a combination of Powerdown (in its most vigorous form) and Lifeboat Building” (ibid) (a tension explored in greater depth in 7.2.).

A study by Foresight (Curry et al. 2005) examines 4 scenarios for the future of transport in the UK. These were developed to investigate how science and technology might be applied to infrastructure over the next 50 years. The scenarios it proposes are as follows;

1. **Perpetual Motion.** A zero-emissions hydrogen economy, assumes that globalisation is still in place, with strong demand for travel.
2. **Urban Colonies.** A future of compact sustainable cities, with energy efficient public transport systems, more isolated rural areas and reduced consumption.
3. **Tribal Trading.** A world that has been through a ‘sharp and savage energy shock’. A global recession has left millions unemployed, and for most people, ‘the world has shrunk to their own community’. Transport is typically by horse and bicycle.
4. **Good Intentions.** A world in which a system of rigorous carbon rationing has been introduced, leading to reduced traffic volumes and more mass transportation.

The authors acknowledge that the exact year of oil peak will have a considerable effect on the timeframe of this scenario. Within ‘Tribal Trading’ the authors acknowledge that there is considerable room for a range of outcomes.

The final relevant scenarios come from outside the peak oil literature. Johnston (1991) explores paradigms for the future and identifies 3 possibilities. Canty (2005) observes that while Johnston does not directly address the ecological

crisis, his categories are helpful. The first, 'onward and upward', if translated to the environmental scenarios, is that of believing Governments and scientists will "come up with something". This echoes Holmgren's 'techno-explosion' and Heinberg's 'Waiting for the Magic Elixir'. Johnston's (1991) second scenario he terms the 'polar view', which essentially believes that our problems will lead to "Armageddon: nuclear, environmental or economic collapse, akin to Holmgren's 'collapse'.

His final paradigm he calls the Evolutionary scenario, which "includes elements of each while stepping beyond either". This echoes Holmgren's 'energy descent' scenario, and partly Heinberg's 'Lifeboats' and 'Powerdown' scenarios, indeed at this stage it will be clear to the reader that there are many overlaps between these different scenarios. Johnston writes that most of the environmental movement operates from the polar view, arguing that we have to wake up collectively to the scale of the crisis before it is too late. This leads to solutions that promote conservation, environmental law and so on. The Evolutionary paradigm requires our evolution as a species, rather than just allowing technological solutions to 'fix' the problem.

2.5.5. The Post Peak Scenarios Model

The model in Figure 2.2. was created to place the scenarios discussed in 2.4.3, as well as others by FEASTA (2006) and Gallopín (2002), along a spectrum. Its form became circular rather than linear, as both extremes led to what Holmgren terms 'Collapse'. Johnston's paradigms underpin the model, offering a useful template. Those scenarios between Techno Stability and Localisation fall within the Evolutionary Scenario, suggesting that for these to be successful, they will

require our collective cognitive and behavioural evolution or adaptation as a species.

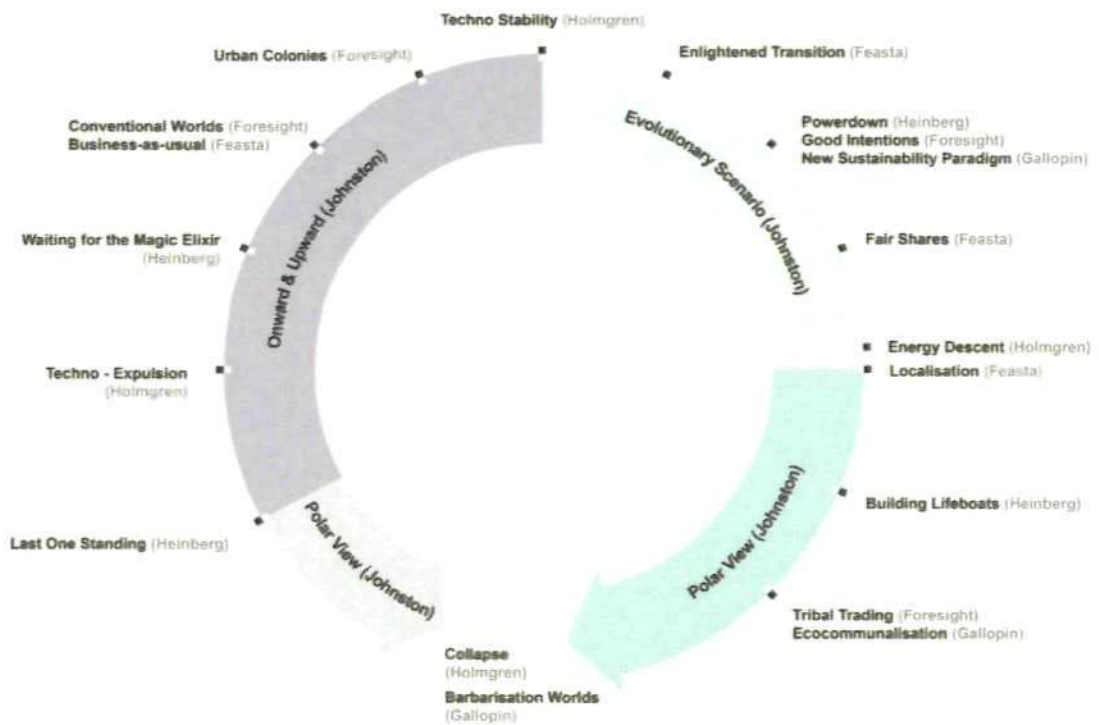


Figure 2.2. Spectrum of post-peak scenarios (Source: Hopkins 2006; after Johnston 1991; Gallopini 2002; Holmgren 2009; Heinberg 2004; Curry et al. 2005; FEASTA 2006).

It might be argued that the scenarios in the 'Onward and Upward' realm require what scenario planner Pierre Wack called the "Three Miracles", namely a technological miracle (i.e. extraordinary new exploration and production levels or free/hydrogen energy), a socio-political miracle (that Government policies and cultural values will allow social exclusion to be eradicated) and thirdly a fiscal miracle, namely that the public sector will fund the implementation of that scenario (Kleiner 1996). It is the unlikeliness of all three miracles occurring that leads this dissertation to believe that those scenarios along the Evolutionary spectrum are perhaps the most likely.

2.6. Resilience

2.6.1. What is Resilience?

The concept of resilience is central to this research. Walker & Salt (2006:9) offer a definition of the term: "at the heart of resilience thinking is a very simple notion – things change – and to ignore or resist this change is to increase our vulnerability and forego emerging opportunities. In so doing, we limit our options". The wider literature on resilience, however, isn't so straightforward. The resilience literature fails even to find agreement as to the origins of the idea. Rose (2007) places the origin of resilience in the work of ecologists such as Holling (1973), while Manyena (2006), although acknowledging those who cite ecology or physics as its origins, instead places its emergence earlier, within the disciplines of psychology and psychiatry in the 1940s (Johnson & Wielchelt 2004). The concept has subsequently branched out into other fields, such as emergency planning (i.e. Flynn 2007), organisational development, disaster management (i.e. McEntire et al. 2002) and what is termed 'human resilience' (Siebert 2005, Masten & Obradovic 2008).

Resilience is defined in many ways (see Table 2.1. below). One key debate in the literature revolves around whether it refers to the ability of a system to absorb perturbations or shock, or to the actual magnitude of disturbance that can be absorbed before a system has to change its structure (Adger 2000). For others it is the speed of recovery from a disturbance. The term resilience, in many definitions, echoes what Crystal Palace manager Ian Dowie once called "bouncebackability" (Edwards 2009:17), i.e. the ability to rebound, bounce back, after a disaster. However, as Manyena (2006) points out, the danger with this is that it ends up as a reactive stance, rather than a proactive one.

Generally speaking, resilience has been viewed in two broad ways, either as a desired *outcome* (or number of outcomes), or as the *process* itself which leads to those outcomes (Kaplan 1999). For this thesis, I will be focusing on the socio/ecological definitions of resilience that began with the work of C.S. Holling, and subsequently from a range of authors, often under the umbrella of the Resilience Alliance².

Author	Definition
Wildavsky, 1991	Resilience is the capacity to cope with unanticipated dangers after they have become manifest, learning to bounce back.
Holling et al., 1995	It is the buffer capacity or the ability of a system to absorb perturbation, or the magnitude of disturbance that can be absorbed before a system changes its structure by changing the variables.
Horne and Orr, 1998	Resilience is a fundamental quality of individuals, groups and organisations, and systems as a whole to respond productively to significant change that disrupts the expected pattern of events without engaging in an extended period of regressive behaviour.
Mallak, 1998	Resilience is the ability of an individual or organisation to expeditiously design and implement positive adaptive behaviours matched to the immediate situation, while enduring minimal stress.
Miletti, 1999	Local resiliency with regard to disasters means that a locale is able to withstand an extreme natural event without suffering devastating losses, damage, diminished productivity, or quality of life without a large amount of assistance from outside the community.
Comfort, 1999	The capacity to adapt existing resources and skills to new systems and operating conditions.
Paton, Smith and Violanti, 2000)	Resilience describes an active process of self-righting, learned resourcefulness and growth—the ability to function psychologically at a level far greater than expected given the individual's capabilities and previous experiences.
Cardona, 2003	The capacity of the damaged ecosystem or community to absorb negative impacts and recover from these.
Pelling, 2003	The ability of an actor to cope with or adapt to hazard stress.
Resilience Alliance, 2005	Ecosystem resilience is the capacity of an ecosystem to tolerate disturbance without collapsing into a qualitatively different state that is controlled by a different set of processes. A resilient ecosystem can withstand shocks and rebuild itself when necessary. Resilience in social systems has the added capacity of humans to anticipate and plan for the future.
UNISDR, 2005	The capacity of a system, community or society potentially exposed to hazards to adapt, by resisting or changing in order to reach and maintain an acceptable level of functioning and structure. This is determined by the degree to which the social system is capable of organising itself to increase this capacity for learning from past disasters for better future protection and to improve risk reduction measures.

Table 2.1. Definitions of Resilience. (Source: Manyena 2006).

² www.resalliance.org.

Two of the key definitions of resilience offer a way forward on the subject for this research. Walker and Salt (2006:32) define it as "the capacity of a system to absorb disturbance and reorganise while undergoing change so as to still retain essentially the same function, structure and feedbacks". Adger (2009:unpaginated), on the other hand, offers this definition, "resilience of social-ecological systems is determined by their ability to absorb disturbance, their ability for self-organisation and the capacity to learn and adapt". As Edwards (2009) observes, it is Adger's emphasis on learning and adaptation, and ensuring capacity for it, which makes it more relevant. Edwards (ibid:18) draws from both definitions in offering his own, which I will, from this point forward, take as the most useful: "the capacity of an individual, community or system to adapt in order to sustain an acceptable level of function, structure and identity". However, as the reader will see, this research proposes a deepening of the term resilience to reflect the opportunity it creates. It could be argued that resilience is not merely about 'sustaining an acceptable level of function', rather, in the light of peak oil and climate change, it could be reconceptualised as a fundamental rethink of assumptions about infrastructure and systems which could lead to a more sustainable and enriching low carbon and more resilient economy, rather than just 'sustaining' current models and practices.

2.6.2. How does resilience thinking contribute to sustainability?

The concept of 'sustainable development' was first used in 1980 in the 'World Conservation Strategy' but gained wider acceptance in 1987 with the publication of the World Commission on Environment and Development report '*Our Common Future*', better known as the '*Brundtland Report*', in honour of its

chairperson, Gro Harlem Brundtland. Brundtland's definition of sustainable development has since become the classic, albeit much disputed, definition:

"Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs" (WCED 1987:43)

Sustainable development, as articulated by Brundtland, suggested that it brought something for everyone, that wealthy nations could continue with economic growth, just more efficiently so, and poorer nations could also grow their economies, while preserving their natural capital. It insinuated a conscious and intentional shift from a more quantitative notion of 'growth', to a more qualitative 'development' (Johnston et al. 2000). The concept generated a widespread enthusiasm and support which, in part, led to the 1992 Earth Summit in Rio, but, Daly and Cobb (1994) argue, it was precisely because the term was so vague that it was so widely supported.

The meaning of the term has been widely debated ever since. As early as 1996, Fowke & Prasad had identified over 80 definitions of sustainable development (Johnston 2000), covering a range of interpretations, from Meadows et al, authors of the influential 'Limits to Growth' reports, who argued that it meant an end to economic growth, to the World Business Council, for whom the term necessitated the perpetuation of economic growth (Dryzek 2005:147). Does this mean, Dryzek mused, that the concept should be "dismissed as an empty vessel that can be filled with whatever one likes?" No, he argued, what is

important to bear in mind is that sustainable development is a discourse, rather than a concept which can or should be defined with any precision. Critiques of Brundtland's definition take many forms. There are those, such as Sachs (1993) who see the term as an oxymoron, and who argue that development, *per se*, should not be sustained, given that it is, in effect, the exploitation of poorer nations by wealthier ones. The two key concepts that are questioned are those of needs, and of limits. Daly and Cobb (1994) criticize the failure of sustainable development to distinguish between needs and sufficiency, and also question how the ability of future generations to meet their needs might be actually assessed.

Gibbs et al. (1998) note the distinction between 'weak' sustainability and 'strong' sustainability. Weak sustainability embodies the idea of economic growth on the basis of carrying capital forward to the next generation, without this necessarily being natural capital (i.e. Pearce 1993, Pearce et al. 1989). Strong sustainability, on the other hand, is described as being development which maintains critical natural capital. For Cork (2009) one of the weak points of the sustainability concept is that in spite of the objective of sustainable development being to define sustainability and then to design strategies for achieving it, over subsequent years, environmental scientists have increasingly come to realise that there is no one sustainable combination of environment, economy and society that will work both now and into the future. He argues that rather than focus on sustainability *per se*, a weaving in of resilience thinking would lead to identifying "states that are clearly not sustainable, avoid[ing] them, while building and maintaining the ability of linked environmental-social systems to respond to change, while still maintaining their basic functions" (Cork 2009:5).

Increasingly the issues of peak oil and climate change (see 2.3), and the emerging reality of the concept of energy descent (see 2.4.3), as drivers for change tend to lead to a questioning of the assumptions underpinning the concept of sustainable development. Holmgren (2003a:xxx) wrote, "I am suggesting that we need to get over our naive and simplistic notions of sustainability as a likely reality for ourselves or even our grandchildren, and instead accept that our task is to use our familiarity with continuous change to adapt to energy descent".

Alongside Cork, others within the world of resilience thinking suggest that resilience brings insights and relevant and appropriate concepts to sustainable development. Promoting resilience instead of sustainability, Adger argues, "means changing, in particular, the nature of decision-making to recognise the benefits of autonomy and new forms of governance in promoting social goals, self organisation and the capacity to adapt" (Adger 2003:2)

For Walker and Salt (2006), one of the flaws in the sustainable development concept revolves around resource efficiency. Resource efficiency can, they argue, actually work against sustainability, given that "the more you optimise elements of a complex system of humans and nature for some specific goal, the more you diminish that system's resilience" (Walker & Salt 2006:142) The irony is, they write, that the closer humanity moves towards an efficient optimal state, the more vulnerable to shocks and disturbances, and ultimately the less resilient it becomes. For example, the 'just in time' distribution systems which make supermarkets so successful and cost-effective, also leave them highly vulnerable, as was seen in the 2000 lorry drivers' dispute (see, for example,

Strahan 2007). They conclude that "any proposal for sustainable development that does not explicitly acknowledge a system's resilience is simply not going to keep delivering the goods (or services). The key to sustainability lies in enhancing the resilience of social-ecological systems, not in optimising isolated components of the system" (Walker & Salt 2006:141).

This researcher's position on this subject is that debates as to whether resilience is an aspect of sustainability, or sustainability an aspect of resilience creates a false, and unhelpful, dichotomy. Resilience brings vital insights to sustainability, but does not devalue sustainability's core premises. Resilience suggests that in the longer term push towards sustainability, one must also bear in mind the need to try different options, allow for change and continual adaptation, and be open to taking risk in order to learn through experimentation. Sustainability is conceptualised as always being a good thing, with intra and inter-generational equity and social justice at its core, resilience is not necessarily such a good thing, some resilient communities could be substantially lacking in these. An overall approach would be to base decisions on sustainability thinking and objectives, and then, when working out how to best achieve them, use resilience thinking to ensure that resilience is maximised, and the moves towards sustainability are designed, as much as possible, with the possibility of unexpected shocks in mind.

2.6.3. Does Resilience Mean Relocalisation?

The concept of localisation is explored in depth in 2.6.3, but it is useful here to note that this is a question seldom asked in the resilience literature, a gap in the literature this thesis is attempting to fill. However, Adger (2003:3) asks the

question “can globalisation be directed to promote resilience?” Having observed that liberalisation of trade leads to increased vulnerability among the poor of those nations, he identifies two possible solutions. The first is “promote autonomy, local reliance, diversity and risk aversion to diminish vulnerability” and the second is to “promote integration, specialisation, and risk taking to encourage economic progress and diminish vulnerability” (ibid). These two solutions, as Adger notes, are highly divergent, and, indeed, mutually exclusive. “The solution”, he concludes, is that “we need a new way of valuing autonomy, local reliance and the contribution they make to sustainability and resilience” (ibid). It would be fair to say, however, that although this thesis explores the concept that one important manifestation of resilience in practice is increased economic localisation, very little other literature exists on the subject thus far, this thesis being one of the first publications to explore it.

2.6.4. Resilient to What?

At this point it is useful to sound a note of caution about the term resilience. As will be discussed below, a key question is ‘resilient to what?’ Clearly collective actions and responses will be greatly determined by what people see as being the key threats/challenges to resilience. The Resilience Alliance (2007) in their Resilience Workbook (see 2.5.5. below) see their aim as being to build resilience to disturbances in the broadest sense. Edwards (2009) in his paper for the UK think tank DEMOS, is more specific, listing, among the things communities, and indeed the country as a whole, need to be resilient to: climate change, floods, extreme weather events, pandemics, energy shortages, nuclear attacks, terrorism and various others. He argues that national resilience building is ultimately about the relationship between individuals and the state,

and that it is not something that can be seen as the sole domain of government. For him the challenge is about "how we can build and sustain community resilience with support from central and local government, relevant agencies, the emergency services and voluntary organisations" (Edwards 2009:10).

Newman et al. (2009) explicitly link the challenges of peak oil and climate change to resilience, arguing that "in terms of resilience thinking, the challenge for our cities is to reduce petroleum fuels at a rate that can manage the global climate and peak oil agendas, but not destroy the social fabric of the city in the process" (Newman et al. 2009:33). To the issues of peak oil and climate change, Homer-Dixon adds economic growth, and the dangers it poses to the biosphere. He writes "if we want to thrive, we need to move from a growth imperative to a resilience imperative" (Homer-Dixon 2007:308). What such an imperative might look like in practice is explored in Chapters 5 and 7. He acknowledges that, in so far as society is currently configured, economic growth is critical for the world's economy, but adds "it must not be at the expense of the overarching principle of resilience, so needed for any coming transformation of human civilisation" (ibid).

Much has been written about resilience in relation to climate change (e.g. Adger et al. 2009), but recently peak oil has also begun to emerge distinctively in the resilience literature. Dunlop (2009:51) writing in a report looking at resilience in an Australian policy context, wrote "we need to understand the resilience of our economy and society to major shocks; we may well have to fundamentally restructure our energy system, and economy, in the face of acute oil shortages".

The additional question is then raised “resilience of *what* to *what*?” (Resilience Alliance 2007, Cork 2009). For the Resilience Alliance, it is vital that considerations of resilience begin by ‘bounding the system’, that is, identifying the system to be assessed. They identify 3 main elements of that system, natural resources, people and governance. Cork adds to this, arguing that in considering “the resilience of what” (Cork 2009:63), it is key to define the benefits that people expect from ecological systems, what he terms ‘ecosystem services’. The question ‘the resilience of what to what?’ is clearly a key starting point which has a bearing both on the emergent strategies and on addressing the objectives of this thesis.

2.6.5. Measuring resilience

The actual measurement of resilience is a young and emerging field of study, but one vital to this thesis’s exploration of what resilience might look like in practice at the community level (attempts to develop ‘Resilience Indicators’ for measuring resilience in Totnes are discussed in 7.6). Cork (2009:76) also sees measuring resilience as vital: “building resilience will not happen without an informed intent to develop measures of resilience, to anticipate and plan for future shocks, and to retain healthy levels of personal, organisational and societal functioning”. Bollig (2003:9) argues that “convincing indicators for resilience in human systems, which allow a comparison of communities and of different time horizons within a given community, are needed”. It is useful at this point to introduce two such approaches, the ‘Resilience Assessment Workbook’ and the ‘Community Resilience Manual’.

In 2007, the Resilience Alliance published the 'Resilience Assessment Workbook', which offered users "a process to assess the resilience of natural resource systems in order to guide management planning" (Resilience Alliance 2007:5). Rather having the community focus of this research, the Workbook has a resource management focus and its focus is the regional scale. The key question it sets out to explore is "are existing strategic and operational plans for the region (implicit or explicit) robust to future uncertainties?" (ibid:4) It seeks to enable the user to identify the complexity and the functioning of the region as a system. Although it contains some useful tools, as a methodology for measuring community resilience, it struggles in terms of usability by non-professionals and has no focus on peak oil and climate change. It also acknowledges the iterative nature of this approach, "an assessment of resilience is never complete. It must be revisited regularly as systems dynamics change and as understanding grows. [It is] a process, rather than ... a final product" (ibid 2007:6).

Possibly more useful place in terms of measuring community resilience is the 'Community Resilience Manual', produced by the Centre for Community Enterprise in Canada. It states its definition of a resilient community as "one that takes intentional action to enhance the personal and collective capacity of its citizens and institutions to respond to, and influence the course of social and economic change" (CCE 2000:1). The manual offers a "diagnostic tool that could efficiently and effectively help communities up to a size of 30,000 assess their own state of resilience" (Cowan et al. 2008:1). It seeks to familiarise communities with the concept of resilience, enable them to assess their degree of resilience, support them in making decisions using a 'community portrait' and

then to enable the creation of a community plan. It identifies 4 dimensions of resilience (people, resources, organisations and community process), and 23 characteristics of resilience (see Table 2.2).

People

- Leadership is representative of the community
- Elected community leadership is visionary, shares power and builds consensus
- Community members are involved in significant community decisions
- The community feels a sense of pride
- People feel optimistic about the future of the community
- There is a spirit of mutual assistance and cooperation in the community
- People feel a sense of attachment to their community
- The community is self-reliant and looks to itself and its own resources to address major issues
- There is a strong belief in and support for education at all levels

Organizations

- There is a variety of community economic development (CED) organizations in the community such that the key CED functions are well-served
- Organizations in the community have developed partnerships and collaborative working relationships

Resources

- Employment in the community is diversified beyond a single large employer
- Major employers in the community are locally owned
- The community has a strategy for increasing independent local ownership
- There is openness to alternative ways of earning a living and economic activity
- The community looks outside itself to seek and secure resources (skills, expertise and finance) that will address identified areas of weakness
- The community is aware of its competitive position in the broader economy

Community Process

- The community has a Community Economic Development Plan that guides its development
- Citizens are involved in the creation and implementation of the community vision and goals
- There is on-going action towards achieving the goals in the CED Plan
- There is regular evaluation of progress towards the community's strategic goals
- Organizations use the CED plan to guide their actions
- The community adopts a development approach that encompasses all segments of the population.

Table 2.2. Characteristics of Resilient Communities. (Source: Cowan et al. 2008)

The manual also includes a detailed questionnaire and the tools to process the findings to generate a resilience assessment. It was used widely, and much praised, although its definition of resilience focused almost exclusively on economic aspects.

Writing in 2008, the authors of the Manual identified the strengths and successes of the original document, but wrote that "it is becoming increasingly apparent that it does not adequately encompass some key challenges that communities face. From the CCE's perspective, the cross cutting phenomena of climate change, peak oil, food security and water sufficiency will greatly impact on communities, however, the implications of these interconnected issues have not been fully explored" (Cowan et al. 2008:7).

2.6.6. Resilience and Communities

I now narrow the focus from the broader concept of resilience to its application on the scale of community. In the literature, the terms 'social resilience' and 'community resilience' are used fairly interchangeably. However, definitions are varied and unclear, but then the term 'community' is, as many authors have pointed out, equally riddled with difficulties and complexities. As Kumar (2005) identified, the term community can refer to a group of people which comes together in physical, environmental, economic, relational, political or social ways. For Kelly (2000), modern communities were not fixed, rather they tended to develop on an ad hoc basis according to the needs, desires and goals of their members.

The concept of resilience cannot be translated, unaltered, from ecology to the social sciences, but the linking of the two has emerged from various disciplines,

including human geography (Zimmerer 1994). One of the key differences identified by Adger & Brown (2008:119) is that adaptation by people, as opposed to that of biological systems, can involve significant foresight, allowing people to adapt "in anticipation of expectation of change". Adger, (2000:348) argued "the concept of resilience has not effectively been brought across the disciplinary divide to examine the meaning of resilience of a community or a society as whole. Is resilience a relevant term for describing communities? Is there a link between social resilience and ecological resilience?" Gunderson (2009:1) observed that human communities can be viewed in many of the same ways as ecosystems, as complex, adaptive systems. They are, he wrote, "not easily understood or analysed, but are characterised by emergent properties, self organisation, historical patterns of abrupt, non-linear change and unpredictable dynamics".

Adger et al. (2002:358) defined social resilience as "the ability of a community to withstand external shocks and stresses without significant upheaval" while Luthar & Cicchetti (2000:1) defined it as "a dynamic process encompassing positive adaptation within the context of significant adversity." One of the important qualities of social resilience, according to Adger (2000), is that it is defined at the community level rather than the individual level. He explicitly linked the term to the social capital of societies and communities.

For Adger et al. (2002:358), a resilient community is one that has "a resilient and accessible resource base and a dynamic range of viable livelihoods and responsive institutions – they may be able to absorb ... shocks, and even respond positively to them". They also, importantly, note that vulnerability may

well not be uniform across any given community. While there is little literature that links concepts of social resilience to peak oil, Tompkins & Adger (2004:unpaginated) argued that "in the context of climate change, social resilience is the ability of groups or communities to adapt in the face of external social, political or environmental stresses and disturbances".

Is it actually possible to separate resilience from the empowerment and involvement of communities? Adger (2003:3) believed not, arguing "resilience also requires communities and societies to have the ability to self-organise and to manage resources and make decisions in a manner that promotes sustainability". The UK has its government-led Resilience Programme, which seeks to co-ordinate emergency service responses (see 2.6.9.), noting that "broad-scale, community involvement is not part of the UK government's resilience strategy" Manyena (2006:438). This was also picked up later in the DEMOS 'Resilient Nation' paper.

Identifying the main qualities of social resilience, Tompkins & Adger (2004:unpaginated) defined them thus; "to be resilient, societies must generally demonstrate the ability to (1) buffer disturbance, (2) self-organize, and (3) learn and adapt". Landau (2007:352) defined community resilience as "the community's inherent capacity, hope and faith to withstand major trauma, overcome adversity, and to prevail, with increased resources, competence and connectedness". Coaffee (2008:4633) argued, "in particular, the concept of resilience is increasingly used to describe how cities and regions are attempting to embed security and risk management features into their built environment and their systems of governance as part of a broader drive towards more 'safe'

and sustainable communities". A key element of resilience, and one picked up centrally by Transition initiatives (Hopkins 2008) is the need for its intentional design. Reeder (2009:76) observed that "building resilience will not happen without an informed intent to develop measures of resilience, to anticipate and plan for future shocks, and to retain healthy levels of personal, organisational and societal functioning".

2.6.7. Government Views on Resilience

Various publications from the UK Government are increasingly exploring the term resilience, and increasingly in relation to climate change, although Government denial of peak oil as an issue means that it is never conflated with resilience. The Cabinet Office runs 'UK Resilience' as a network for emergency planners, with the aim of reducing "the risk from emergencies so that people can go about their business freely and with confidence" (Cabinet Office 2009:unpaginated). Part of its operation is the existence of 'Regional Resilience Teams'. Their main role is to draw together a range of organisations "to prepare to deal with a variety of emergencies, natural and man-made, to minimise the impact on people, property and the environment" (GOSW 2010:unpaginated). In accordance with the 2004 Civil Contingencies Act, they define an 'emergency' as;

- An event or situation which threatens serious damage to human welfare in a place in the United Kingdom
- An event or situation which threatens serious damage to the environment of a place in the United Kingdom
- War, or terrorism, which threatens serious damage to the security of the United Kingdom (ibid).

Clearly as a Government, the interpretation of resilience in the context of emergency preparedness is appropriate, but there are also other areas where the term is used, most often in relation to food. A report on the resilience of the English food chain produced for DEFRA in 2006 (Peck 2006) challenged the interpretation of resilience proposed by this research. It suggested that resilience was actually *enhanced* by the flexibilities of the just-in-time distribution model, although it did also acknowledge risks. A second paper for DEFRA published in the same year again argued that broadening the sourcing of food was the key to resilience. "The flexibility that increasingly characterises modern supply chains – including food – is crucial to their resilience" (DEFRA 2006:59). A discussion paper produced by the Cabinet Office in 2008 again restated this interpretation. It argued that resilience is strengthened by increased diversity of sourcing, rather than the building of indigenous food production: "Resilience is a more productive focus for food security concerns than self-sufficiency" (Cabinet Office 2008:15). This concept of resilience through diversification is a cornerstone of neo-liberal economics. The idea of promoting food self-sufficiency is equated with protectionism and although much has been written about how a lower energy world could arrange its energy supplies and living arrangements, no-one has yet to coherently argue how a lower energy, post-peak oil world will be able to feed itself without the distances between consumer and producer being radically shortened, i.e., a significantly increased degree of economic relocalisation. 5.3. will explore in more detail the practicalities of rebuilding more localised food economies, as well as the argument that a more localised food system is likely to be a more resilient one.

More recently however, the debate has started to move. In 2009, DEFRA published its 'UK Food Assessment' (DEFRA 2009a), which identified the complex food chain, its infrastructure and its dependence on energy supplies as a 'headline indicator' of UK food security. A companion paper examining DEFRA's approach to food security reinforced the idea of diversity of supply and of emergency preparedness, and restated that the UK "should not base our food security policy on the pursuit of self sufficiency" (DEFRA 2009b:8), fearing the growth of protectionism. A draft policy on food security and the environment produced by Natural England in 2009 again argued this point, "a diversity of supply chains will strengthen resilience in the food system, as it enables greater flexibility and adaptability when responding to external shocks" (Natural England 2009:12). However, it did also add that it saw local food production as having a key role to play, and stated that "sufficient land needs to be made available to local communities to enable them to participate in sustainable food production" (ibid:3).

The UK Low Carbon Transition Plan, published by the Department of Energy and Climate Change in 2009, used the term 'resilience' just four times, and, although placing climate change centrally to its concerns, rejected the idea of peak oil in a sentence, "the immediate risk to oil production is not how much oil is left in the ground, but the world's ability to convert these reserves into production now and in the future" (HMG 2009:148). The UK Government is still some way from the interpretation of resilience explored in this thesis, and has yet to make an explicit link between energy security and food security.

2.6.8. Case Studies of Community Resilience

This case study-based research focuses on the attempts of TTT to make Totnes more resilient to peak oil and climate change. What insights might be gleaned at this stage from other studies that might offer some illumination into resilience in practice at the community level? A study by Brown et al. (2005) looked at the management of coastal resources in the light of climate change in the Orkney Islands. The findings, through various research methods including focus groups, identified a high degree of adaptive capacity and the residents' positive perceptions of the island's autonomy and potential for self-organised local development (Adger & Brown 2008). Residents interviewed saw the threat of climate change and its impacts as an opportunity to create independence and sustainability, which the researchers identified that Orkney society already demonstrates many of the attributes and qualities one would expect to see in a resilient society. Reflecting on the Orkney study, Adger & Brown (2008:115) state "in general, we can say that resilient communities are promoted through integrating features of social organisation such as trust, norms and networks". One might also observe that island communities are already highly likely, through their enforced isolation, to be more resilient than mainland communities, although some of the insights obtained may well still be of use.

A study by Paton et al. (2001), found that following the volcanic explosion at Mt. Ruapehu in New Zealand, self-efficacy and a sense of community were found to be good predictors of community resilience and increased capacity to respond to sudden change. The study recognised that social relationships are an important factor which enhances resilience. A study by Tobin and Whiteford (2002) similarly looked at the effect on community resilience of a volcanic

eruption, this time Tungurahua in Ecuador. Their findings challenged those of Paton et al, arguing that a principal factor in resilience is the non-compromising of community health. They argued that the process of evacuation, and the failure to tackle health issues at an early stage had detrimental effects on resilience. They concluded that in the case of an evacuation, community resilience is best enabled by focusing on early health problems and maintaining good levels of health, for example using nutritional supplements for families and children, ensuring emotional support by allowing families to evacuate together and relocating families to environments similar to those from which they were evacuated.

A number of writers (Bravo et al. 1990, Schwartz et al. 1994, Kreps 1984, Holman & Silver 1990) suggest that exposure to disaster and adversity can lead to personal, community and professional growth and development, but Paton and Johnston (2001) argue that this ought not be seen as dismissing the very real impacts arising from community loss and the disruption caused by disaster. One important element identified by Bishop et al. 2000 and Millar et al. 1999 is the role of community activities and functions. As Paton and Johnston (2001:274) argued, "the more people who are involved in community activities that engender a sense of community, efficacy and problem solving, the greater will be their resilience to adversity". For them, the key elements that underpin community resilience, drawing from a range of studies of communities exposed to toxic waste, salinity and volcanic and earthquake hazards, (Bishop et al. 2000, Lindell & Whitney 2008) suggest that the elements key to community resilience are efficacy, coping, a sense of community and the support constructs that are put in place.

2.6.9. Resilience as an Opportunity/Adaptive or Transformational Resilience

There is an increasing argument, of central relevance to this study and to the Transition concept, that addressing resilience is not just about preserving systems as they are, and retaining their existing functions. Given human communities' ability to anticipate change, and given the inevitability of some of the changes facing humanity (peak oil and climate change especially), there is also a great opportunity for innovation. Folke (2006:253) wrote that "in a resilient social-ecological system, disturbance has the potential to create opportunity for doing new things, for innovation and for development".

Maguire & Cartwright (2008:4) put it thus, defining social resilience as "the capacity of a community to respond to a change *adaptively*. Rather than simply returning to a pre-existing state, this can mean changing to a new state that is more sustainable in the current environment". This approach is referred to as the 'transformational view of resilience', which is concerned with renewal, regeneration and reorganisation. For Walker, this translated into a radical rethink of much of current thinking and practice; "we need a resilient food system, resilient energy systems, water and transport systems, resilient cities and health and education systems" (Walker, 2009: in Cork 2009:3).

Cowan et al., in their re-evaluation of the Community Resilience Manual (see 2.5.5 above) also focused on the opportunity inherent within addressing resilience:

"[H]elping regions and communities regain control over essential processes such as food and energy production and distribution systems

need to be seen as vital adaptation strategies to community resilience. Smaller, re-localised economies within a bioregional context are a likely outcome and how a more 'local-regional economy' is modelled and replicated will become increasingly important areas for research and practice. Indeed, forward-thinking communities who take advantage of their adaptive capacity will tend to be much more resilient to impending economic shocks brought on by peak oil and climate change. ... this process can occur while gaining simultaneous benefits, such as gaining superior nutrition, reducing carbon emissions and fossil fuel dependency by shortening the length and energy intensity of supply chains, conserving fuel from transportation and so on" (Cowan et al. 2008:8).

For Maguire and Cartwright (2008:5), "viewing resilience as transformation also draws the focus to the adaptive capacities of a community – the characteristics which enable it to develop and innovate in response to a change – rather than its vulnerabilities". Gunderson et al. (2009:235) similarly identify nine recommendations for the fostering of social learning through adaptive assessment and management, which also offer a very interesting lens through which to view the success or otherwise of Transition initiatives in building resilience. These are; embrace complexity and change, focus on sources of uncertainty, design processes to resolve uncertainty, create a 'safe to fail' system, create arenas for discourse, develop learning networks, seek peerless leaders, 'scale is important' and invent creative solutions. For the Transition movement, it is crucial that the concept of resilience be framed, away from preparedness for short-term, high impact disasters, and towards seeing it as a desired state, key to the realisation of a truly sustainable and low carbon economy. Much of the resilience literature gets no further than suggesting that such a reframing might be beneficial: the Transition movement has, in effect,

been a four year experiment in what such a take on resilience might look like in practical application.

2.7. Energy Descent – a Crisis or an Opportunity?

2.7.1. Introduction

Section 2.3. showed that the potential impacts of peak oil are complex and contain many unknowns and uncertainties. The literature reflects a wide range of opinions as to the impacts of peak oil on society. While much of the literature on peak oil suggests it to be a potentially catastrophic event, this section will now look at those who suggest that the results could be beneficial, even positive. First to suggest that peak oil might represent an opportunity as well as a crisis was Hartmann (1999:302), who wrote that peak oil could result in “a brighter, more meaningful and more joyous future”.

Winter and Kroger (2004) believe that focusing on potential disaster reduces the collective ability to respond. They continue;

“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” (Winter and Kroger 2004:18).

This focus on the negative is seen by some (Canty 2005) as dangerous, leading to psychological problems. Oskamp (2000:383) sees a basic difficulty in promoting environmentally responsible behaviour being that the problems we seek to address “stimulate fear, and ... essentially people don't like to think

about fearful topics, ... they frequently repress or deny such information". There is an argument, however, that fear can be a trigger for change. Oskamp continues; "research studies on appeals to fear have shown that they are most likely to change people's behaviour under two conditions: (1) if people are aware of clear steps they can take to protect themselves, and (2) if these steps are conveniently available" (ibid:383).

Macy and Brown (1998) describe the scale of change required in this transition to a sustainable society as 'epochal', and continue "while the Agricultural Revolution took centuries, and the Industrial Revolution took generations, this ecological revolution has to happen within a matter of a few years. It also has to be more comprehensive – involving not only the political economy, but the habits and values that foster it" (Macy & Brown 1998:17).

Section 2.3 argued that the world stands on the brink of 'energy descent' the end of the age of cheap oil, and all that that has made possible. The new UK Government's 'Big Society' agenda, which seeks to devolve power to local communities where possible, has come to dominate debates around government policy. One of its architects, Blond (2010b) told a conference in June 2010 that community groups need something to associate with, a big idea to form around. The experience of Transition initiatives is that peak oil, or energy descent, when reframed as a desirable state, in some communities at least, is acting as that 'big idea', enabling what Hajer (1995) conceptualises as a "discourse coalition". Transition goes beyond the 'Big Society' to look at the practicalities of relocalisation: this tension between *localism* and *localisation* is explored in more depth in 6.3.1.

2.7.2. Relocalisation as a Response to Peak Oil

For many writers, a radical relocalisation of the economy and every aspect of life is an inevitable outcome of peak oil. The future, Kunstler (2005:239) argues, will be "increasingly and intensely local and smaller in scale". Localisation is not a concept exclusive to peak oil theorists. As will be seen in 2.6.3, a range of arguments for more small scale, self-reliant and localised economies have been around for some time. Peak oil has added new momentum to these calls. Fleming (2006b:118) elucidates this argument thus;

"The transition to localisation from the global interdependence of today will be hard to achieve successfully, although it will be enforced by the breakdown of the world's energy systems and food supply. Achieving it successfully will mean establishing local political economies with an intelligence and cultural existence well in advance of the incoherent, growth-dependent and locally-atrophied market economy of our day. Doing so unsuccessfully would mean failing to build local competence of any kind, so that neither the place nor the people survive the breakdown of the global market economy which the serial traumas of energy, food, climate and social deconstruction will bring".

Ultimately, Heinberg (2004:140) writes, "personal survival will depend on community survival", that is, individual self-sufficiency will not be a viable response to a problem of this magnitude. The first place to start in exploring the re-prioritisation of the local is with the concept of localisation.

2.7.3. Localisation

This thesis sets out to explore how, in response to peak oil and climate change, the town of Totnes might practically begin to make itself more resilient through a

process of 'intentional localisation' (North 2010a). So how might the term 'localisation' be defined? Norberg-Hodge (2003:24), defined it thus;

"the essence of localisation is to enable communities around the world to diversify their economies so as to provide for as many of their needs as possible from relatively close to home... this does not mean eliminating trade altogether, as some critics like to suggest. It is about finding a more secure and sustainable balance between trade and local production".

Localisation is not a new idea. Woodin and Lucas (2004:69) traced arguments for economic localisation back to Keynes, who said in 1933;

"I sympathise, therefore, with those who would minimise, rather than those who would maximise, economic entanglement between nations. Ideas, knowledge, art, hospitality, travel – these are the things that should of their nature be international. But let goods be homespun whenever it is reasonable and conveniently possible, and above all, let finance be primarily local".

Kohr's (2001:1) 'theory of size', suggested "that there seems only one cause behind all forms of social misery: bigness". Schumacher argued in favour of a higher degree of self-reliance and self-sufficiency (Vergunst 2002), not, as is sometimes misrepresented, for keeping everything as small as possible, believing, as is set out in Table 5.1, that for each economic activity there is an appropriate scale (Schumacher 1974:54). For Hines (2000a), the role of government in facilitating localisation is the creation of a policy and economic framework which enables communities to diversify their economies (this issue

of the role of policy and governance will be explored in more detail in Chapter 6).

Shuman (2000:46) dispensed with the term 'localisation', preferring instead 'community self-reliance'. He wrote that "it suggests personal responsibility, respect for others, and harmony with nature...addition of the word 'community' to self reliance underscores that the ultimate objective is a social and caring one". The term self-reliance was previously utilised by Ekins (1989) who argued that it offers a key to creating sustainability;

"By producing what we consume and consuming what we produce, rather than doing either through exchange, by definition we keep the externalities, positive and negative, for ourselves. The justification for so doing is clear: we will enjoy the positive externalities, rather than giving them away, and at the same time will be responsible ourselves for the negative externalities" (ibid:101).

None of the above argues for isolationism, or for *self-sufficiency*. Localisation is often lazily dismissed as being about isolation and a turning away from the rest of the world. Shuman stated that the intention of localisation is not the creation of what he calls a "Robinson Crusoe economy" (2000:48) (where nothing comes in and nothing leaves). Rather, he stated, the intention is for a community to gain as much control over its own affairs as possible, a concept increasingly advocated, in principle at least, in the new UK government's 'Big Society' concept (explored in more depth in Chapter 6), although this stresses increased control over governance, rather than the shift of economic focus sought by localisers (the focus on *localism* rather than *localisation* explored in more depth in 6.3.1).

Voices in favour of localisation emerge from disparate perspectives. Critics of globalisation point out that it is environmentally destructive (Retallack 2003), has disastrous effects on indigenous farmers in the developing world (Shiva 1998, 2001), promotes cultural homogeneity (Barnet & Cavanagh 2003), contributes to climate change (Sobhani & Retallack 2001), erodes biodiversity (Shiva 1993), creates inequitable trade models (Shiva 2005) and promotes a colonial model of development (Goldsmith 2001).

An important question to address at this point is the connection, posited in the title of this thesis, between the concepts of resilience and of relocalisation. Why resilience might be best promoted through a process of intentional localisation? It is fair to say that this thesis is breaking relatively new ground in making this connection, and little in the way of academic literature precedes it (other than Haxeltine & Seyfang 2009, North 2010, Bailey et.al. 2010), although some more popular publications have explicitly made this connection (e.g. Hopkins 2008, Cork 2009, Heinberg & Lerch 2010). For Rees (2010:38) "development strategies must abandon efficiency and maximisation as primary goals in favour of social equity and ecological sustainability". In practice, he argues, this means reducing regional dependence on imported resources. In this, he echoes North's (2010:1) assertion that rising or volatile oil prices will lead to a situation where "the currently near will become further away again, in a process of 'reverse globalisation'". Rees (2010:38) adds that "resilient communities will develop policies that favour greater regional self-reliance, including mechanisms for import displacement when this is ecologically sound". In this

sense, the link between resilience and relocalisation would appear to have a logical, albeit contested, foundation.

Haxeltine and Seyfang (2009), in a detailed and critical analysis of how the Transition movement interprets the concept of resilience, note, based on their observation, that Transition initiatives are “trying to frame actions in terms of the building of resilience but relying heavily on equating resilience with a relocalisation of production-consumption patterns” (ibid:14). They are critical of an unquestioning acceptance of the idea that resilience equates with relocalisation, arguing that “building resilience involves experimenting with the optimal, or most desirable, spatial scales for the production and consumption of goods and services” (ibid:19). However, it is worth noting that Haxeltine and Seyfang’s interpretation, i.e. that Transition promotes the idea of a form of relocalisation that has more in common with self-sufficiency, was based on the very early ‘resilience indicators’ set out in the Transition Handbook. This thesis sets out a more nuanced and complex take on relocalisation, for example as is set out in Table 5.1, and I would argue, therefore, that their criticism that Transition “equates resilience with ... (re)localisation in a rather unreflexive manner” (ibid:19) is now a largely outdated take on the Transition concept. Their paper does, however, raise an important critique relating to the linking of resilience and relocalisation.

They argue that “equating localisation directly with resilience risks making a community more vulnerable to certain future shocks and disturbances” (ibid: 19). Their argument is that community-wide strategies for addressing peak oil and climate change might, in practice, lead to the community becoming less

resilient to other less predictable, and perhaps more sudden, crises. This argument will be explored as this thesis progresses, but it is reasonable at this stage to note that most of the literature on resilience fails to explore the subject in the context of peak oil and climate change, and so therefore the resilience/relocalisation connection is one being explored in a fairly groundbreaking way in this thesis.

2.7.4. Critics of Localisation

Some are critical of the concept of localisation, believing it completely unnecessary (Beckerman 1995) or having a potentially disastrous effect on the economies of developing countries (Monbiot 2005). Monbiot argued that localisation is “coercive, destructive and unjust” (Monbiot 2003:unpaginated), 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” (ibid). He proposed that poorer nations be allowed to trade under fairer terms, because the localisation approach “damages precisely those interests (it) seeks to protect” (ibid). Woodin and Lucas (2004:82) responded;

“to prevent this injustice arising, localisation must demonstrate that trade is not the only means of transferring resources from rich to poor countries ... the developed world must radically reorient its approach to development aid and debt so that sufficient resources are transferred to the South to give it the opportunity to create the resilient, self-reliant local economies that will lift its people out of poverty”.

Hinrichs (2003) argued that what she calls ‘defensive localisation’ can lead to the emergence of undesirable separatist politics. In this event, she argued,

"localisation becomes elitist and reactionary, appealing to narrow nativist sentiments" (Hinrichs 2003:37). This tension between 'reflexive' and 'unreflexive' localism will be further explored in 5.3.1. Monbiot added that localisation can never be effective because "local solutions will always be undermined by communities of interest which do not share our vision" (Monbiot 2003:12). He argued that rather than relocalising the economy, we should instead rethink and revitalise global politics, in order to "establish the political space in which our local alternatives can flourish" (ibid). It should be noted, however, that none of those arguing against localisation have yet discussed the impacts peak oil may have on international trade, fair or otherwise.

2.7.5. The Transition movement as a positive response to energy descent

At this point, in setting out the key concepts that will underpin this thesis, it would be useful to offer an introduction to the Transition concept, which will be subsequently be explored in its Totnes manifestation. The Transition model is intended to be a practical, community-led response to peak oil and climate change, exploring the practicalities of relocalisation. It began to emerge in Totnes in early 2006, firstly with Transition Town Totnes (see 4.5), and then with increasing interest from other communities. This interest led to a formalisation of the Transition model (see Table 2.3), as expressed in 'The Transition Primer' (Brangwyn 2009), a freely available document, and also in the author's 'The Transition Handbook' (Hopkins 2008). Transition has, from the start, been an iterative process, drawing inspiration from a wide and eclectic range of sources. These include the fields of psychology, the study of addiction (DiClemente 2003), the 'wiki' approach to collaborative information building (Leadbeater 2009), the 'leaderless organization' approach (Brafman &

Beckstrom 2008), resilience science (Walker & Salt 2006), insights from how self-organisation works in natural systems (Maturana & Varela 1992), 'despair and empowerment' work and ecopsychology (Brown & Macy 1998), 'learned optimism' (Seligman 2006), the science of happiness (Layard 2006), the concept of 'pattern languages' (Alexander 2007), the power of the internet to enable ideas to spread virally (Shirky 2009), Chaordic organizational design (Hock 1999) and the design-led permaculture concept (Mollison & Holmgren 1990, Holmgren 2003). Transition is presently taught and communicated through the "12 Steps of Transition" (Hopkins 2008), as set out in Table 4.2., although it is, at the time of writing, being re-conceived as a 'pattern language'³ (Alexander 1977).

1. Set up a Steering Group and Design its Demise from the Outset
2. Raise Awareness
3. Lay the Foundations
4. Organise the Great Unleashing
5. Form Groups
6. Use Open Space
7. Develop Visible Manifestations of the Project
8. Facilitate the Great Reskilling
9. Build a Bridge to Local Government
10. Honour the Elders
11. Let it go where it wants to go
12. Create an Energy Descent Plan

Table 2.3. The 12 Steps of Transition (Source: Hopkins 2008:148-175)

³ Alexander describes a pattern as "a careful description of a perennial solution to a recurring problem within a building context, describing one of the configurations which brings life to a building. Each pattern describes a problem which occurs over and over again in our environment, and then describes the core solution to that problem, in such a way that you can use the solution a million times over, without ever doing it the same way twice

Transition initiatives are based on 4 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 settlements and communities presently lack the resilience to enable them to weather the severe energy shocks that will accompany Peak Oil.
3. That we have to act collectively, and we have to act now.
4. That by unleashing the collective genius of those around us to creatively and proactively design our energy descent, we can build ways of living that are more connected, more enriching and that recognise the biological limits of our planet" (Hopkins 2008:134).

From its beginnings in Totnes, there are now over 300 'formal' Transition initiatives (Transition Network 2010), and thousands at the earlier 'mulling' stage (ibid). There are national networks in Australia, New Zealand, the US, Italy, Sweden, Ireland, Germany and Scotland. Transition Network Ltd was set up in late 2007 to "inspire, support, encourage, network and train" this rapidly growing movement (Hopkins & Lipman 2009:15). Since its establishment it has developed innovative web tools for enabling the sharing of ideas across the world (Mitchell et al. 2009), made a film, 'In Transition', produced several books (Hopkins 2008, Chamberlin 2009, Pinkerton & Hopkins 2009, North 2010b), and runs an annual conference, the 2009 event attracting then-Secretary of State for Energy and Climate Change Ed Miliband as a 'keynote listener'. The way Transition Network is structured is designed to enable maximum autonomy for local groups (see Hopkins & Lipman 2009).

In 2009, Gill Seyfang of the University of East Anglia, did a survey of the 'formal' Transition initiatives in the UK. Conducting her survey in February 2009 when there were 94 UK initiatives, she opened her report by acknowledging that there

had, until that point, been “very little empirical research” (Seyfang 2009b:2) into the success or otherwise of Transition initiatives. Her survey, conducted online, and responded to by 74 initiatives (a 78.7% respondent rate), offered a very useful snapshot of the UK movement in 2009. The report summarised its findings thus:

- Establishing Transition groups and maintaining momentum are big achievements for volunteer community activists, and managing the dynamics of voluntary groups is not a trivial issue. Support and training in group management and conflict resolution would be a welcome addition to the training available;
- There is a limit to how much support or interest can be gained using awareness raising strategies as a starting point. Attracting people to join in practical projects might be a more effective way of building community engagement;
- Transition initiatives struggle to achieve a lot, with limited resources, and would benefit from funding (financial or in kind) from other organisations to support their activities. Many have links with local government and there is clearly a role here for local councils to support (not direct or lead) Transition initiatives in their work;
- Food and gardening projects are far and away the most popular practical ways for Transition initiatives to start engaging people in hands-on action. Local councils could promote these activities by offering more land for allotments and community gardens, as a first step to wider community engagement in sustainable development. (Seyfang 2009b:14)

Other academics and researchers are working on analyses of Transition, but as yet, Seyfang's is the most thorough. For Balls (2010), Transition can be conceptualized as a ‘discourse coalition’ (after Hajer 1995), which draws people together from a wide range of interest areas to focus around “a single symbolic focusing discourse” (Balls 2010:34). There have been two in-depth studies on

Transition initiatives, one focusing on Transition Norwich (Seyfang 2009d) and one on Transition initiatives in Dorset (Höynälänmaa 2010). Both offer very useful insights into Transition in particular settings, the Dorset study concluding that “although a young movement, the Transition Movement has clearly established a strong network of motivated and enthusiastic Initiatives in Dorset and shows great potential for growth and development” (Höynälänmaa 2010:53).

2.8. Lessons from Behavioural Studies.

2.8.1. Introduction

The scale of the challenge of peak oil has been clearly defined above. Given the focus of this thesis, the questions now arise, how do communities change and how can that be facilitated and accelerated? Jackson (2005) observes that behavioural change is fast becoming a kind of ‘Holy Grail’ in the area of developing sustainable consumption policies. This section will examine the literature on motivating sustainable consumption and studies that have explored why people alter their behaviour in order to live more sustainably as well as how that behaviour might be influenced.

Much research has been done into how individuals can be encouraged towards more sustainable behaviour, providing useful insights into what prompts people to change. Despite the fact that most of it relates to individuals, useful observations can be drawn of relevance on a larger scale.

2.8.2. Insights from Behavioural Studies 1: why people don’t change

Most of the research on behavioural change and sustainable consumption focuses on individuals, as understanding mainstream consumer behaviour is seen as a pre-requisite for understanding how to motivate pro-environmental consumer behaviour. Most studies reach the conclusion that change is possible but not easy. Jackson (2005:134) for example, warned against "simplistic prescriptions for change". Kollmus and Agyeman (2002:239) argue that "the question of what shapes pro-environmental behaviour is such a complex one that it cannot be visualised through one single framework".

A common starting place is the 'rational choice model' (also known as the 'information deficit' model) which still guides much existing policy. This model was described by Jackson (2005:29) thus; "the basic tenet of the model is that we behave in such a way as to maximise the expected benefits to ourselves (as individuals) from our actions". Barr (2003:227) wrote "the process of engagement is commonly seen in governmental circles as a problem of awareness: individual people simply do not appreciate environmental problems for what they are. The solution to this problem is often seen to lie in the provision of information and knowledge dissemination".

This approach has been called A-I-D-A (Awareness-Information-Decision-Action) (Jackson 2005) and assumes that the more information people have, the more likely they are to act. It is, argued MacNaghten and Urry (1998:212) "predicated on the assumption that inaction is determined by people's ignorance of the facts". Owens (2000:1142) added that "there could hardly be a clearer demonstration of the flaws in the information deficit model than the persistent refusal of the public to have their allegedly irrational conceptions of risk

'corrected' by providing them with more information". Research showed that these 'deficit' models, which assume that the only obstacle to pro-environmental behaviour is knowledge, have been proved wrong by a number of studies (Ajzen & Fishbein 1980). Indeed some (i.e. Thompson & Rayner 1998; Blake 1999; Smith et al. 1999) suggested that not only is this approach unlikely to produce the desired effects, but that it could also lead to alienation and apathy.

A UK study (Skimshire 2008) showed that although people were largely convinced about the dangers of global warming, it had led to no observable changes in behaviour, with car journeys and flights continuing to increase, an inconsistency which led Barry (2009) to conclude that while public support for green issues is strong, it is also shallow. Holdsworth (2003) examined consumer attitudes to sustainable consumption in the UK using qualitative and quantitative approaches. She observed that the two approaches yielded significantly different results. The quantitative research showed people across all social groupings to be very supportive of the principle of more sustainable modes of consumption. However, qualitative research showed that the factors influencing peoples' choices were far more complex than would first appear. The report concluded that policies promoting more sustainable consumption "need to pay greater attention to implementation and delivery so as to fit in with the demands of consumers' lives" (Holdsworth 2003:10). Among the findings in the qualitative research, those of relevance to this paper include;

- "People feel more motivated to act where they perceive a problem that affects them, but do not tend to associate what they think of as

sustainable consumption with any positive personal benefit, or tangible improvement in their quality of life”.

- “Time spent on sustainable actions is seen as requiring a sacrifice of some other activity – notably leisure or family time”
- “...they are most positive about policy measures that do not disrupt their daily routine, and where they can see tangible benefits for their household or local environment”.

The key finding was that “consumers are generally happy to act sustainably where it does not impinge on their key priorities and cause them inconvenience” (Holdsworth 2003:6), which has intriguing implications for the Transition movement which are explored in Chapter 5. Studies by Gigliotto (1992, 1994) looking at willingness to engage in pro-environmental behaviour, found that those who believe in the potential of technology and economic growth to solve environmental problems were less likely to make personal sacrifices in the name of the environment. There appears to be a paralysing mismatch of views, individuals believe that Governments should initiate change, while Governments see their role as providing information so that individuals will adapt their behaviour. This mutually re-enforcing cycle stifles the kind of response this thesis is exploring. Other obstacles to behavioural change identified by Jackson are “overcoming problems of consumer lock-in, unfreezing old habits and forming new ones and understanding the complexity of the social logic in which individual behaviours are embedded – all are pre-requisites for behavioural change” (Jackson 2005:132). By ‘lock-in’ Jackson referred to the phenomenon of people being unable to change specific behavioural patterns due to institutional factors beyond their control.

Kollmus and Agyeman (2002) argued that one key influence on engagement in pro-environmental behaviour is what they term 'locus of control'. This refers to an individual's perception of whether he or she has the ability to create change through their own actions and/or behaviour. They also found that individuals with a stronger sense of personal responsibility are also more likely to engage in pro-environmental behaviour. This is reflected by Redclift and Benton (1994:8) who argued that appeals to the collective good often fail "not because we are irrational, but because the power to make a significant difference, one way or the other, to global or even local environmental change, is immensely unevenly distributed". This 'uneven distribution' of the belief that individuals can make a difference is returned to in Chapter 5 in discussions about local food activism, but it is an important factor in determining where the Transition model is adopted and where it isn't.

2.8.3. Insights from Behavioural Studies 2: Why People Do Change

The above might suggest that changes in individual behaviour are an impossibility. However other literature argues that although not easy, behavioural change *is* possible. Jackson (2005) writes that consumer behaviours are socially negotiated, and consumer goods are observed to be a key factor in 'social conversations' contributing key aspects of our identity, social cohesion and cultural meaning. Therefore, he argues, pro-environmental behaviour change has to be a social process, substituting the important social functions these products and behaviours perform in other ways. He writes "in this context, motivating sustainable consumption has to be as much about building supportive communities, promoting inclusive societies, providing meaningful work and encouraging purposeful lives, as it is about awareness

raising, fiscal policy and persuasion" (Jackson 2005:134), very much identifying the approach being attempted by Transition initiatives, as 2.6.5 explored.

Despite arguing that community-based processes "could offer affective arenas for exploring pro-environmental and pro-social behaviour change", Jackson (2005:2) concludes that, at this point, "there is no unequivocal proof that this community-based approach will be effective and there is an urgent need for pilot community-based schemes using participatory tools". This is an area that will be explored in more depth in Chapter 7. Chawla (1998) interviewed many professional environmentalists in the US and Norway to ascertain what shaped their decisions to embrace environmental thinking and practice, and cited her findings in order of decreasing relevance:

- Childhood experiences in nature
- Experiences of environmental destruction
- Pro-environmental values held by the family
- Pro-environmental organisations
- Role models (friends or teachers)
- Education

There are other factors that have been found by researchers to increase the likelihood of engagement in pro-environmental behaviours. Kollmus and Agyeman (2002:248) found that although women generally have less extensive environmental knowledge than men, they are often more emotionally engaged, show more concern about environmental destruction, believe less in technological solutions and are more willing to change behaviours. It is interesting to note, as does Seyfang (2009b, d) that women are very highly represented in the Transition movement. Kollmus and Agyeman (2002) also note that education plays a role, arguing that the longer one has been educated, the more extensive the knowledge about environmental issues, yet,

they note, an increased education does not necessarily translate into increased pro-environmental behaviour. The high levels of education of many of those engaged in Transition is also noted in the work of Seyfang (2009:d). Finally, Kollmus and Agyeman (2002:244) observe that people who have "satisfied their personal needs", what Inghart (1971) terms 'post-materialists', are more likely to engage in pro-environmental behaviour because they have access to more resources and so care more about bigger, less personal issues. These elements of pro-environmental behaviour will inform the analysis of this thesis.

2.9. Conclusion.

Although there is still debate about peak oil and the extent to which it can be said to be an imminent challenge to the global economy, this chapter has drawn from a wide body of literature to argue that it is a very real and pressing concern. When this researcher began this research, forecasts for peak oil stretched out many years into the future, often beyond 2030. In the intervening years, forecasts have moved steadily forward, and many recent reports suggest that peak oil is set to occur sometime between 2010 and 2015 (see 2.3). For an economy such as the UK, whose own indigenous energy reserves are declining sharply, this represents a grave challenge. Climate change was also explored, and given that a consensus already exists on this subject, the focus instead was on the more recent science, which provides a challenge to government emissions cuts, arguing that the world's climate has already passed certain climate 'tipping points'.

It then looked at the literature about resilience, suggesting that much of the current literature focuses on resilience as the ability of a system to resume its

original function following a disturbance, but a growing body of thought is suggesting that a more healthy approach is to be more proactive, and building resilience can be seen as an opportunity for development and growth. This chapter then explored whether 'energy descent', the inevitable decline in cheap and easy energy and in net energy, could be reframed as an opportunity, rather than a crisis. Then it explored the literature of localisation, which has a long history, but which has, until recently, been seen as something which is somehow collectively chosen in preference to globalisation, whereas, it was argued here, it could instead be reframed as the inevitable result of a decline in net energy, especially in relation to the decline in availability of liquid fuels required for transportation. The Transition approach was then introduced, its origins, inspirations, its approach and the current state of its development as a movement, and finally the literature around change was explored, in an attempt to see what lessons can be learnt about what aids and what prevents change, in relation to environmental behaviour, at the level of both communities and individuals.

Chapter 3. Methodology.

3.1. Introduction

Using the town of Totnes (Devon, UK) as a case study, the aim of this study is to analyse whether and how resilience can be promoted in a locality based on processes of relocalisation, and to assess the socio-economic and community-related structures necessary to pursue such a relocalisation process. The study has five key objectives:

1. To analyse constraints and opportunities for the adoption of relocalisation and resilience in Totnes. Specific emphasis will be placed on whether and how this *could* be achievable in the context of Totnes (i.e. the practicalities of achieving economic localisation), whether current *community and governance structures* would enable and facilitate such relocalisation processes, and which *stakeholder groups* would be empowered or disempowered by such processes. The study utilises a multi-methods approach, including less conventional research methods, such as the conceptual tools advocated by Owens (2000) both for public participation (e.g. 'Open Space' and 'World Café') and use in facilitating community 'brain storms' and as methods for enabling community envisioning of a relocalising process.
2. To assess the suitability of Heinberg's (2004) framework – in particular exploring the conceptual space between his 'powerdown' and 'building lifeboats' approaches – as a tool for facilitating a response to the challenge presented by peak oil in Totnes.

3. To develop an empirically-based behavioural model by which communities can be *actively engaged* in a process of relocalisation of energy descent pathways, and in measuring their success or failure in building resilience. Using theoretical approaches grounded in behavioural approaches (see above), the study will particularly explore existing models of what produces environmentally responsible behaviour, both at individual and community level.

4. To explore the potential role of social enterprise in achieving relocalisation and resilience, and whether this might turn out to be a more fruitful approach than the more conventional activist approach of campaigning and lobbying.

5. At a broader level, to examine whether and to what extent lessons learned from the Totnes case study can inform similar debates on energy descent pathways in other localities.

3.2. Aims of this Chapter.

This chapter sets out the proposed methodology for this research. The approach taken here will be a multi-method strategy, using mostly qualitative methods, in order to ensure triangulation. Firstly this chapter will explore why a case study approach is preferred, and will then introduce the setting for this case study, the Devon town of Totnes. The strengths and weaknesses of Totnes as a basis for study will be explored, as well as some of the limitations and how they have been overcome or compensated for. The next section

explores the role of combining methods, and the pros and cons of the multi-method approach. This is followed by an evaluation of the five principal methods proposed, quantitative surveys, oral history interviews, intensive interviewing, focus groups and participatory tools such as Open Space Technology. Each of these will be explored firstly in terms of defining what the approach is and how it works, then its limitations, and then how it has been practically applied to this research. The next section looks at how the data generated by these methods has been analysed, and then issues of reliability and validity will be explored.

3.3. Case Study Approach.

A case study is, in essence, concerned with the detailed examination of a single case, from which extrapolations of wider significance can be drawn. Although it is more commonly associated with qualitative research approaches, it can also be used in quantitative research (David & Sutton 2004) (the distinction between the two is explored in 3.4.1). A case study usually takes one case over a period of time, and can take a variety of forms, such as longitudinal surveys, regular interviews or any of a range of research tools that allow the researcher to observe evolution or changes in the case in question over a given period of time. David and Sutton (2004) argue that key to an understanding of what a case study is, is the definition of the term 'case'. They state that "a case could be an individual, an organisation, an institution, an event or a geographical area" (ibid:135).

Strictly speaking, by definition, a case study is research that is non-comparative (ibid:358). Case studies are a distinct area of research. They differ from

experiments in that they are not carried out in isolation, or laboratory conditions, and they differ from surveys in that they are designed to focus on one particular case rather than a broad range.

3.3.1. An Introduction to Totnes – the basis for this study.

Totnes is a town of about 9,000 people in South Devon. It was one of the five Devon towns mentioned in the Domesday Book, and during Medieval and Tudor times was the second wealthiest town in Devon (Exeter being the first). Much of this wealth was built on the export of wool from Dartmoor and locally mined tin. Its unique architectural heritage, recognised by English Heritage and the Civic Trust, derives from that wealthy past, and is ironically a large part of the draw of the town for modern-day tourists, now one of Totnes's main industries (a more detailed history of the town can be found in Appendix 5).

Totnes is now a small but vibrant market town, recently voted by Highlife magazine as one of the world's 'Top Ten Funky Towns'. Politically Totnes comes under the jurisdiction of South Hams District Council (SHDC), and in the 2010 General Election returned a Conservative Member of Parliament. It has rail and road links to Plymouth (27 miles to the south-west) and Exeter (27 miles to the north east), the majority of its population working either in Plymouth or Torbay (7 miles to the east). It has one of the highest levels of elderly people living on their own anywhere in the country.

The landscape surrounding Totnes is mostly an Area of Great Landscape Value, and the South Devon Area of Outstanding Natural Beauty extends to the southern edge of Totnes town. Totnes has been shaped over the years by

various initiatives which, in turn, have attracted other initiatives, leading to Totnes being seen nationally as a unique cultural centre (see 4.4). Foremost in this regard is the Dartington Hall Trust⁴, set up in 1925 by Dorothy and Leonard Elmhirst as a radical experiment in rural regeneration involving the arts, heritage and culture (Young 1996, Cox 2005). At its peak before the Second World War, Dartington was an innovative model of a rural renaissance, combining arts, social enterprise, education, a sawmill and furniture workshop, experimental agricultural techniques (it was home to the UK's first battery henhouse for example), environmental initiatives, and a wealth of small businesses (Cox 2005). In recent years it has lost much of the diversity of the businesses but is still a powerful centre of culture and the Arts, priding itself on being a hub for ideas generation, dedicated to "the advancement of the arts, sustainability and social justice" (DHT 2010:unpaginated).

Totnes is also home to a number of innovative businesses and projects, for example Riverford Organic Farm, one of the country's largest organic businesses, which delivers over 20,000 organic vegetable boxes a week across the South West and further afield⁵. Totnes also has a number of 'green' campaigning groups and a ground-breaking strawbale house within the town. The Dartington Estate is home to Schumacher College⁶, which brings many leading names in sustainability to the town.

Clearly Totnes is not representative of other UK market towns of a comparable size, having a history of pioneering approaches to cultural, artistic and

⁴ www.dartington.org

⁵ www.riverford.co.uk

⁶ www.schumachercollege.org.uk

environmental matters. In that sense it might be argued that the approach taken in this research will have little in terms of wider replicability. However, there are several reasons why Totnes was chosen for this research.

1. Totnes is the UK's first 'Transition Town', the pilot project which went on to inspire many others. It is arguably the most advanced such initiative in the country and therefore has the most to offer the researcher, in particular with objective 1.
2. It has a long history of green thinking: in some ways it is more advanced in terms of green awareness than many other towns, offering a useful exploration of the 'cutting edge'.
3. It has little by way of 'sprawl', being defined by a tightly enforced 'green belt' around the town. This allows local agricultural production to be viewed as being potentially more tightly linked to the town than in many other places.
4. Being a town which is relatively sympathetic to green ideas, it lends itself to acting as a laboratory for such a concept.

There is much of value that can be learnt by focusing purely on Totnes, and Chapter 8 will attempt to draw wider lessons that can be learnt from this single case study. While some may argue that Totnes's 'unique' character makes it a case study with little potential for relevant insights for the wider world, there is much that can be learnt from this study, as will be seen.

3.4. Methods.

3.4.1. Qualitative and Quantitative Approaches

The methodology for this research comprises several interlinked qualitative and quantitative methodological approaches that enabled triangulation of research results (Arksey and Knight, 1999). The majority of this research was qualitative, as it emerges from a humanistic perspective, and takes an exploratory angle on the issue of community responses to peak oil and climate change. It is observing a social process, with all its nuances and subtleties, and is, to some extent, shaping that process, so qualitative methods are more useful for uncovering the complexities of this process. As will be seen in Chapter 7, qualitative approaches are able to offer explanations for unexpected results from the quantitative research, the two, in practice, complementing each other very well. Indeed, I have argued elsewhere (Hopkins 2008) that the Transition approach is designed as a great social research project, built around the idea of Action Learning (Brockbank & McGill 2003).

The argument that research quality is enhanced by multi-method investigations is now widely accepted (ie. Yin 1984, Harvey & Pagel 1990). In the 1960s however, qualitative research was seen as subordinate to quantitative (Denzin & Lincoln 2005), although it grew in popularity as the Quantitative Revolution gave way to more humanistic concerns and approaches, what Cloke et al. (1991:57) refer to as "the peopling of human geography". Although they are distinct approaches, some, such as Mason (1998:6) argue that "the distinction between quantitative and qualitative methods are not entirely apparent". Qualitative research emerged from a wide range of intellectual and disciplinary traditions and has proved consistently difficult to define. For Denzin and Lincoln

(2005:3), qualitative research is definable, and comprises "a set of interpretive, material practices that make the world visible (and) turn the world into a set of representations". Kirk and Miller (1986:9) state that qualitative research is a particular tradition in social research which "fundamentally depends on watching people in their own territory and interacting with them in their own language, on their own terms".

Qualitative research uses a wide variety of empirical materials, each of which reveal different aspects of the world around us. It is, however, not without its critics, such as Carey (1989:104), who accuses it of "retreating into value-free objectivist science". The term 'qualitative' implies that there are qualities of entities, processes and meanings that are difficult or impossible to measure in terms of quantity, amount, intensity or frequency.

The idea, embodied in quantitative research and in positivism, that an objectively detached observer is possible was rejected by the Chicago School, who emphasised the need for the social researcher to be more actively involved in his/her subject (Layder 1995). They challenged the approach of qualitative research up to that point as being a tool for 'observing' foreign cultures (Denzin & Lincoln 2003) and therefore being intrinsically linked to colonialism. They argued that the researcher should seek an empathetic understanding of the behaviour of those being studied. Hammersley (1990:598) argues that the main assumption underlying qualitative research is that "the social world must be discovered" and that this can only be achieved by "first-hand observations and participation in natural settings, guided by an exploratory orientation" (ibid). Johnston et al. (2000) question Hammersley's assertion that the social world

exists to be 'discovered'; "these approaches regard the world not as something pre-existing and awaiting discovery, but as something dynamic and changeable, always in the process of becoming – of being constructed through a web of cultural, political and economic relationships" (Johnston et al. 2000:660).

Quantitative research is, by general consensus, easier to define. Bryman (2001:506) states that it;

"usually emphasises quantification in the collection and analysis of data. As a research strategy it is deductivist and objectivist and incorporates a natural science model of the research process (in particular one influenced by positivism) but quantitative researchers do not always subscribe to all three of these features".

Ellis (1994:377) emphasises the importance of the methods used: "scientific observations that are recorded in a numeric or some other standardised coding format". In the field of geography, the quantitative approach has been somewhat tainted by its association with positivism (Hoggart et al. 2002), with many feminist researchers for example turning to qualitative research owing to perceived sexist biases in much quantitative research. It only began to be adopted by geographers in the 1950s, reaching its peak in the 1960s (Burton 1963) with the 'Quantitative Revolution', since when geographers have become increasingly wary of quantitative methods in particular, and their broader intellectual justification in general (Johnston et al. 2000).

In essence, the quantitative approach distinguishes elements as individual units, which can be counted on some kind of numerical scale. It is associated with a belief in the objectivity of the social world, as well as the idea of causation in social processes (David & Sutton 2004). There are two main types of

application; statistical methods and mathematical modelling. Statistical methods are used to generate and test hypotheses using empirical data, and mathematical modelling is used to create formal models from an initial set of abstract assumptions (Johnston et al. 2000). Quantitative research's ideal of laboratory conditions, an artificial sense that standardised approaches are free from 'contamination', is criticised by qualitative researchers as being excessively artificial (ibid).

To conclude, it is useful to cite Hoggart et al. (2002), who summarise the distinction between qualitative and quantitative approaches. "Qualitative (approaches) focus on a large number of attributes (and their linkages) over a relatively small number of cases (whether people, factories or nations). Quantitative work, by contrast, usually examines a larger number of cases but focuses on fewer attributes" (ibid 2002:64). This thesis concurs with Hodson (1999), who argues that the two approaches should be seen as complementary, and the combination of the two, albeit with a dominance of qualitative methods, can be seen in the range of methods presented below.

3.4.2 Oral Histories.

The first step of the research consisted of the use of **oral histories** with residents in Totnes to obtain information about how the town functioned prior to the availability of cheap oil (to partly address Objectives 1 and 2) and how residents coped during previous energy crises (one example of those undertaken can be found in Appendix 2). As various authors have highlighted, oral histories can be a useful first methodological step for accessing information about longer-term patterns and processes in a locality, as well as providing the

researcher with a 'feel' for how a locality has approached specific issues such as energy crises (e.g. Flowerdew and Martin, 1997). 14 'older' residents of Totnes were extensively interviewed in order to obtain details about the time of the transition to what we might call 'The Age of Cheap Oil' (in particular during the 1940s and 1950s).

Atkinson defines a life history as "a qualitative research method for gathering information on the subjective essence of one person's entire life" (Atkinson 1997:6). For Plummer (2001), biographies and life histories come under the collective heading of 'human documents', which he defines as "accounts of individual experience which reveal the individual's actions as a human agent and as a participant in social life" (Plummer 2001:3).

Oral history interviews were used to find out from people with memories of the period 1930 – 1955 what they remember of the local economy at that time, what skills they and the people they knew had, and the key elements of the local economy. They produced useful insights which sat well alongside other qualitative methods like focus groups and quantitative methods such as surveys. This supported Objective 1 by offering insights as to what degree of economic localisation has been possible in the town in the recent past, as well as allowing an historic sense of how such resilience as existed has been eroded in the intervening years. Oral histories also helped with Objective 2, allowing insights to be gleaned as to whether previous times of energy scarcity produced a situation closer to Heinberg's 'Powerdown' or to 'Building Lifeboats'.

With life histories, information is usually presented in the first person, with the researcher removed as much as possible from the text. They range from a mini autobiography focusing on one element of subjects' experiences to longer accounts of their whole lives. The aim of the life history interview is to produce, from the transcription of recorded interviews, a flowing narrative, completely in the words of the person telling the story. The first person to study individual lives using life narratives was Henry Murray, who used them in the 1930s to understand personality development (Atkinson 1998). Life histories have long been one of the primary methodologies of anthropological field work, as well as a central tool for those working in the history field. They have now gained respect and acceptance in academic circles. Plummer (2001:130) writes that life histories are useful "when what you want to understand are people's direct understandings of the social worlds in which they live". They have a range of possible uses, for generating new ideas, as a tool for exploring a new field, as a method for complementing other research strategies, as a tool for drawing all the strands of a project together or as a case history in its own right (ibid).

The question of who to interview is one of the biggest challenges facing the researcher. Plummer observes that unlike large scale sampling, life histories are "the strategy of the poor", that is, researchers who are unable to make bold generalisations from a large, representative sample. With life histories, the issue is not one of sample size, rather who to select. He writes, "the ordinary person seems to come closest to providing a source for generalisations to a wider population, but in effect it is notoriously difficult to locate such a person" (Plummer 2001:135).

For this research I conducted one-to-one interviews with people selected either because they have experience of an area of particular interest to the study (ie. local food production, transport, industry or local politics) or through snowballing or personal introductions. Atkinson offers a short agenda of key areas to explore in the research questions, such as education, love and work (Atkinson 1998). Gubrium proposed that the interview become a narrative, using the questions to trigger memory (Gubrium 1993). For McAdams, the starting question should be "think of your life as a book" (McAdams 1993:256). In this research the interviewee was asked to give an overview of their lives, and then to return to the period between 1930 and 1955, and explore in detail their recollections of food, energy, skills and the local economy. Interviewees were selected based on the following criteria: that they were able to recall the period between 1930 and 1955; that they lived in the Totnes area for at least part of that time; and that they were willing to be involved. They were chosen with every attempt made to ensure that they represented a range of views and political perspectives. Snowballing provided access to some interviewees I wouldn't otherwise have encountered.

The interviews were digitally recorded with permission (ethical clearance was obtained), and were mostly conducted at the interviewees' homes. Extracts from these interviews are used throughout Chapters 5-7, and in Chapter 7 specifically to explore how levels of resilience can be established, with these interviews enabling a detailed qualitative overview of the degree of resilience that existed in the 1950s in and around Totnes. This was then complemented by In Depth Interviews (see 3.4.4).

3.4.3. Quantitative Questionnaire Surveys

As a second methodological step a quantitative questionnaire survey was carried out of 223 households in Totnes and Dartington. The questionnaire (see Appendix 1) drew some of its questions from those developed by CCE in their Community Resilience Manual (2000), and was adapted based on their subsequent revisions (Cowan et.al 2006) (it can be found, in full, in Appendix 1). Some useful insights were also drawn from the Resilience Alliance's work on resilience indicators, although given that it focuses more on ecosystems, whereas CCE focus on community economics, it is seen here as being of less relevance. The questionnaire was designed to establish baseline information on beliefs, behaviour, patterns of consumption and levels of skills and adaptability. This information provides valuable insights both into Objective 1, i.e. a detailed analysis of obstacles to change, and also to Objective 3, enabling the researcher to begin to identify elements of a new approach to resilience building which have underpinned the Energy Descent Planning process.

Questionnaires are the lone quantitative method employed in this research. In the field of social research, their role is invaluable and their utility unquestioned. Denscombe (2003:6) argues that "they have emerged in recent times as one of the most popular and commonplace approaches to social research". In the geographical context, quantitative surveys offer three crucial characteristics. Firstly they enable a wide and inclusive coverage, secondly they enable a snapshot to be taken at a particular point in time, and lastly they enable empirical research and the collection of hard data (Denscombe 2003).

Denscombe (2003) argues that for a questionnaire to qualify as quantitative research it should perform three key functions. Firstly, it should be designed from the outset to collect information that can provide data (for analysis). Secondly, it should comprise a list of questions which are asked to a range of people. Thirdly, it should gather information by directly asking the respondents. The purpose of the questionnaires in this research has been to obtain a snapshot of opinions and habits across the Totnes community, in relation to the community's degree of resilience, and willingness to change (see Appendix 1). If Denscombe's three key features are observed, they can provide essential data, which can also be revisited longitudinally in order to assess changes in thinking or practice.

The principal limitations to the success of a questionnaire can be addressed in its design, as well as in the selection of participants. The first limitation to a successful questionnaire is cost. Although not excessively expensive, it does incur some costs which are important to consider at an early stage, such as printing and, if appropriate, paying those conducting the survey on your behalf. Having decided that a quantitative questionnaire is a pivotal part of this research owing to the key baseline data it can provide, one must then decide which type of survey is best utilised for the purpose.

Type of Survey	Advantages	Disadvantages
Postal Questionnaire	Can yield detailed information.	Low response rate (around 20%) Needs very large mailings Problems with representativeness of the sampling
Internet Surveys	Cheaper than postal surveys	Hard to get people to use them Excludes non computer owners
Face to Face Interviews	Obtains more data Better response rate More opportunity to 'sell' the research More representative balance in the sample	Can be more expensive than the two above
Telephone interviews	Enhanced possibility of a representative sample	Cheaper and quicker than 1 and 3 above Questionable if it produces better data than face to face Possibility that the move to mobiles makes phone interviews less representative

Table 3.1. Advantages and disadvantages of various forms of quantitative questionnaires (Source: Denscombe 2003).

For the purposes of this research, face to face interviews emerge from the comparisons in Table 3.1 as most appropriate. However, as reflected above, any questionnaire opens itself to the issue of sampling and the degree to which the researcher's sample reflects the population studied. In order to gather data most useful to Objectives 1 and 3, a broad cross-section of the community was desirable, and a street-based, multi-location approach was therefore designed to achieve this. Streets were chosen randomly across Totnes and Dartington, in such a way as to ensure a good spread across the area, including the range of housing types and income demographics, and then every sixth house was selected, an approach known as stratified cluster sampling. With this in mind, the questionnaire was designed to be concise and not too time consuming for the respondents.

Denscombe (2003) argues that the length and appearance of the questionnaire is essential. "It is worth remembering", he writes, "that there is, perhaps, no more effective deterrent to answering a questionnaire than its sheer size" (ibid 2003:151). Careful attention was paid to the questionnaire, only asking questions vital to the research and there was a rigorous weeding out of duplications in the questions. The questionnaire was therefore designed to be as straightforward and fast to answer as possible.

The design of the questionnaire itself was given careful consideration. It prominently featured information about the sponsor, a brief paragraph explaining the purpose of the questionnaire, a statement relating to confidentiality, a return address and date, and also a brief statement of thanks for their involvement (Denscombe 2003). It also featured instructions as to how to complete the questionnaire. The questionnaire was piloted with 15 people, neighbours and people working in the TTT office, who gave useful feedback which led to the rewording of some of the questions, and to the conclusion that the length of the survey was about right. The surveys were personally dropped off with respondents and collected two days later, a team of five people responsible for this. Most questions were designed around the Likert Scale which made for straightforward entry into SPSS for analysis. Once it had been entered into SPSS, the 219 respondents were then checked through, with any missing variables being coded as 'missing'. Initially a simple analysis of each question was performed, providing data on numbers and percentages of respondents for each question. Some bar charts and pie charts were also produced. Subsequently a number of correlations were carried out, and Mann-

Whitney U-Tests and Spearman correlation co-efficients were performed where appropriate.

3.4.4. In depth interviews with contemporary stakeholder groups.

A third methodological step built on steps (1) and (2) and took the form of **in-depth interviews** with key representatives from stakeholder groups in Totnes who were both *in charge* of energy-related decision-making processes (e.g. local and regional decision-makers) as well as those stakeholder groups *affected* (and possibly disempowered; see above) by energy-descent processes (e.g. local businesses [especially linked to or reliant on transport], commuters, representatives from the agricultural sector, etc.) (Objectives 1 and 3). These interviews were especially used to explore issues of governance, but also to gain deeper insights into obstacles to Transition as well as opportunities it presents. These interviews proved to be revealing in terms of obtaining data that the quantitative questionnaire could not obtain.

Intensive interviewing is one of human geography's most widely used fieldwork methods (Johnston et al. 2000). It is different from a conversation in three principal ways. Firstly, explicit consent is given to take part; secondly, the interviewee is speaking 'on the record'; and thirdly, the agenda for discussion is set by the researcher (Denscombe 2003). Intensive interviews can be used for both qualitative and quantitative research, the former being unstandardised forms like focus groups, the latter being much more structured.

There are three main methods of interviewing. The first are unstructured, where no strict procedure of any kind is used and the interviewer acts freely. The

second are structured, which follows a strict procedure, and the third is semi-structured which is midway between the two (Sarantakos 1998). In practice, most interviews will slide back and forth along this continuum (Denscombe 2003). Intensive interviews can follow a range of interviewing styles, short, long, unstructured, structured, and so on. What intensive interviews have in common is a level of contact between interviewer and researcher that Hoggart (2002:205) called "a close encounter", one whereby interviewer and interviewee jointly "create ... knowledge" (Bryman 1988:116). The qualitative intensive interview is distinguished by the use of open-ended questions, and by single, one-to-one interviews. The looser arrangement allows the interviewer to change the order of the questions, and to add new ones during the interview. In practice, each interview will begin with an introduction to the research and a request for permission to record the interview. The first question will be a general 'easy' question (Denscombe 2003) to allow the interviewee to settle down and relax. For this survey, the questions followed a semi-structured format, with pre-designed questions but with an inbuilt flexibility to allow the interviewer to follow new strands that emerge. This format offered the subjects of the research much more scope to speak for themselves than structured questionnaires do (Johnston 2000:407).

There are some aspects of the intensive interview that can be problematic for the researcher. These include interviewer bias, where interviewees respond differently depending on how they perceive the interview. People can often find themselves giving the answers they feel the interviewer wants to hear (Denscombe 2003, Sarantakos 1998). Similarly, it is important that the interviewer remains neutral and non-committal in relation to statements made

by the interviewee during the interview. Lamnek (1988) pointed out that successful conducting of qualitative interviews requires the development of trust, collegiality and friendships between interviewer and respondent, a high degree of competence on the part of the interviewer, and an ability of the respondent to be able to verbalise their views and opinions. They are, he concludes, demanding and time-consuming. For this research, interviews were conducted at a variety of locations, some interviewees felt happier being interviewed at their home or office, and others came into the Transition Town Totnes (TTT) office for their interviews. Interviews were recorded digitally and transcribed. Respondents were anonymised as follows: the four District Councillors representing Totnes were anonymised as DC1-4, a representative of the Totnes Strategy Group as SG1, and two Town Councillors as TC1 and 2. Also interviewed were members of the community and other organisations which interact with the Councils, and also a senior planner at SHDC (the full list of those interviewed can be seen in Table 3.2.)

Name	Role/Position	Reason for Selection
Local Politicians		
DC1	South Hams District Councillor for Totnes	Insights into SHDC and how it relates to the community of Totnes
DC2	South Hams District Councillor for Totnes	Insights into SHDC and how it relates to the community of Totnes
DC3	South Hams District Councillor for Totnes	Insights into SHDC and how it relates to the community of Totnes
DC4	South Hams District Councillor for Totnes	Insights into SHDC and how it relates to the community of Totnes
TC1	Totnes Town Councillor	Insights into TTC and its relationship with the community
TC2	Totnes Town Councillor	Insights into TTC and its relationship with the community
Representatives of Local Business Community		
Anonymised	Representative of local Chamber of Commerce	Insights into the local business community
Walter King	Local businessman and	Insights from the experience of running a

	publisher of 'Totnes Review'	business in the town
Anonymised	Reporter for the 'Totnes Times'	Useful viewpoint on how TTT has been received by the community
Fiona Ward	Transition Town Totnes / Transition Streets	Carried out first Oil Vulnerability Audits in Totnes, co-ordinator of 'Transition Streets'
Local Authorities and Governance		
SG1	Representative of the Totnes Strategy Group	Involved in co-ordinating the community's response to the DPD and other planning issues
SP1	A senior planner at South Hams District Council.	Insights into Council strategic thinking on peak oil and climate change
John Whitelegg	Lancaster City Council and Local Government Association	Wider perspectives on how peak oil and climate change are dealt with by local government
Alexis Rowell	Camden Council councillor, Chair of the Camden Sustainability Task Force	A pioneering 'eco-councillor', also active within Transition
Philip Blond	Respublica	One of the most influential thinkers on 'The Big Society'
Anonymous	Stroud District Councillor	For comparisons with Totnes and for insights into how Transition Stroud has interfaced with its local authority
Academic Interviewees		
Neil Adger	Professor in the School of Environmental Sciences, University of East Anglia	Eminent researcher on links between climate change and resilience
Tim Kasser	Professor and Chair of Psychology, Knox College, Illinois, US.	Insights on the links between consumerism and happiness, and the psychology of change
Interviews relating to aspects of localisation explored in Chapter 5		
Rob Scott McLeod	Regeneration Partnership	Expert on the 'Local Passivhaus' concept
Simon Fairlie	Editor of 'The Land' magazine and co-ordinator of 'Chapter 7'	Insights on how the planning system can enable low impact land use
Julie Brown	Growing Communities, Hackney, London	Leading thinker on local food systems for urban areas
Mike Small	The Fife Diet, Fife, Scotland	Practical experience of implementing local food diets
Insights into Totnes History		
Alan Langmaid	Director of Totnes Museum	Grew up in Totnes, and has a wider knowledge of the town's history
Noel Longhurst	University of Liverpool PhD student	Doing parallel research looking at the history of 'alternative' Totnes
Andy Langford	Former Totnes resident	Grew up in Totnes, and ran a shoe-making business in the 1970s
Muriel	Former Totnes resident	Moved to Totnes in 1945, raised a family in the

Langford		town
Val Price	Totnes Image Bank and Rural Archive	Grew up in Totnes, local historian
Marion Adams	Local business woman and Town Councillor	Grew up in Totnes
Ken Gill	Retired, former market gardener	Son of Jack Gill, founder of Gill's nursery, Ken ran the garden until the early 1980s
David Heath	Retired	Son of George Heath, who ran a market garden in Totnes until 1980
Douglas Matthews	Retired farmer, Staverton (now deceased)	Ran farm in Staverton, grew up working with horses in the 1930s
John Watson	Retired	Founder of Riverford Organic Farm
Ian Slatter	Former Mayor of Totnes and Totnes Town Councillor (now deceased)	Grew up in Totnes
Vera Harvey	Totnes Town Councillor	Grew up in Totnes
Margot Vickers	Retired	Lived in villages around Totnes after the war, moving in to the town later

Table 3.2. List of those interviewed for this research (Source: author).

3.4.5. Focus Groups.

The fourth step used was the now well-established method of focus groups (e.g. Agar and MacDonald, 1995; Burgess, 1996; Hoggart et al., 2002). These were conducted, in particular, in relation to Objective 3, enabling the evaluation of views and opinions on the suggestions about increasing resilience as laid out in the Totnes Energy Descent Action Plan (EDAP), which, in turn, drew on the resilience indicators suggested as a result of the questionnaires discussed above. The focus groups on energy and food generated useful data for the relevant sections of Chapter 5, and also for exploring the advantages and disadvantages of adopting resilience and relocalisation, and attitudes to the concept.

Focus groups are an increasingly popular research tool. While they originated in market research and advertising, they have become an increasingly central tool in social research, as well as in social anthropology, media/cultural studies and health research (Kitzinger & Barbour 1999). Focus groups tend to be used more by qualitative studies, with quantitative studies more drawn to structured interviews (Sarantakos 2005). For Hoggart et al. (2002) there are similarities between focus groups and intensive interviews, but also some important distinctions. They are similar in that both require direct interaction between research participants and researchers, but the difference is that they incorporate social interaction, with several people, in effect, being interviewed simultaneously. This is a point picked up by Krueger (1998:10) who wrote that "attitudes and perceptions relating to concepts, products, services or programmes are developed in part by interaction with other people. We are the product of our environment and are influenced by people around us".

Focus groups were defined by Barbour and Kitzinger (1999:4) as "group discussions exploring a specific set of issues". They added that they are "distinguished from the broader category of group interviews by the explicit use of group interaction to generate data" (ibid). They are especially good at capturing tacit or experiential knowledge. In this study, they are vital for Objective 4, offering a rich insight into potential obstacles to the successful implementation of an EDAP, and of wider community resilience. They allowed insights into the relationship of communities with their public representatives, the degree to which they felt empowered to implement change, and how the EDAP might change that. Focus groups are powerful tools for exploring how points of view are constructed and expressed. It is felt to be important by a

number of writers that the focus groups create a positive group dynamic. Morgan (1997) argued that while focus groups do not require consensus, they require a degree of compatibility among their members. For Barbour and Kitzinger (1999), the question of whether homogeneity is more important than heterogeneity is an important one. They argued that while it can be useful to bring people together on the basis of shared experience, it is often the differences between people that are illuminating. The success or otherwise of focus groups depends on the aims and objectives of the research and to the attention paid to participant recruitment and how the groups are managed.

In terms of the ideal group size, Barbour and Kitzinger (1999) argued that the 8-12 people used in market research focus groups is too large, and that for Social Research 5-6 is better. When organising focus groups, one should also be aware of the potential role of 'gatekeepers' (Barbour & Kitzinger 1999:8), who may screen potential participants, such as a school teacher who feels pressured to send her brightest students to a focus group. The choice of venue is also important, although academics disagree on this. Barbour and Kitzinger (1999) suggested a checklist of criteria for a venue – it should be accessible, familiar, quiet and comfortable, free from interruption and protected from observation. Although one might conjecture that the ideal venue is a neutral setting where participants will not feel influenced by the surroundings, Barbour & Kitzinger (1999) argued that such a place does not exist. Baker and Hinton (1999) argue that the location of each focus group needs to be chosen dependent on the group one is to interview. They found, for example, that refugees tended to feel more comfortable in public spaces rather than their own

crowded homes, whereas other groups prefer the feeling of being on 'home territory'.

There is a broad spectrum of opinion as to when is best to use focus groups in the context of other research approaches. Michell et al. (1999) warned against the use of focus groups as a 'sole method'. They argue that those with the lowest social status tend to keep quiet in focus groups, and respond better to interviews. They can be combined with other research approaches in a number of ways. They can, for example, be used in the latter stages of quantitative research projects, which is, indeed, how they were used here. Barbour & Kitzinger (1999:6) argued that focus groups "help tease out the reasons for surprising or anomalous findings and to explain the occurrence of 'outliers' identified, but not explained, by qualitative approaches such as scattergrams or box and whisker plots". In this research, Focus Groups enabled, as part of Objective 3, closer examination of obstacles to change and some exploration of the psychology of change. They also allowed the researcher to explore the desirability or otherwise of change, as well as what obstacles people perceived to be in the way of action, and to what extent they were just real or perceived. Focus groups also complement questionnaire-based approaches. While questionnaires are more appropriate for obtaining quantitative information and giving the researcher an idea of how many people 'hold' a particular point of view, focus groups enable a deeper exploration of how those views are constructed and expressed. Goss & Leinbach (1996) suggests that they are also useful as a preliminary exploratory tool, at the beginning of a research project for use in hypothesis creation. For Morgan (1997:11) focus groups have a potentially very broad application. They can be used, he argued;

- When orienting oneself to a new field
- For generating hypotheses based on informants insight
- Evaluating different research sites or study populations
- When presenting research to obtain 'consumer' or 'community' validation.

For this research, three focus groups were convened, focusing on food, energy and work and skills respectively. Participants were selected from survey respondents, with an attempt made to bring together for each group people with divergent opinions on the issue under discussion, and also that participants were from different areas of the town. One of these groups was facilitated by this researcher, the other two by a colleague. The groups took place at the Seven Stars Hotel, a venue considered 'neutral' by most people, and ran from 7pm until 9pm. Refreshments were provided and every attempt made to make participants feel comfortable and relaxed. The sessions were digitally recorded and transcribed. These sessions relate directly to Objective 3, the grounding of ideas around energy descent and resilience into a model for change. In this research, Focus Groups were also used to explore how far the concept and the work of TTT has permeated the awareness of the town.

3.4.6. Public Participatory Tools

Alongside the better known research methods described above, this research made use of innovative public engagement mechanisms such as 'Open Space' (Owen 2000), 'World Café' (Brown et.al (2005) and the use of scenarios (see 2.4.4). These acted as a platform for engagement of Totnes residents in a creative and self-organising way. Public participation is loosely defined as "increased involvement of the public in the affairs and decisions of policy setting

bodies" (Rowe & Frewer 2005:251). This study is deeply rooted in the Transition process undertaken by TTT. These participative tools offer innovative ways of meeting Objective 1, in particular the effectiveness or otherwise of these approaches as methods for enabling community envisioning of a relocalising process, as well as for ascertaining where they feel obstacles to change might lie. They are also useful in generating ideas from the community as to what resilience might look like in practice. A wide range of mechanisms and practices has emerged, which as they have evolved over time in different locations, can be hard to distinguish from each other, due to the "uncertain and contradictory nomenclature of the mechanisms" (Rowe and Frewer 2005:258). Rowe and Frewer (2005) pointed out the difficulties of categorising them, but proposed three categories of mechanism, *public communication*, *public consultation* and *public participation*, which as a combination they refer to as *public engagement*. These they defined as follows;

- *Public Communication* is where information is conveyed from the sponsors of the initiative to the public. This might take the form of a public awareness campaign.
- *Public consultation* is where information is conveyed from members of the public to the sponsors of the initiative, following a process initiated by the sponsor.
- *Public Participation* involves the exchange of information between members of the public and the sponsors (Rowe & Frewer 2005:263).

Given that Transition is about ensuring the maximum degree of public participation in the process, these methods have become central to the Transition process (Hopkins 2008). However, their benefits and potential have been barely explored in the literature, so this research is seen as a vital opportunity to do so in the context of this research.

Rowe and Frewer (2005) acknowledged that there is not a great deal of social research literature on these mechanisms, much of it originating from the Action Research or corporate management spheres. While the aim of most of the techniques in the public participation realm is the maximising of relevant information from the participants, there are variables that can affect this. The principal of these, according to Rowe and Frewer (2005), is the presence or absence of well trained facilitators, which can overcome the chief danger with these public participation approaches, namely dogmatic individuals dominating proceedings. Ultimately, argued Hill (1982), although the findings from public participation events may not reflect the group *opinion* with complete accuracy, they are generally found to be better than aggregated individual judgements in terms of *quality of judgement* (Hill 1982).

Open Space is a tool for using with groups from 8 to 1,000 people who need to resolve a major issue. It can run over 1-3 days, and is based on 4 principles:

- “Whoever comes is the right people
- Whatever happens is the only thing that could have happened
- When it starts is the right time
- When it’s over, it’s over”. (Owen 1999:72)

It takes the form of a community think tank, where the agenda is set by those attending. Small discussion groups address different issues that are raised, and people are free to move between groups when they want. Owen (1999) believed that a key to Open Space's success is that the experience ‘increases people’s desire to put things together in some order. Open Space has been found to be highly effective as a tool for identifying community opinions,

concerns and ideas (Hopkins 2008). In this research, notes from a TTT Open Space day-long event on energy are used to inform the energy section of 5.3.

Another useful tool for use in public participation is World Café (Brown et al. 2005). World Café is similar to Open Space in that it is a tool for creatively engaging the participation of large groups of people, but it differs in that it asks them to address specific questions, rather than allowing them to design the agenda. Groups of four or five people sit around small tables in a café-style ambience, and engage in 'conversations' on a question set by the facilitator. Each table has a 'table host', who stays at the table while every 15 minutes, the participants get up and move to another table to continue the conversation with a different group of people. Notes are taken by the table host, and each 'conversation' lasts 45 minutes.

While these tools are relatively new to Social Research, they have much potential in relation to this particular research. They also present unique challenges in terms of reliability and objectivity. Sampling is not an issue with Open Space, as the event is open to whoever wants to come. With an Open Space event, certain people felt to be relevant can be invited, but in the main the audience is those people in the vicinity who feel passionate about the subject. Once the event has begun, there is little possibility for the researcher to influence discussion, as it is entirely self organising. It may be that individuals are susceptible to peer pressure in an Open Space event, but the facilitator should be aware of the possibility. In this research, Open Space was used to access ideas from the community as to what they see as a more resilient version of their community looking like in practice.

World Café differs slightly in that participants are usually specifically invited, and questions are set in advance, meaning that the process is much more regulated than the less structured nature of Open Space. For this research, notes from a World Cafe event held as part of a 'Can Totnes Feed Itself?' event held late 2009 (see Appendix 3) are used in the food section of 5.3.

3.5. Who Did What

The actual implementation of this methodology was achieved with some support from other people, and it is important to acknowledge at this point the inputs into the process from people other than myself. The general research methodology was designed by myself, with the support of and input from my supervisors. The oral history interviews were conducted, transcribed and coded by myself. The World Cafe session referred to here was facilitated by myself but within the context of a TTT event organised with support of other people from the group. The notes produced at that meeting were transcribed by Asha Bee. The Open Space event referred to here was co-facilitated by myself and Naresh Giangrande and the notes transcribed by Karen Pike. The questionnaire survey was initially drawn up by myself, redrafted following comments from my supervisors, piloted on staff at Transition Network and on neighbours of mine, and then delivered door-to-door by a team of four surveyors, and also by my son. The resultant data was entered into SPSS by Sally Bishop, and analysed by myself with some support from Ian Campbell who offered advice to this novice statistician! In terms of the in-depth interviews, my initial list of interviewees was developed in consultation with my supervisors, and all of the interviews were conducted by myself, with the majority of them being transcribed by Sasha Nathanson and Tamzin Pinkerton. Those invited to

participate in the focus groups were selected by myself from the questionnaires, and the questions formulated by myself with input from my supervisors. Two of the focus groups were facilitated by Jacqi Hodgson (with clear guidance from myself as to how I wanted the session run), and one by me. The recordings of the sessions were transcribed by Tamzin Pinkerton.

3.6. Data Analysis

As was examined in 3.4.1, this research combines qualitative and quantitative research methods, both of which need to be analysed in different ways. The analysis of qualitative data usually begins with the identification of key themes and patterns (Coffey & Atkinson 1996), a process which is, in turn, determined by the processes for coding data. It is essential that data are organised and managed in a way to facilitate retrieval of the meaningful information they contain. This is usually done by assigning tags or labels to the text, based on the concepts to be explored. This process of turning assorted data into analysable units is termed 'coding'. Although widely used, Coffey and Atkinson (1996:26) argued that it "can imply a rather mechanistic process we prefer to think of in terms of generating concepts from and with our data, using coding as a means to achieve this".

It is important to stress that coding is not an end in itself, it is a step towards analysis, rather than being the analysis, or a substitute for it. The concept of coding encompasses a broad range of approaches. The starting point when coding data is to establish the concepts on which the coding is to focus. Coding can be seen as a bridge between the data and the researcher's ideas about the concepts being explored. Seidel and Kelle (1995:52) argue that "codes

represent the decisive link between the original 'raw data', that is, the textual material such as interview transcripts or fieldnotes, on the one hand, and the researcher's theoretical concepts on the other". Successful coding enables the retrieval and organisation of data. It entails categorising the chunks of text so that, as Miles and Huberman (1994:57) put it, "the researcher can quickly pull out and cluster the segments relating to a particular research question, hypothesis, construct or theme".

Seidel and Kelle (1995:56) argued that coding performs three principal functions. First, it enables the researcher to notice relevant phenomena. Second, collecting examples of those phenomena, and third "analysing those phenomena in order to find commonalities, differences, patterns and structures". In practice, coding is usually a mixture of data reduction, to distil essential meanings and themes within the data, and data compilation, in analysing the data in detail and building up a complex 'map' of it. Strauss (1987) argued that coding should be used to open up the inquiry and move towards interpretation. This is achieved by allowing the researcher to identify key themes in the data, as Coffey and Atkinson (1996:45) argued, "coding quantitative data enables the researcher to recognise and contextualise data, allowing a fresh view of what is there". For the purpose of this research I manually coded in-depth interviews, oral history interview and focus group transcripts, looking for particular themes relevant to this thesis. Delamont (1992) argued that once the coding is achieved, the data have to be interrogated, systematically explored to generate meaning. Coffey and Atkinson (1996) saw the process of moving from coding to interpretation as one of transforming coded data into meaningful data. For Delamont (1992), at this

point the researcher should be looking for patterns, themes and regularities as well as contrasts, paradoxes and irregularities. In order to move from analysis to generalisation and theorising.

In terms of coding and analysing the quantitative questionnaires, the approach used was different. Here the data from the questionnaires was analysed using SPSS, allowing data and statistical analysis. The questionnaire was devised using the Likert Scale, an attitudinal scale which involves the construction of a number of statements with the same scale responses, usually a 4 point scale ranging from 'Strongly Agree' to 'Strongly Disagree', to facilitate easy data retrieval. A basic analysis of the data was performed in SPSS, and then more detailed correlations were made in order to explore particular questions. Answers to open questions were recorded in a spreadsheet.

3.7. Conclusions

Chapter 3 offered an overview of the methodology used in the research underpinning this thesis. A case study approach has been used, focused on the case study of Totnes in Devon, the UK's first Transition initiative. In spite of the possible difficulties and issues of positionality and reflexivity that arose from this (explored in 4.6), it was felt that this researcher's positionality brought a useful perspective to the subject, and that an awareness of positionality was borne in mind through the development of this methodology. The research brought together a diversity of methods;

- a door-to-door quantitative survey of 223 households in Totnes and District using mostly Likert Scales analysed using SPSS

- in depth interviews with local decision-makers and community 'movers and shakers'
- 3 focus groups, with participants chosen from survey respondents
- a World Cafe session with local people
- An Open Space session on energy
- 14 oral history interviews with local people with memories
- Interviews with 'experts', people with useful insights to contribute to the topics being explored

This multi-method approach ensured successful triangulation, and enabled a richer evaluation of a complex community process than a more conventional approach.

Chapter 4. Transition Town Totnes: The Case Study

4.1. Introduction

Chapter 4 introduces TTT, the focus of this research. It begins with some socio-economic background on the town, before moving into an exploration of the opinions of different researchers and local people as to why the town has proven to be a particular kind of community, in which it was perhaps natural for the Transition model to find its first home. TTT emerged in 2006, and has since gone on to inspire an international movement, in which many still consider Totnes to be a flagship initiative. It closes by considering the implications in terms of reflexivity of the fact that this research is conducted by me, as its founder and as someone who is still very active within the organisation.

4.2. The Case Study: Why Totnes?

At this stage, before we explore Totnes itself, it might be useful to explore why it was chosen as the case study. Initially, the idea was to evaluate 2 or 3 Transition initiatives, of which Totnes would be one, in order to generate insights from the comparison. Other Transition communities, such as Lewes and Brixton, were considered so as to gain insights from a diversity of settings. However, in the end this approach was rejected, due to a feeling that it would greatly increase the amount of time the research would require from me (I have been working almost fulltime whilst doing this research), and it would raise a number of other practical issues too. It would also open a can of worms in terms of ensuring representativeness. Why Lewes and not West Kirby? Why no international initiatives? How would the balance be established between urban and rural, wealthy and poorer communities, north and south and so on? Seyfang (2009b,d.) has already undertaken excellent detailed surveys of both

the Transition Network in England and Wales, and also specifically of Norwich, so it was felt that that wider analysis is already being given excellent academic analysis. Given this researcher's connection with Totnes and his intimate connection to the Transition initiative there, in spite of the concerns around reflexivity discussed in 4.8, it was felt that a focus exclusively on Totnes as an early adopter of the Transition model had much to recommend it and would yield useful lessons for both academia and for the wider Transition Network. TTT has also developed a role as an 'incubator', as a 'flagship' for the wider Transition movement, often pioneering ideas and initiatives that are subsequently picked up further afield (Transition Town Totnes 2010).

Alongside the 'why Totnes?' question sits another, as to why it was that Totnes was where I chose to situate myself in order to attempt the first Transition initiative? It is one I am often asked, and the simple answer is that given its history as a centre for cultural creatives, for green thinking and for openness to new and innovative ideas (as will be explored in Section 4.4) it seemed like somewhere where the Transition concept might take root more rapidly than in many other places. I supposed that in Totnes, I would find more people already up to speed with many of the ideas that underpinned the Transition model, and that that would enable a story to be able to told, of a community embarking on this work. In practice, not only did this prove to be the case, but also a number of people who became involved at an early stage also brought new elements which greatly helped to shape the model. While clearly not everywhere is like Totnes, the role of Totnes as an incubator of innovation has fascinating lessons for elsewhere.

4.3. Totnes and District: some socioeconomic data

To better understand the opportunities and potential obstacles to the relocation of Totnes and district, it is important to ask where it finds itself today, and what are the dominant trends that define and affect it (a condensed history of the town can be found in Appendix 5). Totnes is a town in the South Hams in Devon with an urban population of around 8,416, while Totnes and District (Totnes and its surrounding 15 parishes, see Figure 4.1. below) is a largely notional concept, developed by the Market and Coastal Towns Initiative (MCTI), with a total population of 23,914 (15,498 excluding Totnes town) (DPCT 2008). Although its southern boundaries reflect traditional and geographical relationships based on Totnes' history as a market town, its northern border is politically generated, forming the north-eastern boundary of South Hams district. Totnes and District contains around 23,700 ha of land (DCLG 2005). Of that, agricultural land consists of approximately 19,282 ha; woodland and set-aside land covers around 1,273 ha (DEFRA 2004); buildings, roads, water, paths, railways and 'other' account for about 1,272 ha., and gardens around 329 ha (DCLG 2005).

Totnes itself is seen as one of the significant towns in the South Hams, what SHDC refer to as an 'Area Centre', a settlement that plays a distinctive role in the county. Devon County Council (2006) has identified some key data about the town and its surroundings. The area has seen significant population growth since 1991, with Totnes parish seeing a 17.2% rise between 1991 and 2004 (the last year for which data are available). The proportion of ethnic minorities is about average for Devon. Compared to the national average, Totnes and District has slightly high levels of unemployment, although in Totnes parish the

percentage of people claiming Income Support is 50% over the national average.

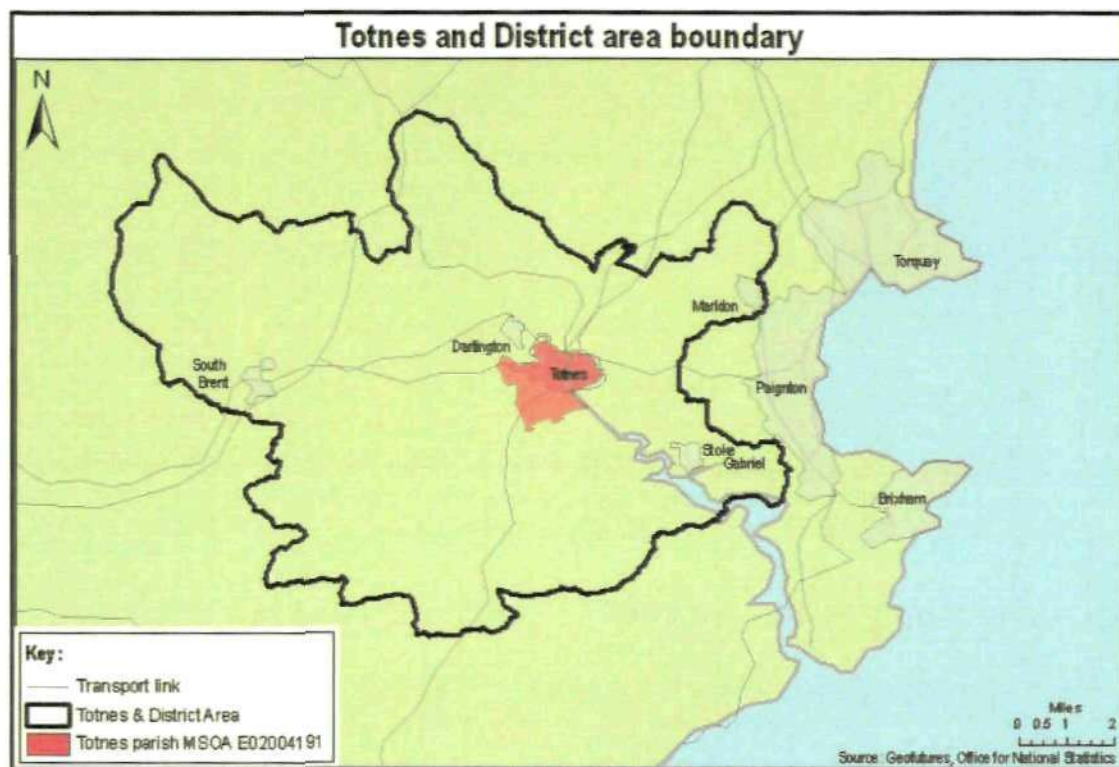


Figure 4.1. The boundary of the area of Totnes and District (Source:Geofutures 2009, from Hopkins et al. 2009).

The main sectors of employment are wholesale and retail trade, health and social work, manufacturing and education. Totnes has more part-time and less full-time and self-employed workers than the national average. Also, the number of households with an income below £20,000 in Totnes parish is 50% more than the national average. One in fifteen households in Totnes parish is occupied by lone pensioners, and the percentage of people claiming Incapacity Benefit and Severe Disability Allowance is well above average (for Incapacity Benefit and Severe Disability Allowance it is 10% (England and Wales average is 7.3%) and for Disability Living Allowance it is 5.4% (England and Wales average is 4.5%) (DCC 2006:19). The area also suffers from high house prices, and a high degree of second home ownership, resulting in the town's young

people having significant difficulty affording homes in the area. The local paper recently quoted a local boatyard worker as saying "there are far too many second homes in the West Country. If we didn't have so many second homes, the youngsters like my daughter could afford homes – they can't at the moment" (Davies 2010:7).

According to the 2001 Census, in Totnes and District 5.54% of people in the area work in food, forestry and fishing (although an exact figure as how many work in agriculture is unavailable) (ONS 2001). This differs between the urban and rural populations. 2.4% of Totnes work in food, forestry and fishing, compared with 7.33% for the rest of Totnes and District (ibid).

4.4. Totnes; a crucible of alternative culture? Typical town or 'unique'?

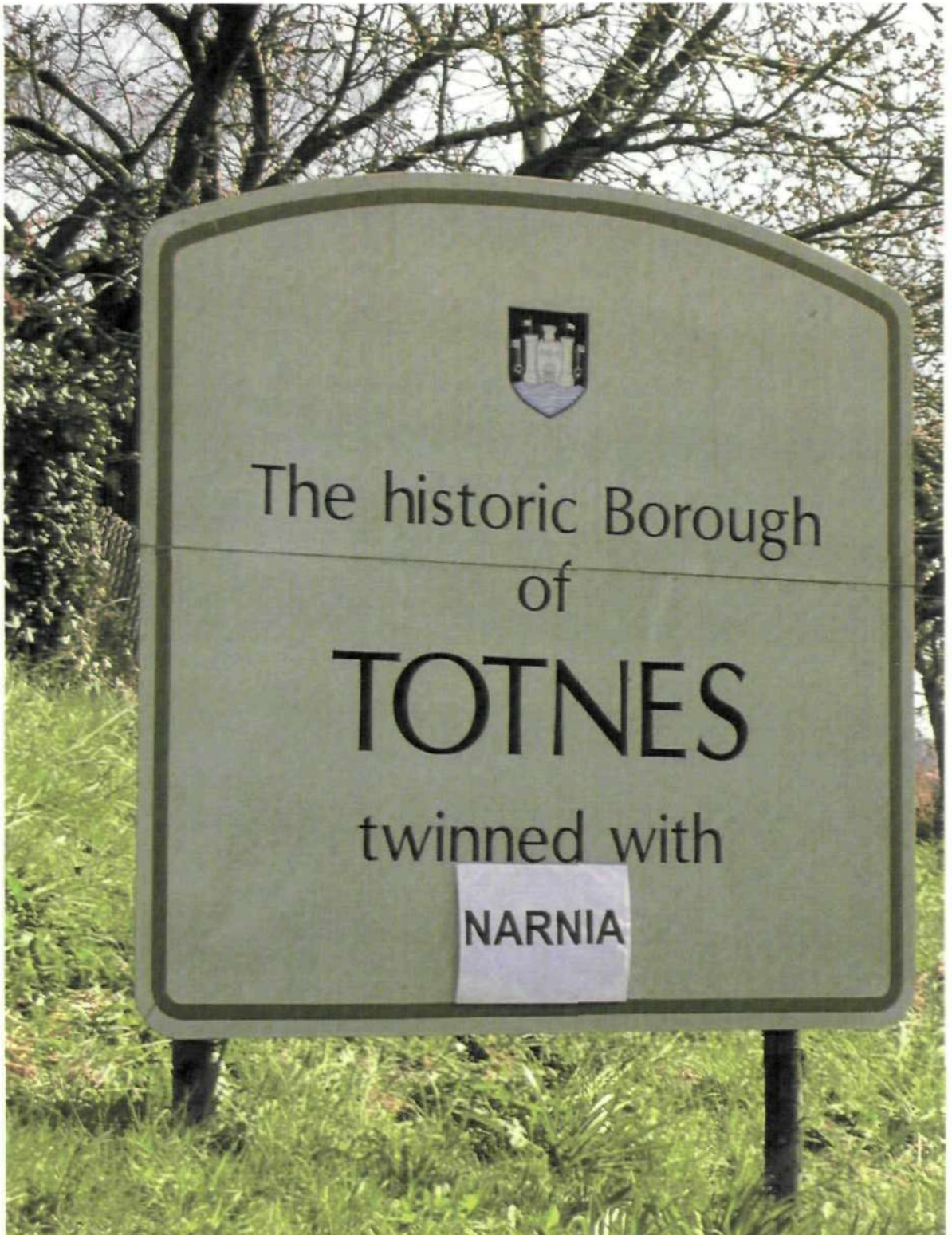


Figure 4.2. Roadsign at the entrance to Totnes, doctored by local art students (Courtesy of Bronwen & Leo Trimmin).

"What then, makes Totnes special, unusual, even unique? These are strong words to describe a little market town. England has many little market towns, often charming, often richly endowed with beautiful old buildings. Other small towns have in the past been wealthy, have contributed perhaps more famous people to the history of the country, have played their part in the defeat of the Armada, the Napoleonic wars, the Normandy landings. What is so different about Totnes?" (Saunders 2000:76)

In much of the literature about Totnes, the point is made that it is a 'unique' or an 'alternative' town. Highlife, British Airways' magazine, declared it one of the world's 10 "Funkiest Towns". Saunders (2000) identifies a few factors that she believes have historically contributed to this perceived uniqueness;

- Its location, lying "at the centre of a web of communication" (ibid:77) (road, rail, water), and its commanding position in a beautiful setting
- Its distance from London has "permitted individualism to flourish" (ibid), and although with modern travel London is far closer, historically Totnes was, in terms of travel time, a long way from London.
- Since the 1930s there has been an influx of people to the area, which has led to what she calls a "tension between reaction and liberalism" (ibid), which when combined with the town's renowned tolerance, creates a particular cultural flavour

The wider area, South West England, has long been known for its strong culture of promoting local food (Ilbery & Kneafsey 2000, Sonnino & Marsden 2006). SHDC (2007) again use the word 'unique' to describe the town, although offer different reasons. "Totnes is renowned for its cultural uniqueness, distinctive independent retail character, environmental credentials and active community. This is reflected in the many groups and activities that occur in the town" (SHDC

2007a:19). The question of whether Totnes is 'unique' is, of course, nonsensical, as, ultimately, every community and settlement is a unique product of social, cultural and economic processes. However, exploration of whether the town has qualities that set it apart from other places offers useful insights into the character of the place, and was explored at length in both the interviews and focus groups. For one local businessman, its uniqueness derives from its openness to strangers and its tolerance. This was echoed by a reporter for the local newspaper; "I think people are allowed to express themselves here, nobody is made to look a fool. If you have a view, people will listen in Totnes, however wacky it may be considered... I think people are very accepting, very understanding".

For DC2, Totnes is "one of four or five communities around the country that have a lot of ecological thinkers and people interested in different kinds of lifestyle and people interested in the Arts and creativity in general. Stroud and Lewes are obviously very similar". This link to other towns with a similar culture is echoed by researcher Noel Longhurst (pers.comm: 2009), who adds Hebden Bridge and Glastonbury to the list. He writes (Longhurst 2009 pers.comm.) "they are all small towns ... characterised by a density of what might be classed the 'radical' middle-classes or the 'humanistic intelligentsia' ... whilst there will be similarities between different 'countercultural' places the exact mixture of countercultural sub-cultures will be different in different places too. However, the 'place myths' that emerge around such places often simplify and denigrate the diversity of countercultural practice and beliefs that exist at any given 'site'". This 'place myth' which identifies Totnes as the 'Capital of New Age Chic' (Edwards 2007), "one of the capitals of the New Age economy" (Ward

1995:unpaginated), or, as an editorial in the Western Morning News about the awarding to TTT of a grant of £625,000 for its Transition Streets project (see 7.5.) put it, "Hippy Town Comes of Age" (Text Box 4.1.), is not to everyone's liking. A member of the Totnes and District Chamber of Commerce that this label is "much to the annoyance of probably the majority of people. In reality we are talking about a small percentage of people....". DC2 echoed this, "they say that we're full of travellers and hippies and people who are homeless but that's a very small proportion". For SG1, the 'unique' perception of the community obscures the fact that in many ways, Totnes is still, at heart, a very conservative rural market town: "I've been staggered by the degree to which there is an innate conservatism here in much of the local populous. I think that makes for quite a schizophrenic kind of feel. The level of racism I've heard down here I think is absolutely appalling".

Some are critical of the town's 'green' reputation. King (2008:52) critiques some of the town's sustainability thinking. Sustainability, he argues, has "worthwhile aims, but isn't there something important missing from the list? Let me put it this way; what is the point of installing a wind generator and solar heating and buying locally produced food, if you are then going to drive 300 miles each week to work in Exeter or Plymouth?" What we are seeing, he suggests, is "the long slow death of Totnes as a living, working town gather(ing) pace". Interviewees were asked whether they felt that the failure of Totnes to turn much of its talk into viable economic manifestations was due to internal ineptitude, to external interference, or SHDC's obstruction.

Hippy Town Comes of Age.

The South Devon town of Totnes has come in for a fair bit of criticism over the years as the South West capital of the 'alternative culture'. Listen to the jeers of its critics and you would think the average resident of the TQ9 postcode was a sandal-wearing, crystal-gazing soap carver subsisting entirely on brown rice and organic parsnips.

But the people of Totnes will be enjoying the last laugh today at the news that the town is to receive £500,000 in grant aid to develop low-carbon technologies. Transition Town Totnes, the group set up to pioneer green alternatives to modern life, will lead the project that could ultimately benefit 8,500 residents and offer global solutions to our changing climate.

In an interesting twist to the climate change debate, communities and individuals once seen as quaintly idiosyncratic for their way-out views have now become mainstream and may yet provide some of the answers to the biggest questions we all face. Totnes, which has been drawing free-thinkers with serious concerns about the environment for decades, now appears to have a concentration of like-minded individuals in the right place at the right time.

Of course, there will be critics, some of them residents of Totnes, who could think of better uses for half a million pounds. But the £10 million fund from which this grant will be drawn was specifically set up as part of what's called the Low Carbon Communities Challenge. If the money has been earmarked for projects designed to try to tackle global warming and reduce our reliance on fossil fuels, then where better to spend part of it than Totnes?

Many people – even those still sceptical about man-made climate change – believe that human ingenuity offers the best hope of avoiding what may be catastrophic global warming over the next century. There will be those in Totnes, as elsewhere, who think that only by abandoning our global, market-driven consumer economy and returning to an almost-medieval society can we ensure the long-term survival of the planet.

But that, thankfully, is not the view of the majority behind Transition Town Totnes. As Rob Hopkins from the project made clear: "We want to model lasting behaviour change which sees low-carbon living not as a chore or as some hair-shirt austerity measure, but as offering potential for an economic and cultural renaissance for the community".

It will be interesting to see how this project, now properly funded at last, develops ideas. Interesting too, to see how those who once dismissed "wacky" Totnes as bit of a joke start to change their tune.

Text Box 4.1. 'Hippy Town Comes of Age'. (Source: Lead editorial. Western Morning News 21 December 2009).

For DC2, one contributing factor is finance. "You need money to bring forward schemes in partnership with other organizations and that lies at the door of the

government, because they pay less to us than to others. I think we're probably one of the poorest grant wards within Devon, they tend to concentrate money on the urban areas, rather than on the rural areas".

The question of whether this 'uniqueness' renders this study irrelevant in terms of its wider generalization, generated a vigorous debate in the focus group on skills and employment. One participant stated that she felt that the "ethos, ideology and green thinking" was what made it distinct. Another countered that she felt Totnes was "quite unreal", stating that "because it has got a reputation, therefore it attracts both intellectuals and the 'funky end', but I don't think it is a very real place in many ways". Other participants responded that they didn't think that was very fair. Two participants argued that the 'New Age' aspects of the town "aren't as overt as they were, say, 20 -30 years ago. They are not so prevalent". One woman recalled her experience of how much more noticeable the alternative culture of the community was 20 years ago. "When I came out of work then and wanted to go to the Building Society to get some money out, you'd almost have to down-dress, you wouldn't walk through Totnes in a suit, my God! You looked smart, you felt funny! You needed flowing skirts and matted scarves and so on. I think there is still quite a lot of that sort of person around".

This sense that the 1970s was a pivotal point in the emergence of the counter-cultural influences on the town is again echoed by Longhurst (2009a: pers.comm): "I would argue that there was a 'collision' between the growing milieu of the 1970s and some of the ideas that emerged in Counterculture which led to a material impact on Totnes as well as the emergence of its own set of

'place myths'". Andy Langford, who established a handmade shoes business in the town in the late 1970s, identified the embargo on development of a new sewage works for the town as a key element in the emergence of new businesses at the time. Established businesses began to close, but were not allowed to be converted to residential housing, a trend underway elsewhere in the South West. "It was a blessing, it effectively limited development. I think our little shoemaking business would have been hard pushed to have found a workshop/shop combination that would have been usable if it hadn't been for the sewage embargo. There needs to be a certain level of dereliction and redundancy so that people can get going from a bootstrappy level".

Sometimes people struggle to articulate the qualities that contribute to this perceived 'uniqueness'. MW, a participant in the food Focus Group, talked about how she first came across Totnes when living nearby. "I remember sometimes just needing to drive past, because it made me feel better. I didn't have to come in, the minute I got past Collaton St Mary and the hills arrived, I felt better". This suggests that another contributing factor to the perceived 'uniqueness' is the geographical position of the town and its place in its surrounding landscape.

4.5. Transition Town Totnes, its inception, objectives and process

TTT began in October 2005 with a screening of the film 'The End of Suburbia', one of the first films on the subject of peak oil, and with a series of public talks. Over the next few months, this researcher and fellow peak oil educator Naresh Giangrande held a series of talks and film screenings and began to network with existing groups. It was inspired by work developed at Kinsale Further

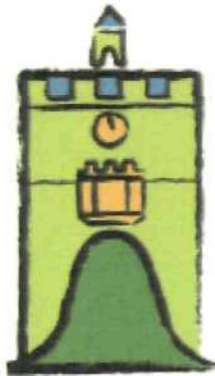
Education College (Hopkins ed. 2005). The project, which invited students to create a plan for the transition away from oil dependency, seeing that as an opportunity to revive the local economy, resulted in 'The Kinsale Energy Descent Action Plan', the first such plan produced in the world. The initial aim with the Totnes initiative was just to produce a similar plan for Totnes and District, although initially the process for doing so was unclear. 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' in September 2006. This event was the organisation's formal launch and was attended by over 400 people (Figure 4.4.).

Since then TTT has grown to have 10 working groups exploring different aspects of Transition. The process uses creative engagement tools, such as Open Space, World Cafe, Fishbowl⁷, as well as running training workshops and having other 'Great Reskilling' events, including a popular gardening course. Some tools have been identified in Chapter 3 as innovative research tools in their own right. TTT has been successful in attracting nearly three-quarters of a million pounds of funding into the town, which has supported its core costs and also a range of projects.

⁷ Fishbowl is another technique for the discussion of complex issues in a non-adversarial way. It allows an entire group to participate in a discussion.

Transition Town Totnes
presents;

**The Official Unleashing of
Transition Town Totnes.
Totnes Civic Hall. 8pm.
Wednesday September 6th.**



TRANSITION TOWN
TOTNES

Transition Town Totnes is a new initiative seeking to engage the community in the process of designing a practical pathway to a more sustainable society. This evening will be opened by **Pruw Boswell**, the Mayor of Totnes, and will feature presentations by;

Dr. Chris Johnstone, author of *'Find Your Power'*, whose work specialises in addictions and ecopsychology, will talk about how a community such as Totnes can find its collective power and strength to embark on this great adventure to a lower energy future.



Rob Hopkins, founder of the TTT initiative, is a permaculture teacher and writer, who is researching a PhD at Plymouth University on community responses to peak oil as well as running www.transitionculture.org, a website which explores these issues.

The evening will be inspiring and will set out how the TTT initiative will work and will also invite your thoughts on the transition to a low energy, more localised Totnes. All are welcome. Free of charge.

For more information call 07868604454
or email: robjhopkins@gmail.com
www.transitiontowns.org/Totnes
www.transitionculture.org

Figure 4.3. The poster for the 'Official Unleashing of Transition Town Totnes.
(Source: Transition Town Totnes).

TTT is now a limited company, and is seen by many as a key community organisation in the town (SHDCb. 2007, Wikipedia 2009). It has done a lot of work building networks with other organisations and holds regular public events.

There are many active projects underway as part of the TTT initiative (which are shown in Table 4.4.).

TTT Project	Description
Business Resource Exchange (Swapshop)	One company's waste/spare resources used as input to another
Totnes Healthy Futures (Community Garden)*	Creating a Community Food and Wellbeing Garden within easy walking distance of Totnes
Energy Descent Pathways (EDP)*	Create vision of Totnes in 2030 then define pathways to take us there
Energy Efficient Lighting for Business	Driving a switch to low energy lighting for high street retailers
Garden Share	Matching unused garden space with garden-less growers
Local Complementary Health Directory	Increase public awareness of local complementary practitioners. Encourage cooperation between practitioners in preparing for a post-peak oil Totnes.
Local Food Guide	Promotion of local produce and independent outlets
Nut Trees	Planting nut trees around town and training tree guardians
Oil Vulnerability Audits	Helping businesses quantify their exposure to rising oil prices and assess risk
Solar Thermal Challenge	Bulk purchase and promotion of solar thermal kit for hot water on 50 homes
Sustainable Fish	Encourage local commercial outlets to purchase from sustainable stocks
The Great Re-skilling	Practical training programme to re-establish skills
Totnes & Dartington DPD Response	Compiling TTT's response to this important planning document
Totnes Pound	The town's own local currency, now accepted in over 70 shops in the town
Transition Library	Wide selection of transition-related books & films available for free in Totnes
Transition Tales	Storytelling the future to educate and inspire
Transition Together*	Small social based groups that take on their own practical-based transition agenda, based on a workbook

Table 4.1. Table showing projects currently active within TTT (September 2009, Source: TTT website).

The question of TTT's impact since its launch was explored in the questionnaire, focus groups and in depth interviews. When asked if they had heard of TTT, 75% stated that they had. Those who had answered 'yes', were then asked if they ever participate in any of its events. 59% stated never, 35%

'occasionally', 4% regularly, 2% often. So what form might that involvement take? A representative of Totnes Chamber of Commerce voiced his concerns about the degree of engagement being generated.

"One question mark I'd have about Transition is I go to meetings attended by a couple of hundred people or more, a great cross section, but I'm wondering how many people who there are for whom that meeting is their commitment to post peak oil and climate change, because that's no good. It's no good providing people with entertainment, the feeling they've done something when they haven't done anything, that just by turning up and getting information they've done their bit".

A local businessman interviewee echoed this, stressing his desire for "some practical research work, development work, something actually being done, not just sitting and watching a film and going home feeling better about everything".

Survey respondents were asked which events they had attended, and the initial findings could be argued as confirming the reservations of the above two interviewees. The largest response (55%) was those who had attended a talk or workshop. Next was use of the Totnes Pound (34%), then involvement with one of TTT's working groups (20%).

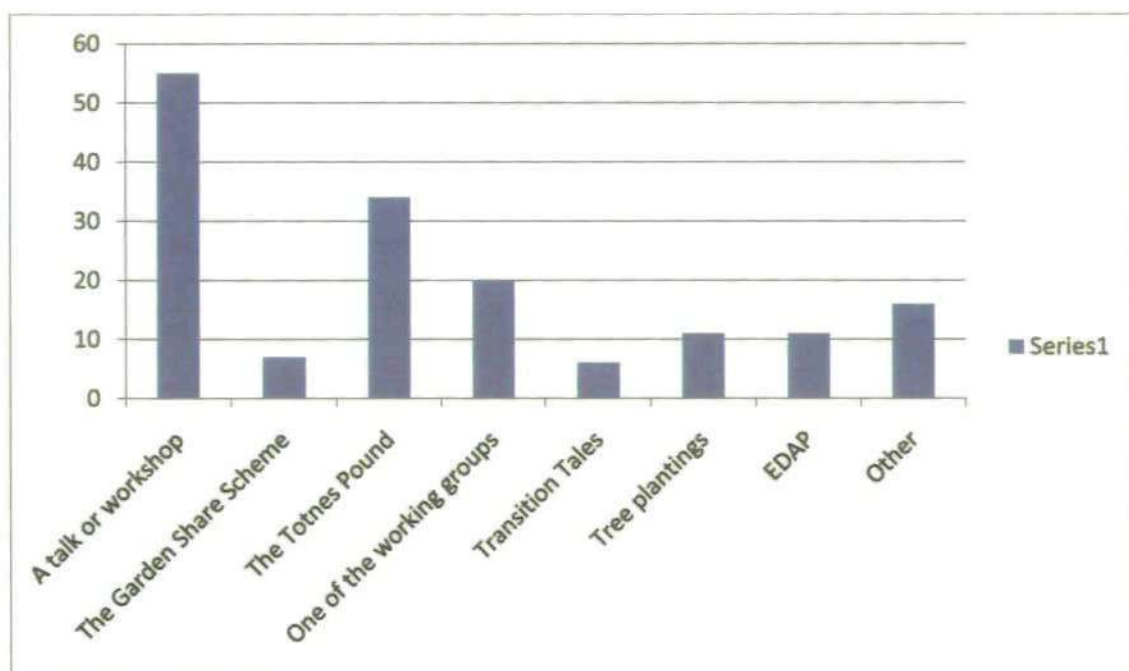


Figure 4.4. Involvement in the activities of TTT, from those who stated they had engaged with the organisation, identifying the aspects of the organisation's work they had participated in (Source: author's questionnaire 2009).

Finally, those who had stated that they had heard of TTT were asked "do you feel that the work TTT is doing is relevant to your life and to your concerns?" 61% stated that they felt it was either highly relevant or relevant, with just 10% dismissing it as 'completely irrelevant'.

DC1 set out the different spheres of community life he felt had been impacted by TTT: "It's clearly had a major impact on what you'd call the collective community. If you are talking about a statement of vision and policy for the community, particularly the DPD (see 6.2.3.) of the town, they've clearly had an impact on that. The EDAP has filtered into everyone's plans for everything, so that's had a major impact." TC2 talked about his experience of TTT: "The concept, the idea, is so simple. You can just explain to people the oil is going to run out, what the hell are you going to do? What's actually been happening

over the last 3 years is people are becoming more aware of it, they're understanding it, but to me, the greatest thing it has done is that it has brought people together". Later he added "what it's done, and I think there's a grudging respect for this, it has highlighted the profile of Totnes". The Chamber of Commerce representative reflected on the impact of TTT on the business community: "I'd say that one of the biggest things that has increased footfall in Totnes has probably been TTT. It has been one of the things that's had the most column inches concerning Totnes in the national and international press, and it's those column inches that bring people in".

A reporter on the Totnes Times was effusive about TTT's impact: "Oh it's had a huge impact! When I first heard about it I thought this could just be a bunch of cranks! And I've had my eyes opened consistently. Throughout the years it's just grown and grown and it's been something that I can really take an interest in and help with in a small way. I have been impressed with it, and it's a phenomenon. It's amazing. I haven't heard a bad word about Transition. Everyone I've spoken to believes your hearts are in the right place and let's get on with it".

4.6. Reflexivity and Positionality

At this point, it will be clear to the reader that I am not able to assume an entirely impartial and neutral position in relation to the subject of this PhD. The striving for reflexivity and positionality in this research presents a number of challenges. As McDowell (1992:409) puts it, there needs to be "recognition of the positionality of the researcher and her/his subjects and the relations of power between them". Denscombe (2003:300) writes that "the conceptual tools

they (the researcher) use to understand the cultures or events being studied are not, and never can be, neutral and passive instruments of discovery". As the founder of the Transition concept, and in my role both within TTT and within the Transition Network, I am clearly deeply immersed in the movement, in its history and its evolution. I am a white, middle-class, left-leaning, man, which naturally brings its own influence to the research process. I am also quite well known at this stage in Totnes, which, for this research, proved to be both a help and a hindrance.

When thinking about the methodology used in this research, Corbin and Strauss (2008) highlight the challenges presented by my being so central to this research. They write "there is no doubt that emotions are conveyed to participants and in turn that participants react to researchers' responses by continually adjusting their stances as the interview or observation continues" (Corbin & Strauss 2008:31). This has implications for each of the approaches used in this research. These include;

- The questionnaire survey of 230 households in Totnes were not conducted by me in person, so as not to risk skewing responses
- Likewise, the focus groups were mostly conducted by someone else (I did one of three), so as to reduce bias. As Hoggart et al. (2002:224) put it, in focus groups, it is "hard to predict the influence of a moderator". They add that moderators "multiply issues of power, positionality and reflexivity, for relationships are not just between researcher and researched, but amongst the group (ibid p225).

- I conducted the oral history interviews myself, as, since some of those interviewed already knew me, they felt more relaxed and able to speak freely than they might have been with a total stranger.
- On the other hand, the in depth interviews may be more prone to influence. As Rice (1931:561) put it, the data obtained by an interviewer whose positionality is not clear "are as likely to embody the preconceived ideas of the interviewer as the attitudes of the subject interviewed".

Given that complete neutrality and objectivity are not possible, I hope that my making my positionality clear at this stage (it will be returned to in 8.3) will make it clear that I have conducted this research with a mindfulness of my positionality. Denscombe (2003:300) writes that "a researcher can never stand outside the social world he or she is studying in order to gain some vantage point from which to view things from a perspective which is not contaminated by contact with that social world". While that will always be the case, I remain hopeful that the results of this research, provided proper mindfulness is paid to the issues of reflexivity and positionality outlined above, will be of value.

4.7. Conclusions

This chapter has explored the basis for this case study of Totnes. It has looked at the history of the town and how it has evolved to become the place it is today. Although it has a broad and largely traditional community, it has gained a reputation as a centre of 'alternative thinking', possibly somewhat at odds with the extent to which that is actually the case. Totnes became the first Transition initiative in 2006 and has gone on to become seen as the flagship of an international movement. The literature on 'transitions management' identifies

the vital nature of places such as Totnes which are more open to being innovative and experimental than many other communities. Seyfang (2009c:1) writes "the 'transitions management' literature describes the important role of innovative niches in seeding transition to sustainability in wider social and economic systems". The work done by TTT thus far, and the impact it has had in triggering thousands of other communities to initiate similar processes would appear to back this up, Totnes serving a vital role as a 'niche' in which such ideas are supported or, at a minimum, tolerated (Bailey et al. 2010). TTT has catalysed a range of practical projects, and generated a great deal of exposure for the town, although as the next chapter will explore in more depth, it has yet to translate into behaviour change on a significant level. My own personal role was examined, and given my centrality in TTT, and also the Transition Network, implications in terms of reflexivity and positionality were explored. The following 3 chapters will now begin addressing the 5 key objectives of this study.

Chapter 5. Meeting Basic Needs: Constraints and opportunities for the adoption of relocalised energy descent pathways in Totnes.

5.1. Introduction

Part of the aim of this study is "to analyse whether and how resilience and relocalisation can be implemented in a locality based on the Transition approach, and to assess what socio-economic and community-related structures would be necessary to implement such a relocalisation process". This relates to the first objective, that of trying to understand the constraints and opportunities of relocalisation. Accordingly, this chapter initially looks at attitudes within the community to the concept of economic relocalisation, drawing from survey, focus group and interview data. It then explores the concept of needs, drawing on Kasser's (2002) model of needs (see 5.3.2), focusing on the first need for security and sustenance. Four key aspects of sustenance and relocalisation are explored (food, energy, housing and transport) setting the relocalisation of Totnes and district within the wider debates about localisation. It builds on Kollmus and Agyeman's (2002:248) observation that "many pro-environmental behaviours can only take place if the necessary infrastructure is provided". Transition is, in many ways, an exploration as to what that 'necessary infrastructure' is, and how to implement it. Also explored are relevant initiatives already underway locally in Totnes, and research that has been conducted by TTT as part of its EDAP process. Although re-orienting an economy such as that of Totnes is clearly an enormous and almost unprecedented task, this chapter reveals that in each of the four areas, there is already some support for the concept among academics, a

range of organisations and, increasingly (but often with mixed messages) from Government.

5.2. Attitudes to energy and relocalisation

One of the underlying hypotheses of this thesis is that community-led relocalisation is feasible. This section examines the constraints and opportunities of relocalisation, as per the first objective of this thesis, but firstly it is useful to gain a sense of initial attitudes to the idea among the community of Totnes. Do people feel it to be desirable, possible, or a flight of fancy? General attitudes to relocalisation were explored in the focus groups and the in-depth interviews.

5.2.1. Community Attitudes

In the focus group on skills and work, when asked whether she thought relocalisation was something that was possible for Totnes, one participant said "I think relocalisation is pie in the sky. There isn't the money down here. The big companies are going. Dairy Crest has gone⁸, it shouldn't have gone". Another participant intervened; "isn't that a good thing for relocalisation, for Dairy Crest to go, so that smaller local collectives can step in?" Other participants felt that relocalisation, in spite of being a nice idea, was impractical. One said "I think it has arrived too late, this Transition. I can't see it working while we still have supermarkets packing cakes in plastic cartons!"

⁸ Dairy Crest (formerly Unigate) employed 164 people in a milk processing plant adjoining Totnes train station, and closed in 2007.

A leading member of Totnes and District Chamber of Commerce, while noting the attraction of a more localised economy, argued that it will depend on the decisions people make today in terms of where they spend their money:

"You make small progress each time you raise the issue of localisation. People gripe about the number of 'useless' shops around Totnes, but I say to people, "that crystal shop down there used to be a fishmongers, and that yet another trendy clothing shop used to be a butchers. The reason they no longer are ... is because you chose to shop in the supermarket. They closed because you stopped shopping there. It's so fundamental, the way shops respond to what the public does".

Nationally, as Chapter 6 will reveal, there is an increasing use within the new UK government of the terms 'local' and 'localism' (at the time of writing a 'Localism Bill' is soon to pass through the House of Commons), and some support for the concepts of local food, community renewables and for increased community empowerment. However, at present, this takes place within a wider context of economic growth and globalisation, and Walker et al. (2007:72), in their reflections on the previous Government's enthusiasm for community renewables, questioned "the extent to which it can be presumed to embody any form of collective communitarian principle". DC2 expressed enthusiasm for the concept of localisation:

"The only way you know it isn't going to work is if you try it. How much better would it be if people could live and work without having to get into a car to drive twenty or thirty miles, bearing in mind there might not be the petrol to do it anyway, and how much cheaper if they could grow their own food. I think Totnes is an ideal place for co-operatives and co-housing. It's got enough land around it to enable that to happen, and

quite a bit of industrial sites, and we're always looking for more, and maybe something like that as a starting point, like Dairy Crest, would show everybody what they could achieve. Totnes is big enough to enable it to happen, but small enough to have the interest to want it to happen".

This thought that Totnes is the ideal size to be able to model localisation and to demonstrate what is possible was also voiced in the focus group on work and skills, where one participant said "I think Totnes could do it (relocalisation), because it has lots of free thinking people who are willing to look outside the box, and that's what makes it more likely to happen here than anywhere else", to which another participant replied, "I think if we do this right, we'll show that format to the rest of England".

5.2.2. Local Government Attitudes

Equally relevant to the exploration of community attitudes about relocalisation is an exploration of those found within local government. As the organisation with the most influence over the strategic development of the town, SHDC are key. The in-depth interview with SP1 provided insights into the Council's perspective on energy and relocalisation. He argued that sustainability in general is deeply embedded in the work of the Council, and that "in relation to climate change, there is, if you like, a growing corporate awareness, climate change is increasingly embedded across the organisation". SHDC is part of the Carbon Trust's corporate carbon reduction programme. It has a target to reduce its emissions by 20% in 2 years (due to possible restructuring of local government by the Boundaries Commission) most of which it hopes to achieve through its vehicle fleet. Other interviewees were less positive about SHDC's commitment to climate change. DC3 described it as "pretty appalling". DC1 said "they will

say the right things when there is no action required, but in terms of actually doing the action it's extremely low". DC2 distinguishes between climate change and the broader "safeguarding the environment". For her, SHDC "are very keen that if there's a large development, there's an environmental study done and that plantings and things are put in place", but, she adds, "when it comes to things like global warming... they're maybe not so forthcoming".

The SHDC officer argued that the 2008 oil price spike of \$147 a barrel focused the mind, describing its implications as "quite terrifying". Peak oil, he noted, is "an incredibly persuasive argument", although he acknowledged how difficult it is to make meaningful changes, for example in terms of its refuse collection fleet, stating "it is very difficult for us to radically shift the way we power those sorts of vehicles". When asked about relocalisation, he stated "it's attractive", but immediately posed the question, "but what is our role in that?", a question this thesis will return to in Chapter 6.

5.3. The Practicalities of Relocalisation: the scale of the challenge of meeting basic needs

"Resilience implies the capacity to withstand and recover from disturbances, but critical parts of our infrastructure, including the electric grid, energy systems, food system, information technologies, and transportation networks, are highly vulnerable, not just to terrorism but to the cascading effects of breakdowns, accidents and acts of God"

(Orr 2009:174)

5.3.1. 'Reflexive' and 'Unreflexive' Localism

The following four sub-sections examine in more detail the practicalities of relocalisation in the four areas of food, energy, housing and transport. This is done with awareness that the process of relocalisation on its own may not necessarily be beneficial. DuPuis and Goodman (2005:360) distinguished between 'reflexive' and 'unreflexive' localism. "Unreflexive localism", they argued, "can have two major negative consequences. First it can deny the politics of the local, with potentially problematic social justice consequences. Second, it can lead to proposed solutions, based on alternative standards of purity and perfection, that are vulnerable to corporate cooptation". They echoed Seyfang's (2007:126) argument that "the local can be a site of inequality and hegemonic domination, not at all conducive to the environmental and social sustainability often automatically attributed to processes of localisation by activists". Section 2.7.2. looked in more detail at the arguments for and against localism/localisation, but it is worth noting here, alongside the concepts of reflexive and unreflexive localism, what Winter (2003) called 'defensive localism'. As DuPuis and Goodman (2005:366) observed, "local social movements supporting sustainability need to ask whether there are costs to allying themselves with xenophobic sectionalism or 'defensive localism'. There may also be a cost to alliances with local elites that stand to benefit from localisation". This tension between reflexive and unreflexive localism will be kept in mind through 5.4 – 5.7.

5.3.2. Might Localism Better Meet Key Psychological Needs?

There is, from Maslow (1943) onwards, much study as to the nature of 'needs'. Maslow arranged his needs in a hierarchy, building from those he felt needed to

be met first. Kasser (2002) presented what he saw as being the key psychological needs, but observed that research on Maslow's hierarchy is mixed with regard to its validity, so his four needs are presented in a non-hierarchical order.

Kasser's four needs, which he argued are "basic to the motivation, functioning, and well-being of all humans" (Kasser 2002:24) are;

- Safety, security and sustenance
- Competence, efficacy and self-esteem
- Connectedness
- Autonomy and authenticity

While the last three of these will be explored in more detail in Chapter 6, what follows is an exploration of the first, what Kasser described as "the needs we have for food on our tables, a roof over our heads, and clothing to protect us from the weather – the essentials of life" (ibid:24). They also echo the third of Homer-Dixon's (2007:281) actions for building resilience, (see 2.5.4), "boost[ing] the overall resilience of critical systems, like our energy and food supply networks". For this study, these will be stated as food, energy, building/housing and transportation.

5.3.3. The Localisation/Globalisation Tension

Totnes and district is clearly still a long way from being the low carbon, relocalised economy proposed by the Transition movement, embedded as it is within nested hierarchies of economic, political and geographical influence, in which the prevailing trend is generally in the opposite direction (e.g. Friedman 2006). The predominant trend is that of globalisation, described by Robertson (1992:8) as "both a compression of the world and an intensification of the world

as a whole". Pacione (2009) identifies 3 forms of globalisation, *economic* globalisation, *political* globalisation and *cultural* globalisation. Kanner & Soule (2003:51) define economic globalisation as "the extension of export-centred, free-market capitalism from the developed countries, led by the United States, to the developing nations". They attribute several principles on which it is based;

"(these) include the primacy of growth; the need for free trade to stimulate growth; the removal of governmental laws that inhibit the international movement of goods, services, and money; and the belief that every country should produce only those products that it can competitively market in the global economy, while importing everything else, a philosophy called *comparative advantage*" (ibid).

Clearly the kind of relocalisation being discussed here runs counter to this, although a growing number of voices now question economic globalisation from various perspectives, such as its inherent dependency on cheap fossil fuels (e.g. Rubin 2009), the *damaging social, health and psychological effects* of the materialistic values on which it is based (Kasser & Kanner 2003, Cullen 2004, James 2008), the inherent unsustainability of the idea of perpetual economic growth (Jackson 2009) and its inbuilt tendency to damage the climate (Sobhani & Retallack 2001, Hamilton 2010). Indeed for North (2010a), peak oil and climate change mean that it is not the case that economic, political or cultural globalisation will be affected more or less than each other. In effect, all of them have been made possible by the availability of cheap fossil fuels, and will be curtailed by its diminishing availability:

“The need to cut emissions and reduce energy use means it now needs to go through a process of time–space re-extension where transport again becomes significant in terms of cost, resource use and emissions. Currently very cheap goods produced through globalised production networks will become, and remain, more expensive. The currently near will become further away, again, in a process of ‘reverse globalisation’” (North 2010a:8)

A taste of the vulnerability of all 3 forms of globalisation was noted, albeit briefly, when, in April 2010, the eruption of Mount Eyjafjallajokull in Iceland, as Monbiot (2010:unpaginated) observed “made everywhere feel local, interchangeable. Nature interjects, and we encounter – tragically for many – the reality of thousands of miles of separation. We discover that we have not escaped from the physical world after all”.

5.3.4. Beyond Economic Growth

Increasingly, a direct link is being drawn between increasing availability of cheap fossil fuels and economic growth, a link that has been demonstrated both historically and theoretically (Cleveland, et al. 1984, Ayres et al. 2003, Ayres et al. 2009). Georgescu-Roegen (1971) is acknowledged as the first to argue that neoclassical economics is founded on an unrealistic neglect of material and energy flows. As Rubin (2009:206) puts it “virtually every dollar of world GDP requires energy to produce”. For Porritt (2005:63) peak oil is one of the key factors alongside exponential growth that necessitates a profound rethink of economic systems; “conventional economic growth and cheap oil have marched hand in hand for the best part of 60 years; within just a few years, it will have become increasingly apparent that both are on their last legs”. Trainer (2007) argues that without cheap fossil fuels, a consumer economy based on the idea of economic growth cannot be sustained. Korowicz (2010) and Heinberg (2010)

have both explicitly stated that, in their opinion, peak oil will spell the end of global economic growth. The current dominant incarnation of the capitalist model depends on the issuing of money as debt which, in turn, necessitates economic growth in order to meet the demands of that debt in such a way that that debt can never be fully repaid (Ayres et al. 2009, Douthwaite 1999), which in turn depends on the availability of cheap energy to enable sufficient economic activity (Rubin 2009). As Ayres et al. (2009:308) summarise, government borrowing "is secured only by financial markets' faith in the future ability to pay, based on the expectation of increasing tax revenues resulting from future GDP growth".

Jackson (2009) has called for a shift from *quantitative* to *qualitative* growth, arguing that the term 'prosperity' needs redefining, as has Victor (2008). A major research gap exists here as to whether economic growth is possible on the local scale in the wider context of an economy which is not growing, such as Daly's (1991) 'Steady State Economy', which builds on the earlier work of economists such as Soddy (1926), Polanyi (1944), Boulding (1966) and Mill (1987). In the same way that Transition sees localisation as an inevitability necessitated by the end of the availability of cheap energy, it likewise increasingly sees the role of Transition initiatives as being to prepare communities for a post-growth world. In relation to climate change, all of the large-scale plans for responding to climate change thus far produced (e.g. Monbiot 2007, UK Government 2009, European Climate Foundation 2010), even the New Economics Foundation's 'Green New Deal' (Green New Deal Group 2008) all assume economic growth to make their recommendations possible. The Stern Review on the Economics of Climate Change (Stern et al.

2007:187) even based its assumptions on the belief that "there is enough fossil fuel in the ground to meet world consumption demand at reasonable cost until at least 2050".

Unit	District	Region	Nation	Continent	Globe
Size (miles)	20	100	500	2000	10,000
Population	100,000	2 million	50 million	1 billion	5 billion
Production	Food crops	Building materials	Clothes, textiles	Vehicles	Microchips
	Cash crops	Processed food	Small machines & components	Electronic systems	Pharmaceuticals
	Housing	Furniture	Electronic devices	Small aircraft	Large aircraft
	Energy (micro-renewables)	Hardware	Steel	Ships	
	Energy-efficiency, housing, retrofitting	Renewable energy (wind, hydro, solar)	Oil, gas, coal		
Distribution	Fresh food	'Groceries'	Civil engineering		
	Daily supplies	Clothes	Books, films, bicycles		
Services			Bulk commodities, e.g. grain	Oil, gas	
			Industrial machinery		
			Books		
			Cars		
			Household appliances		
	Schooling	Universities	Insurance	Aviation	
	GP medical	Hospitals	Railways		
	House repair	Public Health	News Media		
	Restaurants	Safety	Telecom		
	Hotels	'High Street' and local banking	Wholesale banking		
	Waste recycling	Buses	Electricity		
		Theatre/cinema			
		Water			

Table 5.1. Minimum size units for adequate economies of scale (Source: Spratt et al. 2009)

5.3.5. Localisation and Local Economic Regeneration

Might it be that the key to future viability for economies such as Totnes could lie in localisation rather than globalisation? One of the ways in which localisation already can benefit local economics is through the phenomenon known as the 'multiplier effect'. This is the observation that supporting locally owned businesses results in more money cycling locally than is the case with supporting chain shops. Ward and Lewis (2002) examined the local economic benefits arising from local food networks, and found that £10 spent with a local grower circulated two and a half times locally, being worth £25 to the local economy, whereas the same money spent in a supermarket left the community much quicker, with a multiplier of just 1.4, being worth just £14. This applies however, not just to food, but also potentially to energy, building materials and to transport. Yet even if the political and cultural will can be generated for such a transition, the practicalities are considerable, and push against the prevailing economic and political tide. Table 5.1. is a practical riposte to the suggestion that localisation equates with self sufficiency and isolationism, attempting to set out what is possible at what scale. It embodies Mayo's (in Douthwaite 1999:ix) explanation of localisation:

"Some ... imagine the aim of economic localisation is complete self-sufficiency at the village level. In fact, localisation does not mean everything being produced locally, nor does it mean an end to trade. It simply means creating a better balance between local, regional, national and international markets. It also means that large corporations should have less control, and communities more over what is produced: and that trading should be fair and to the benefit of both parties... Localisation is not about isolating communities from other cultures, but about creating a new, sustainable and equitable basis on which they can interact".

Picking up on this, sections 5.4 – 5.7 explore in more depth the practicalities of some of those identified as being viable on the district scale, and asks what is the scale of the challenge relocalisation would present, and what are the obstacles and challenges that arise?

5.4. Food: Can Totnes Feed Itself?

“... to draw in our economic boundaries and shorten our supply lines so as to permit us literally to know where we are economically. The closer we live to the ground that we live from, the more we will know about our economic life; the more we know about our economic life; the more able we will be to take responsibility for it” (Berry 2010:35)

5.4.1. Introduction

Sections 5.4-5.7 now explore the practical application of the concept of intentional localisation, starting with food, then moving to building materials, and then energy and transportation. What degree of localisation is possible, and what degree is, in fact desirable. 5.4 starts by looking at food, the most fundamental of the four. Of the four, food is the one people are most familiar discussing in the context of localisation. 5.4 therefore explores the question of the practicalities of relocalisation in the greatest depth, in order to draw comparisons across to the other areas of study.

5.4.2. Conceptualising Local Food Systems

Few areas of modern life are debated as vigorously as the food system. There are those who argue that the globalisation of the food system stimulates competition and results in cheaper food and wider choice. This view was

summed up by former DEFRA minister Margaret Beckett (2006:unpaginated), who told a 2006 conference;

"...it is freer trade in agriculture which is key to ensuring security of supply in an integrating world. It allows producers to respond to global supply and demand signals, and enables countries to source food from the global market in the event of climatic disaster or animal disease in a particular part of the world. ...it is trade liberalisation which will bring the prosperity and economic interdependency that underpins genuine long term global security".

Conversely, there are also those (Schlosser 2002, Heinberg & Bomford 2009) who argue that our food system is becoming steadily less resilient. The UK government's take on food security is moving more in the direction of taking national food security seriously as an issue. In 2003, DEFRA argued that "national food security is neither necessary, nor is it desirable" (DEFRA 2003:unpaginated). This perspective had begun to change by 2008, when a Cabinet Office Strategy Unit (Cabinet Office 2008) analysis of food issues argued that "existing patterns of food production are not fit for a low-carbon, more resource-constrained future". DEFRA's 'Food 2030' report (DEFRA 2010b:7) set out its vision for the future of the nation's food and farming in 2030 thus;

- Consumers are informed, can choose and afford healthy, sustainable food. This demand is met by profitable, competitive, highly skilled and resilient farming, fishing and food businesses, supported by first class research and development.
- Food is produced, processed, and distributed, to feed a growing global population in ways which:
 - use global natural resources sustainably
 - enable the continuing provision of the benefits and services a healthy natural environment provides

- promote high standards of animal health and welfare
 - protect food safety
 - make a significant contribution to rural communities, and
 - allow us to show global leadership on food sustainability
- Our food security is ensured through strong UK agriculture and food sectors and international trade links with EU and global partners, which support developing economies.
 - The UK has a low carbon food system which is efficient with resources – any waste is reused, recycled or used for energy generation.

However, the gulf between the more localised food system of the 1950s, still with its roots in the 'Dig for Victory' culture of World War Two (Viljoen 2005, Kynaston 2007), (more intimately revealed in the oral histories featured in this chapter's text boxes, Text Box 5.1. offering a sense of what a small proportion of food consumed was imported), and just-in-time, carbon intensive, long supply chain supermarkets (Hendrickson & Heffernan 2002) remains profound.

The major trends in food of the past few decades include the intensification of agriculture, accompanied by a concentration in the control of agricultural inputs, and a trend to larger farm sizes with hired labour globally, accompanied by increasing fragmentation among marginalised smallholders (Wilson 2007, Eriksen 2008), and globally agriculture is coming up against the pressures arising from increasing demand as well as the stresses caused by soil degradation, over-fishing, water constraints and the increasing impacts of climate change (Godfray et al. 2010). These have been accompanied by increasing concerns over the economic dominance of large corporate interests (Shiva 2001, Pollan 2007, Lawrence 2008) and increased energy use in agricultural systems and food processing (Matson et al. 1997, Pfeiffer 2006).

"Looking back, practically all our food came from this area. We had a couple of house pigs that ate the rubbish. A local chap would come by, cut their throats and cut them up, and make bacon and hams. We used to preserve it in saltpetre, the wives would make a salt solution and baste it every 2 days, then it was put up on hooks in the dairy to dry. I still have the hooks out there now. I suppose we might have had an orange on very special occasions. Our main meal was lunch, not supper, if the husband worked at home. Evening meals were a professionals' thing. Lunch was normally roast beef, mutton, hot or cold. Hot or cold chicken, stews, potatoes and veg, peas and beans, potatoes baked or boiled. We ate meat every day, hot or cold, depending on how the husband and wife were getting on! For tea we had bread and butter, jam and cream. For breakfast it was bacon and eggs. Supper was just a snack meal, bits and pieces of what you liked. For fruit we had apples, pears and plums. Apples could be kept all year round. They were kept in a cellar under the house. Certain kinds of pears could be kept. We had greengages and plums; we usually made those into jams".

Text Box 5.1. A Local Diet in Staverton in the 1940s. (Source: author's oral history interview with Douglas Matthews (for full manuscript see Appendix 2)).

One study at Cornell University showed that in the mid-1990s the US used over 100 billion barrels of oil per year to manufacture food (Morgan 2008), and in the UK, the average distance travelled by food items is 5000 miles from field to plate (Pretty et al. 2005). A study by Simil (1999) estimated that in the absence of nitrogen fertiliser, currently produced from natural gas and itself a resource with a depletion profile similar to that of oil (Darley 2004), no more than 48% of today's population could be fed at the inadequate per capita level of 1900. In the context of peak oil and climate change, the oil dependency of intensive agriculture is not sustainable, plus as Hirsch (2005) argued, the move from oil dependent systems to oil independent ones requires time, intentional design and focused effort.

In recent years farming has decreased in its perceived significance, and is no longer the dominant economic activity in the overall food system (Eriksen 2008). The disconnect between communities and the source of their food has grown markedly. As Hendrickson and Heffernan (2002:349) put it, "as people foster relationships with those who are no longer in their locale, distant others can structure the shape and use of the locale, a problem that is being explicitly rejected by those involved in local food system movements across the globe". As Morgan & Sonnino (2008:7) identified, "scientists and policymakers alike are beginning to realise that food systems hold the potential to deliver the wider objectives of sustainable development – economic development, democracy and environmental integration".

For some, the concept of food relocalisation is central to notions of food security (Pothukuchi 2004), and also to the very notion of sustainability in relation to food. Terms such as 'local food', 'food localisation' and 'relocalisation' are used in the literature almost interchangeably. For Peters et al. (2008:2) they all share the concept of "increasing reliance on foods produced near their point of consumption relative to the modern food system". For Seyfang (2008:5) defining local food is a straightforward matter: "localisation of food supply chains means simply that food should be consumed as close to the point of origin as possible". Kloppenburg (2000:18) argued that a sustainable food system embodies a deeper and more far-reaching transformation: "locally grown food, regional trading associations, locally owned processing, local currency, and local control over politics and regulation", some of the themes explored later in this study. The idea that food relocalisation will by necessity lead to more sustainable farming practices is also put forward by Renting et al. (2003:398)

who believe that "a 'shortening' of relations between food production and locality, potentially [configures] a reembedding of farming towards more environmentally sustainable modes of production". For Feenstra (1997:28) "the development of a local sustainable food system not only provides economic gains for a community, but also fosters civic involvement, cooperation and healthy social relations". However, DuPuis and Goodman (2005:369) warned against what they called the "reification" of the local, arguing for the need to make localism "an open, process-based vision, rather than a fixed set of standards". The danger of local food becoming an exclusive, middle-class niche is, they argue, very real, a charge already levelled by some at organic food. Former Minister David Miliband dismissed the health benefits of organic food and described it as a "lifestyle choice" (Jowitt 2010:unpaginated).

But what geographical and spatial form might a relocalised food system take? Kloppenborg, drawing from the earlier concepts of the bioregional movement (i.e. Sale 1993) and Getz (1991) conceptualised the notion of a 'foodshed', defined by Peters et.al (2008:2) as "the geographic area from which a population derives its food supply", and perceived these as hybrid social and natural constructs (Feagan 2007:26). The foodshed is linked conceptually to the watershed. Kloppenborg et al. (1996:34) stated "how better to grasp the shape and the unity of something as complex as a food system than to graphically imagine the flow of food into a particular place?"

For some, the foodshed concept has much to recommend it. Starr et al. (2003:303) believed that "foodsheds embed the system in a moral economy attached to a particular community and place, just as watersheds reattach water

systems to a natural ecology". At the time of writing, much of the literature about foodsheds is conceptual, little has been written that explores the actual practicalities and potential obstacles of such a degree of intentional relocalisation. A report associated with the preparation of this study has been published (Hopkins et al. 2009), entitled "Can Totnes and District Feed Itself?" which set out to explore the potential of the local landbase to support the local population. This built on Mellanby's (1975) initial study which asked the same question on a national scale, and Fairlie's (2008) subsequent update. It also takes, by way of answering the question of what form of agriculture would be most appropriate within these foodsheds, Tudge's (2003:357) model for a localised, what he called 'Enlightened', agriculture:

"The general answer (by and large) is to give the best, most suitable land to pulses, cereals and tubers (that is, to arable farming); to fit horticulture in every spare pocket – and be prepared to spend a lot of time and effort on it, and to invest capital for example in greenhouses; to allow the livestock to slot in as best it can in short, farms in general should be mixed: even the most committedly arable areas would in general benefit from at least some livestock, as all traditional farmers knew ... the areas that are truly marginal – too high, too steep, too rocky, too dry, too wet – can be ideal for ruminants, notably sheep and cattle ... some cereal and pulse can be grown expressly for livestock – but in general, only enough to keep them going through the winter, so they can make better use of the grazing in the summer".

Tudge's exhortation to "fit horticulture in every spare pocket – and be prepared to spend a lot of time and effort on it, and to invest capital for example in greenhouses" was a fact of daily life in Totnes until 1980, with the presence of three working market gardens within the town, as described in Text Box 5.2.

Gills Nursery was one of three market gardens in the town (Heath's and Phillips being the others). The nursery was run by Jack Gill until 1973, when his son Ken took over, who managed it until the nursery closed in 1981. Running a series of glasshouses which were kept warm all year round required a lot of energy. Initially they were heated using coke, which required 10 tons a year, but they later moved to the less labour intensive oil, necessitating the burning of 2000 gallons of oil a year in order to generate sufficient warmth. The site behind the shop was not the only site Gills managed. They also had a site on Harpers' Hill, where they grew potatoes and sprouts, and one on North Street, where, Ken recalls, "we grew raspberries, in spite of it being north-facing, somehow it was warm enough for raspberries". Later they also acquired a 3½ acre site beside the bypass, which was used for field scale vegetable production. The main nursery was kept fertilised with manure from their own pigs topped up with manure from a local farmer. "We had no complaints with our fertility", he told me, "one year we grew 20,000 lettuces", an extraordinary output from a small piece of ground. Running a market garden and a shop was hard work. Ken Gill recalls working 12-14 hour days, seven days a week during the summer months, and David Heath describes his father's choice of career as 'bloody hard work'. Unlike Heath's, the closure of which was forced by retirement, Gill's was driven to close by a less predictable challenge. "A Highways engineer from Devon County Council came into one of the greenhouses one day, and told me and my father "you won't be picking many more tomatoes here, we're going to build a road through the place". Although the proposed road linking South Street and the newly built Heath's Way was never built (part of the road building phase which saw Heath's Nursery opened up), it created enough uncertainty, hanging in the air as a possibility for at least 10 years, that when Jack Gill died, it fell to his son, Ken, to decide whether or not to invest in modernising and expanding the Nursery. Given the degree of uncertainty, he decided it would be unwise, and the nursery was slowly wound down

Text Box 5.2. Gills Nursery, an urban market garden in the centre of Totnes:
(Source: author's oral history interview with Ken Gill).

5.4.3. Empirical Modelling of Local Food Systems

Within the Transition movement, a few initiatives other than Totnes have made attempts at answering this question using a variety of approaches, such as

Norwich (Transition Norwich 2009), Frome (Sustainable Frome 2009) and Stroud (Transition Stroud 2008), which in turn pick up on earlier work which explored the ability of different regions of the world to feed themselves under various future scenarios (Penning de Vries et al. 1995, WRR 1995). What such studies have in common, argued Cowell & Parkinson (2003:223), is that they are “based on a belief that regional self-sufficiency of food production and consumption is more likely to increase the food security of individuals than a globalised food system”. Food security, it is increasingly argued is decreased as the cheap oil that enables our current concept of food security becomes increasingly scarce or subject to volatile prices (Hopkins 2008, Heinberg & Bomford 2009). The hypothesis explored here, and in the Totnes paper, was that, provided diets were changed to feature predominantly seasonal local produce, less meat, and more grains and pulses (as set out in Fairlie 2008), Totnes and district would be able to produce the bulk of its food requirements, while still being able to export some produce. It is important here to make the point, as did Hendrickson and Heffernan (2002:361) that localisation does not refer to self sufficiency: “These alternatives”, they wrote, “require a notion of community self-reliance, rather than either dependency or self-sufficiency”, which echoes the concept from resilience science of modularity (Walker and Salt 2006). Tudge (2003:378) reinforced this point, arguing that self reliance ought to become a general principle for global agriculture:

“... it makes sense on all levels – ecological, nutritional, gastronomic, financial, social and strategic – for almost all countries in the world to become self-reliant in food. Most are perfectly well able to do so. ‘Self-reliance’ simply means that each country should strive to produce all the basic foods that it needs, so that it could feed its own people in a crisis, notably in times of political or economic blockade. It stops short of total self-sufficiency, which implies that a country produces absolutely all of its

own food, including the kinds that it cannot easily grow at home in open fields”.

Using GIS mapping technology developed by Geofutures in Bath, 'Can Totnes and District Feed Itself?' defined its area of study as being the Totnes and District boundary as defined by the Market and Coastal Towns Initiative. This boundary choice combines some useful and some arbitrary elements (see Figure 4.1.). Aside from its northern boundary, it reflects the town's original market town catchment, the boundary within which growers would choose Totnes as the market town of choice and convenience, reflecting Kloppenberg et al.'s (1996:34) earlier description of a foodshed as allowing one to “graphically imagine the flow of food into a particular place”. In this regard, as a 'foodshed' it encapsulates the catchment from which the bulk of the town's diet would have 'flowed' into Totnes town.

The northern boundary is that of SHDC so is an artificial political boundary. The area was also the area boundary when Totnes was a Borough, which as Chapter 6 will explore, may yet prove to be a more suitable political model for relocalisation. Although the Totnes and District boundary is not perfect as a foodshed, or as a bioregion, the fact that, in the main, it reflects the historical boundaries of a more localised market town catchment, makes it useful for this analysis. The question of what is 'local' in a geographic sense, has been the subject of much debate. Hinrichs (2003:6) observed that the 'local' is not neat or easy to define: “specific social or environmental relations do not always map predictably and consistently onto the spatial relation”. For Feagan (2007:34), local food systems “must bear in mind with respect to spatially bound concepts like foodsheds, that the types of food grown, how it is grown, where it is grown,

by whom and according to what sorts of cultural, social and economic needs are tied, in complex and somewhat indiscernible ways, to sociocultural factors at the macro economic and political levels", which in turn links back to DuPuis & Goodman's (2005) notion of 'reflexive' localism. In the Totnes and district context, the study focused purely on the physical ability of the area to meet its food needs, without also looking at the other elements necessary to a reflexive localism, although this is not to dismiss their importance.

The study analysed land use types, and current levels of productivity, from the most recent data available from DEFRA in 2004. Initially it looked at Totnes in relation to other settlements with populations of over 800 in the South West, mapping their 'food footprints' and how these overlap (Figure 5.1.). This process confirmed McCullum et al.'s (2005:278) observation that "food systems operate and interact at multiple levels, including community, municipal, regional, national and global". The overlaps in the case of Totnes were with the food footprint of Torbay from the east, and Plymouth from the west, highlighting how locations cannot conceptualise food security in isolation from their relationships with neighbouring settlements.



Figure 5.1. Food Footprints of settlements in the South West with a population of over 800, note location of Totnes and District (Source: Hopkins et al. 2009)

The paper then looked at the 'food zones' model developed by Julie Brown (Pinkerton & Hopkins 2009) at the Growing Communities project in London (Figure 5.2.), which attempted to define the percentages of food that a low carbon London might be able to produce for itself, how much it would need to import, and from what distances. This 'dartboard' approach is stylised, but still gives some insights into what proportion of food production could be more locally produced. It raises the question of what percentage of imports might be feasible in a more localised model. The Fife Diet initiative in Scotland⁹ aims to support people eating a more local diet. It promotes an 80% local diet, the remainder imported. When asked where this ratio had come from, Fife Diet founder Mike Small replied:

⁹ www.fifediet.co.uk

"It was about saying we didn't want the eat local movement to be a parochial retreat inwards because we believe that eating locally is an act of solidarity with the developing world in terms of climate change and climate justice. We wanted to show solidarity by buying stuff that we just couldn't get here. We also wanted tactically to say to people "look this isn't too scary – you can do this!" Of course people say they couldn't give up things like bananas or chocolate or red wine. 80-20 make it seem less scary, that's the thinking behind it" (Small 2009:pers.int).

Julie Brown of Growing Communities, who created Figure 5.2, also advocates an 80/20% ratio (but as a UK produced/imported ratio), but is less clear about why that figure was chosen, emphasising the work-in-progress nature of this debate:

"Its a hypothesis, and it needs proving. It's an aspiration. It feels right. Broadly speaking, in terms of what we're sourcing for our box schemes, which is all fruit and veg, that's what we manage to do, but we're playing around with that. I am struggling with how we measure this" (Brown 2010:pers.int).

GROWING COMMUNITIES' FOOD ZONE DIAGRAM: What a sustainable re-localised food system might look like in the future.

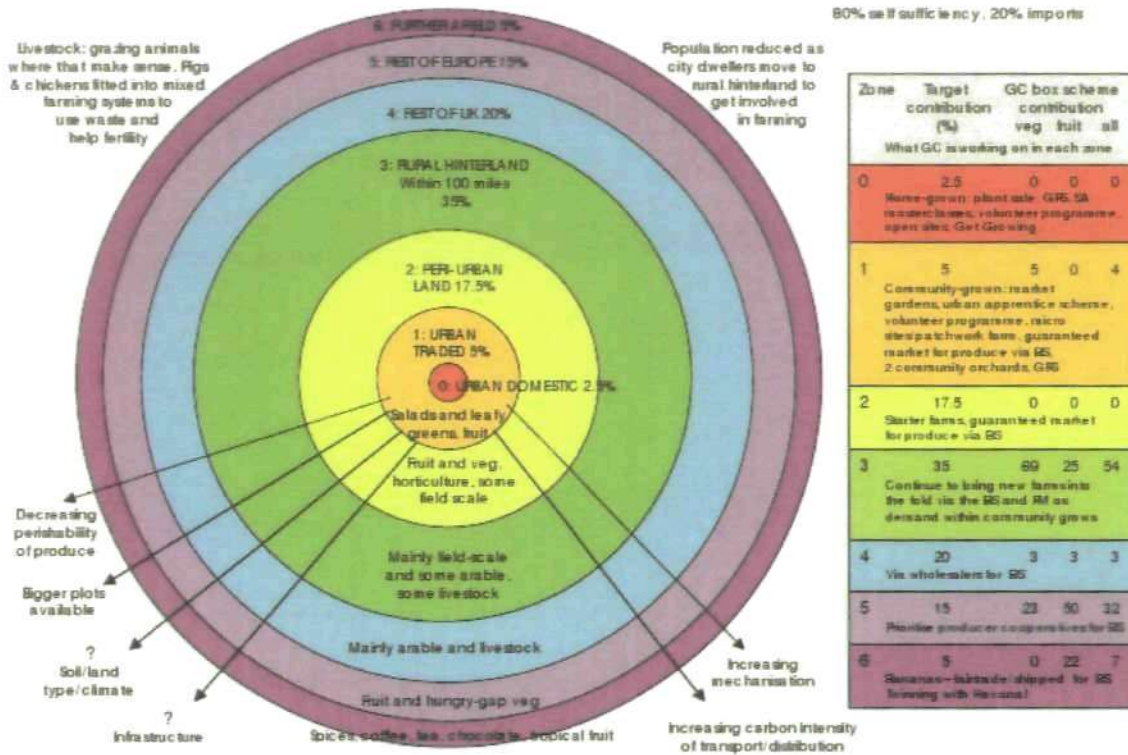


Figure 5.2. The Growing Communities Food Zone Diagram. (Source: Brown 2009)

In the Totnes study, the findings of overlaying food demand on top of the available soil types are shown in Figures 5.3. and 5.4. The conclusion drawn was that the area could feed itself in most of its key food needs, although not all on land immediately adjoining the town. Some staples, such as lamb, would need to come from further afield, as appropriate soil types do not exist close to the town. Questions were also raised about the need to also address changes in climate, the kind of diet that could be supported, and so on. What was clear was that much of what is currently considered to be available 'local food' tends to be seasonal vegetables and high value speciality foods, while bulk carbohydrates, in particular wheat and other grains, are grown at a considerable distance from the area.

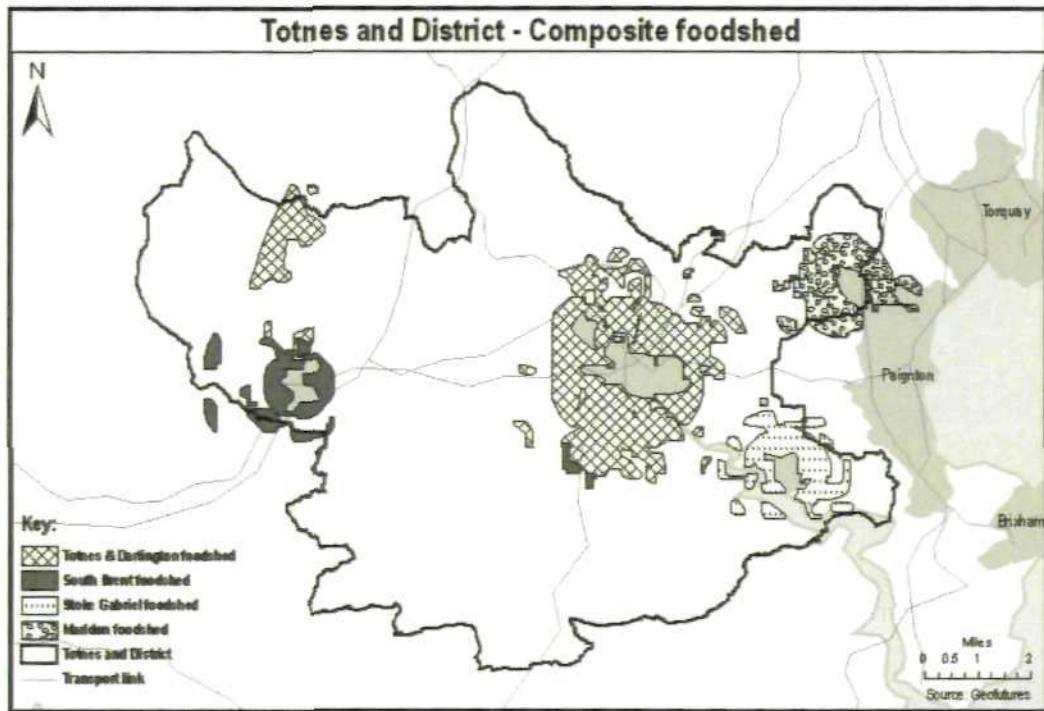


Figure 5.3. Composite Foodsheds for the four largest settlements in Totnes and District, showing how they do not accord with the 'foodzones' model (Source: Hopkins et al. 2009)

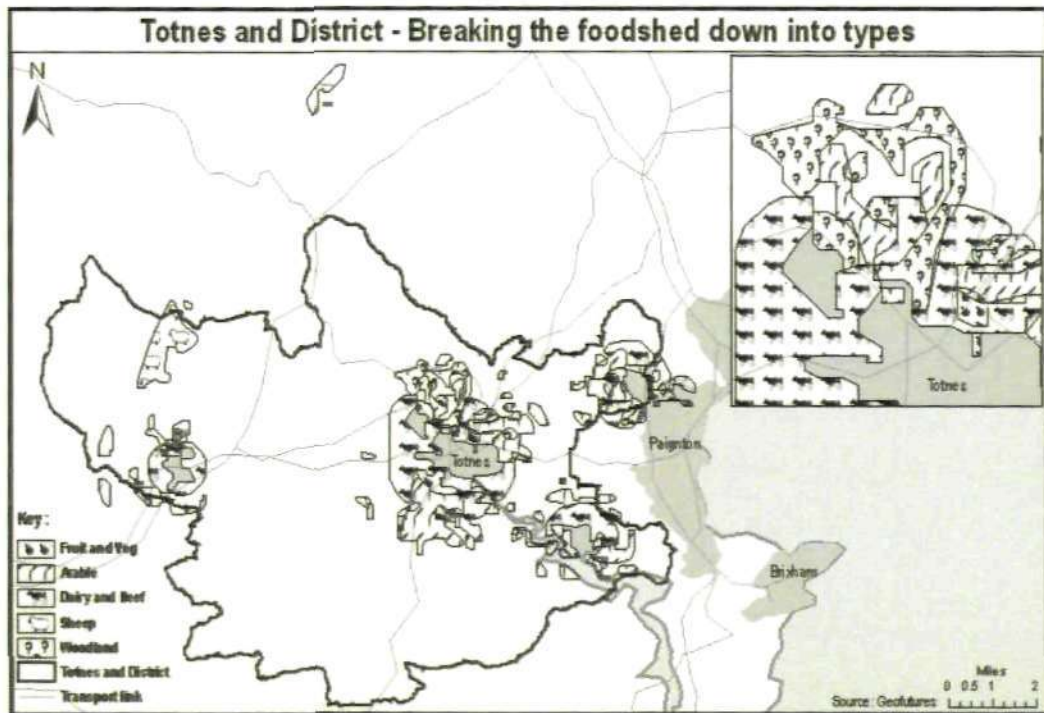


Figure 5.4. Foodsheds for the four largest settlements in Totnes and District, broken down into agricultural production types (Hopkins et al. 2009)

At this point the question arises as to how local is 'local' food? Peters et al. (2008:2) argued that, in relation to food, 'local' refers to "the concept of increasing reliance on foods produced near their point of consumption relative to the modern food system". For Hinrichs (2003:34) it is "a banner under which people attempt to counteract trends of economic concentration, social disempowerment, and environmental degradation in the food and agricultural landscape". The question of what is 'local' in relation to the Totnes and district food system is clearly important to this discussion. To what extent does peoples' sense of 'local' overlap with the tentative 'foodshed' identified above? The survey conducted for this thesis found that 40% felt that for food to be considered local it would need to have been produced within 10 miles of Totnes (see Table 5.2. below).

Oral history interviews conducted for this thesis showed that historically, the bulk of food consumed within the area would have been sourced from within the Totnes and district boundary, which is around 10 miles at its farthest from Totnes. Val Price, one of the interviewees, recalled the first time she became aware of the idea that food was something that could actually come from further than the local area, when in the early 1950s she was asked to do a school project which involved collecting the paper sheets that oranges came wrapped in at that time and compile a list of where they had come from. Until that point the idea had never occurred to her that food came from anywhere outside the local area. Andy Langford relates (see Text Box 5.3.) how much more the casual work then available on farms was a part of young peoples' lives, especially during the summer.

Andy Langford recalled picking up lots of casual work on local farms from the age of 13 onwards. In the late 1960s there were "lots of small family farms all over the place. The average farm size would have been 30-40 acres, 120 acres would have been considered quite upper class sort of farming". Many of the farms were short of labour during the summer, especially during hay making and straw baling times. His favourite was one at East Allington. "We were out there a lot. We used to go out there and the farm was pretty much run by the young people. Andy Strutt was a classmate of mine. He had 6 sisters, which was part of the attraction. Suddenly I found myself in charge of a little tractor moving around the farm picking up haybales with all these young women about and these big lunches and suppers where you could eat as many roast potatoes as you could get in yourself, that was very lovely. We basically ran the place. The children from Andy, 16, down to the rest of us, would man the potato harvester. That's what we did. We'd go out there for the weekend and harvest however many tons of potatoes needed picking, take them, riddle them, sort them into this size and that size, then get in the Landrover and deliver them to the chip shop in Kingsbridge. It was great".

Text Box 5.3. How local farms were a source of casual labour for the people of Totnes. (Source: author's oral history interview with Andy Langford).

So, what did the word 'local' mean for Totnes and district residents? The findings in Table 5.2. would seem to support the usefulness of the Totnes and District boundary, in relation to the traditional food economy of the town. 60% of respondents felt that 'local' meant between 10 and 30 miles from the town, more embedded in the wider South Hams.

	Number (%)
Immediately adjoining the town	9 (4)
As far as 10 miles	83 (40)
As far as 30 miles	42 (20)
As far as Plymouth	17 (8)
Within the South West	45 (22)
British produce	7 (3)
Don't know	5 (2)
Total	208 (100)
No answer given: 11	

Table 5.2. "Within what distance of Totnes would meat or vegetables need to have been grown/produced for you to consider them "local"? (Source: author's questionnaire 2009).

This echoes Padbury's (2006) and IGD's (2003) observation that UK consumers generally understand 'local' to be either within 30 miles, or within the same county. The Totnes data could be interpreted as inferring that within the culture of the town, the fact that it still holds regular markets, and still has a strong commercial presence from local growers, means that people feel, on some level, situated within the kind of 'foodshed' that Kloppenburg et.al (1996) refer to (see above). The role of markets historically in Totnes was also explored in the oral history interviews (see Text Box 5.4). The continuing presence of a strong culture of the importance of local food is supported by the 'Index of Food Relocalisation' produced by Ricketts Hein et al. (2006) which found that Devon was the county in England and Wales with the most local food activity, and that the bulk of the activity was focused in the South West of England (see Figure 5.6.)

The Cattle Market ran weekly in Totnes until the early 1960s. It was a key element of the local economy. Not everyone recalls it favourably. Alan Langmaid told me "on Tuesday, the town became what you would imagine the Somme to be. It was muddy, dirty, dungy, smelly, drunken, bloody and crowded". On market days the pubs closest to the market, the Kingsbridge, the Bayhorse, the Plymouth and the Bull Inn were open all day. For Andy Langford, a young teenager at the time, market day was the day when, as an underage drinker, one could get served in the pubs.

Ken Gill recalls how the Cattle Market was what brought farmers and their wives into the town, while the husbands traded, haggled and drank, the wives would go shopping, providing a vital boost for the town's economy. Although it created a certain degree of nuisance and put a huge strain on the town's traffic infrastructure, the Cattle Market's passing was, for some, a loss. Ken Gill told me "once you took away the Market it wasn't the same".

Text Box 5.4 Remembering Totnes Cattle Market (Source: author's oral history interviews).

5.4.4. The Food Culture of Totnes

The concept of the intentional relocalisation of food in the way explored in 'Can Totnes and District Feed Itself?' sits within a wider food culture which is arguably in crisis (i.e. Lawrence 2009). Fewer people cook with fresh produce or have the time or income to source local produce. So what is the current Totnes food culture? In the survey, 97% of respondents stated that they 'always' or 'often' cooked the meals they ate at home using fresh produce", but the question was unfortunately sufficiently vague as to not yield much of value. 43% of respondents stated that someone in their household grows some of the food that is consumed there, and 8% have an allotment, above the national average: a study by the University of Derby in 2006 showed a national average provision of 7 allotments per 1,000 population (Crouch & Rivers 2006).



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Figure 5.5. The Index of Food Relocalisation. (Source: Ricketts Hein et al. 2006)

The experience of shopping for food has clearly changed greatly over the past 60 years, as revealed in Text Box 5.5. Respondents were also asked to rank

their choices when they went food shopping. The list of priorities was, in order of priority; good quality, local, low price, organic, fair trade and brand. This emphasis on 'local' is borne out in Totnes High Street, where food retail shops are highly visible, often stressing the local provenance of some of their produce. The third placing of 'low price' is reflected in the focus group on food, and the decisions families make on a daily basis. In Hinrichs's (2002) study of the Kansas City Food Circle, the "unacknowledged privileged position of the group" (Hendrickson & Heffernan 2002:365) was acknowledged, a charge, they state "that can be levelled at many alternative food movements" (ibid). So to what extent did participants find the local food available in Totnes accessible?

"I used to go to the grocers and I could sit down, lovely. They'd go through your list and say, "yes, yes, we've some new whatever it is, would you like to taste some?" You'd have a little snippet of cheese or something, "great, yes, we'll have that". "Now we've got a tin of broken biscuits, but they're not too bad (half price you see), would you like them?" As soon as you put a biscuit in your mouth it's broken isn't it! Then they'd say "now Mrs. Langford, you're going to the butchers, yes, yes, and going to get some fish? Yes, yes, and paraffin? Yes, yes... and they used to say to me now bring any parcels in, we'll put it in the box with your groceries and bring the lot up for you. And they did. They'd come and deliver and you'd go through it and say that's fine and would you like a cup of tea...."

Text Box 5.5. A trip to the shops in the 1950s. (Source: author's oral history interview with Muriel Langford).

The focus group on food supported many of the survey findings, as well as uncovering many of the choices that people make in relation to food. One participant, MW, a family counsellor, opted for supermarkets for most of her food shopping "for easiness and cheapness", but claimed that "if I had more time, and even more money, then I would make the effort to buy local food. I do

believe it's important, but I don't think I can afford to do it to be honest, because I think money comes first". These findings are also supported by a study of Totnes food culture conducted in parallel to this research (Pir 2010) which found that "while Totnesians have a high level of awareness of environmental and food-related issues, this is not matched by their patterns of behaviour. First, producers and consumers seem largely motivated or constrained by the costs involving the production or consumption of foods. Secondly, the convenience of food, i.e. shopping, cooking and consumption, seems to be a priority for most consumers" (Pir 2010:92). Taken together, this appears to back up Hinrichs and Kremer's (2003:37) findings from Iowa, US, which showed that local food movement members tended to be "white, middle-class consumers and that the movement threatens to be socially homogenised and exclusionary" (DuPuis & Goodman 2005:362). Follett (2009:49) warns that "alternative [food] networks can lead to myopic and exclusive decision-making that only benefit the most educated and elite members of society". The question of not having enough time is also picked up by Hendrickson & Heffernan (2002), who identify the advantages and disadvantages of the time issue:

"Time may indeed be one of the biggest barriers for alternatives, yet one of the greatest strengths. Many alternatives do take more time, and thus are less attractive to people squeezed by work and family responsibilities, which has important class-based implications. However, that becomes a reason alternatives are difficult to replicate by the dominant firms". (Hendrickson & Heffernan 2002:361)

Kollmus and Agyeman (2002) however, refuse to take arguments of 'not enough time' at face value. "What", they ask, "are the underlying factors of 'not having enough time'"? There would appear to be a direct link between the

requirement to establish alternatives and people with time available, and the predominance of middle class participants. As Kollmus and Agyeman (2002:244) add, "people who have satisfied their personal needs are more likely to act ecologically because they have more resources (time, money, energy) to care about bigger, less personal social and pro-environmental issues".

Another participant, an 18 year old female student, had a high level of understanding about organic food and local food due to working part time at a local organic farm, but her mother shopped for the family. "When we go in (to the supermarket) I know what's local as its lots of the same products where I work, and I point it out to Mum, but she says "that's so expensive!" When asked about their attitudes towards growing their own food, their responses supported the surprisingly high figure from the survey of those who claimed to be good at gardening. 66% had claimed to be either 'excellent' or 'good' at food growing. An initial perception might be that growing fresh fruit and vegetables is a dying art, in spite of the recent revival in interest (Birchley 2009), but the Focus Groups reveal more complexity than whether people are 'good' or 'excellent' at it. For example, both DO and MW live on the Follaton Estate, and DO told me "Mum's got a little vegetable patch in the garden, and she grows them all year round. So we eat all our own vegetables". MW was a newer convert to food growing. Both families were inspired by a young couple of the estate who garden very visibly in front of their house. MW was clearly impressed; "they both work and yet they still manage to provide endless amounts of vegetables". MW enthused about how she had taken to gardening. "I got really silly about it, and took people to look at my little plot. "Look at what I grew!" But I think my daughter was impressed with it for about two weeks! "Do

you have to keep talking about courgettes mum?" Part of her excitement stemmed from a glimpse at what being more self reliant could be like. She continued, "one day I came back down the motorway. I hadn't been shopping, and it was Sunday so the shops were closed, but I managed to make soup from my garden. I was really excited that it hadn't cost me a penny, but I'd managed to make really nice soup. I think that's really important, the fact that you can sustain yourself if you really need to". She also found that it brought other qualities to her life. "It's very therapeutic. In the summer, it's really nice to go down there and I like looking at it and seeing what's growing".

For most people, growing some of their own food was just a fact of life and the landscape of the town reflected this. Ian Slatter recalled his father's passion for food growing, a passion he never himself came to share. At the bottom of his garden were allotments, of which his father had two, as well as a large garden, similarly dedicated to food production, but focused on fruit, whereas the allotments grew vegetables. Val Price remembers every garden in the street being used to grow food, mostly done by the men of the households. "Dad grew all our food in our garden", she told me. "Potatoes, runner beans, beetroot, carrots, onions, raspberries and strawberries". Gardening was, she recalls, the main topic of conversation for the men of the street who would "stand around, leaning on their forks, and telling each other they were doing it all wrong". In the late 1960s, the need for productive gardens began to diminish, and the new generation began to see it as boring and unnecessary. Andy Langford, whose father was a keen gardener, and who initially kept an allotment at Copland Meadow (now housing), and subsequently a very productive third of an acre home garden at the top of Barracks Hill, told me "we used to consider gardening to be something you did because he'd caught you! My generation was the one that broke the link with gardening. It was much more fun to take your bicycle to bits, put it back together again and go off racing around the countryside". Similarly Val Price recalls never being taught to garden, as gardening was "something Dads did", and that by the early 60s it had become something that young people only did if they had to.

Text Box 5.6. The Rise and Fall of Back Garden Food Production (Source: the author's oral history interviews).

In terms of where both households learned the skills needed, there were several sources. The first was the gardening couple on their street, followed by other neighbours, elderly relatives and the internet. They found that their enthusiasm for gardening was contagious. MW told me "it's (food growing) gone along the street and across.. the people behind me...". It was interesting to observe that although she could grow things, she felt underequipped in terms of basic gardening skills, so although she could grow, so was reluctant to describe her skills as 'good'. It is useful to compare this present-day culture of back garden food growing, and the figure of 66% of respondents believing they are 'good' or 'excellent' at growing food, with that of the 1950s when food growing was much more commonplace, as revealed in the oral histories in Text Box 5.6.

One older participant in the focus group on work and skills, however, countered the enthusiasm for back garden food growing expressed above. She told another member of the group who had expressed an interest in gardening, "I had your experience of planting vegetables, and it put me off completely. As a child I spent a lot of time on my Dad's allotment, I was born and brought up in cities, trying to grow things, but it put me off completely". The root of her disillusionment was twofold, firstly her lack of skills ("I felt it was my ignorance") and secondly.... slugs. "I catch them, with a torch, and then take them up to the Arboretum, but what a waste of time and effort, to try and grow a lettuce which is dead by the morning because the buggers came along and got it".

Many ideas have emerged about how to make this relocalised model a reality through World Cafe events and the process of creating the Totnes and District

EDAP. One key driver of this has been the TTT Food Group, which has been in existence for over 3 years and draws together food activists from across the community. An MPhil dissertation by Pir (2010) offered a qualitative study of the TTT Food Group, based on surveys and interviews. It acknowledged the diversity of initiatives that have been initiated and maintained by the group, which include:

- Garden Share, matching the owners of unused back gardens with keen gardenless gardeners (over 40 families now have access to growing land through the scheme)
- 'Totnes: the nut tree capital of Britain', a volunteer-led programme which plants nut and fruit trees at locations through the town. At the time of writing, over 180 trees have been planted
- a gardening training course
- links with Dartington and Sharpham Estates, both of which are on the edge of the town
- Healthy Futures: aiming to engage people with chronic health problems in learning how to grow and cook food
- A proposed 'Food Hub', a community-owned initiative to make local food available to people at supermarket prices.

However, Pir concluded that "contributions for resilience building at this stage have a symbolic meaning, largely manifesting themselves in considerations or mindsets and not in attitudes and patterns of behaviour... the overall perception of the TTT Food Group has shown that it was best known for raising awareness" (Pir 2010:93). He also noted that "even though the scale of practical manifestations seemed symbolic, they have been described by some to have had an important psychological effect on the local people". From personal experience, many of the longer term, farther reaching initiatives like the Food Hub project, take longer to bring about, and that, as suggested by Pir,

much of the initial work of Transition takes place at a deeper level, building networks and momentum. Pir's statement that thus far, the TTT Food Group "has not been able to enthuse the average person" is however not borne out in the survey data relating to the wider impact of TTT, explored in Chapter 7.

The dangers associated with 'unreflexive' localism for Totnes and district, and whether the 'foodshed' approach set out in the 'Can Totnes and District Feed Itself?' research could actually lead to some of the dangers outlined above deserves reflection. As the focus groups revealed, at present, local food consumers in Totnes tend to be wealthier, middle-class people, often with more free time. Given that Totnes and its surroundings already have a strong local food culture with many producers, and is one of the leading centres in the country for this, there is no obvious sign of Winter's (2003) 'defensive localism'. On the contrary, its local food culture emerged in interviews as something that contributes to the town's perceived 'uniqueness'. DuPuis and Goodman (2005:360) suggested that "there may also be a cost to alliances with local elites that stand to benefit from localisation", and certainly the realisation/implementation of the foodshed model would necessitate engaging with large landowners and some of the potential risks DuPuis and Goodman suggest. However, the positive and constructive engagement of the Sharpham and Dartington estates, stemming from a TTT event 'Estates in Transition' held in June 2007, suggests that such a 'cost' would be minimal.

Following an event in Totnes in May 2009 which introduced the 'Can Totnes and district feed itself?' report referred to above, a World Cafe session was held (the full notes from the session are in Appendix 3). It began by inviting

participants to list the elements of a local food system that are already in place, and then to suggest ways of increasing demand for local food. Suggestions included a Food Hub, a local food festival, local authority and school local food procurement, more education and the less constructive suggestion “burn supermarkets”! Asked to list elements that could help, suggestions included training and support, enabling more people to have access to land, and “economic hardship”. Finally, the groups were asked to think of some future events. Suggestions included “2020 – slugs in Totnes become extinct”, “2014, allotments for all!”, “2020: local food production soars” and “2015: school certification for all in food growing and cooking”. Some of the more useful information fed into the Totnes EDAP which was, at that point, being edited.

In terms of the views of SHDC with regard to its role in this area, interviewee Alan Robinson argued that they do not see themselves as being able to do much to support the relocalisation of food. “Apart from an enabling role where we can, I’m not sure where we’d actually plug in. We’d never be able to say we’ll only procure our sandwiches from somebody who’s actually growing stuff only a hundred yards away in Totnes. I know that’s a silly example but I’m not sure we can ever define it quite that tightly”.

5.5. Energy: Can Totnes power itself?

‘The nationwide and local electricity grids, metering systems and regulatory arrangements that were created for a world of large scale, centralised power stations will need restructuring over the next 20 years to support the emergence of far more renewables and small-scale, distributed electricity generation’ (DTI 2003:16).

The concept of community renewables is not a new idea, and has been advocated by alternative technology campaigners (e.g. Lovins 1977, Dunn 1978, Hoffman & High-Pippert 2005) since the 1970s as a way of implementing renewable energy, based on themes of self-sufficiency, local determination, engagement and empowerment (Walker 2008:440). Despite this, the UK's energy system remains highly centralised, leading, Pasqualetti (1999) argued, to significant spatial and psychological distance between energy generation and use. Hinshelwood (2001:100) wrote that UK energy policy thus far has meant that "infrastructure and technology projects have been large-scale, centrally-planned or private-sector led and driven largely by economic rather than wider environmental or social concerns". Before exploring the practicalities of the potential relocation of energy systems in more detail, it is necessary to establish the initial attitudes to energy related issues among the Totnes community from the survey and the focus groups.

The first section of the questionnaire established attitudes towards energy. It found that 96% of respondents were either 'very concerned' or 'concerned' about the steep rises in energy prices that were seen after the oil price spike of July 2008. It could be conjectured that attitudes on many of the other issues explored fluctuated with the oil price. When asked how concerned they were about climate change, 90% said that they were either 'concerned' or 'very concerned' about it on a global scale, and 86% about its local impacts. This is greater than the national average, although it is likely that the number concerned about climate change will have fallen in Totnes since this survey, judging by the results of a survey by the BBC in February 2010 (BBC 2010b, Katz 2010), in the wake of what the media dubbed 'Climategate' (Pearce 2010).

Only 3% stated that they were completely disinterested. The questionnaire then looked at energy security, asking how concerned respondents were "about the security of the UK's energy supplies". 35% were 'very concerned', and 52% were 'concerned'.

It was also felt to be important to get a sense of the quality of information people felt they were receiving about energy issues. Just 16% felt they were very informed, 64% informed, with just 3% stating that they were completely uninformed. As a baseline for analysing the degree to which people understand the issues, these first few questions reveal a population relatively well versed in energy issues, in all likelihood more so than the national average.

However, the next three questions tried to establish the degree to which awareness had translated into people making changes in behaviour. Firstly, respondents were asked how many light bulbs in their homes are low energy bulbs. Only 6% said none at all, 24% had some, 37% most, and 23% all. In respect of easily-made, visible, commonplace and affordable changes, therefore, action seemed commonplace. The second question attempted to establish the degree of awareness about energy consumption in relation to the national average. Respondents were asked "would you say that, compared to the national average, the carbon dioxide emissions per person in the South Hams are high, medium or low?" By far the largest response was 'medium', although in reality South Hams has a very high carbon footprint. As Figure 5.6 shows, with reference to domestic carbon emissions, the South Hams has significantly higher footprint than the rest of the South West of England, and is in the highest category for UK local authorities.

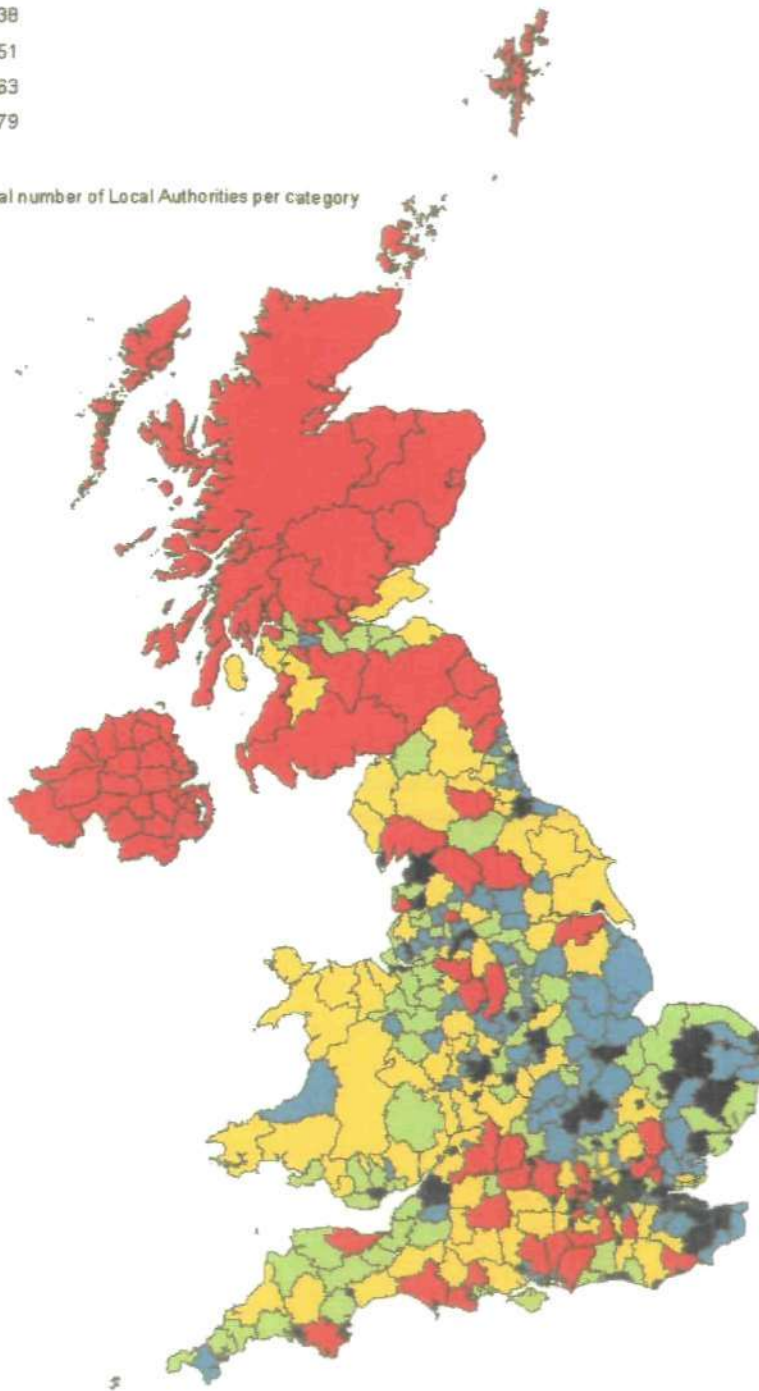
The third question explored whether awareness and concern had moved beyond light bulb changing to the slightly more involved step of insulating the loft. Respondents were asked whether, "without looking", they knew the depth of their loft insulation. 42%, answered yes, and of those, the most common depth was 6-10cm, less than half the 27cm minimum stated in UK Building Regulations. Only 8% of those who answered yes had over 30cm. What can be observed from this is an example of what Burgess et al. refer to as the 'value-action gap'. Barr (2007:444) describes this as of great significance in environmental behaviour studies. He writes "the discrepancy between stated intention and actual (or stated) behaviour is such that social researchers should concern themselves with examining both the determinants of verbally stated support for an action and the realisation of that support in reported or observed behaviour". Although people appear to be well informed, and many have taken initial easy steps such as changing their lightbulbs, as the scale of the task grows and financial commitment increases, action drops.

This also echoes Holdsworth's observation (see 2.7.2) that "consumers are generally happy to act sustainably where it does not impinge on their key priorities and cause them inconvenience". There was no specific question related to the number of flights taken per year, but anecdotal experience indicates that this is the carbon-intensive activity many, even those involved with TTT, are most reluctant to let go of. This pattern appears as prevalent in Totnes as elsewhere, and clearly behaviour change needs to be enabled to go deeper than it already has in order to achieve a significant reduction in emissions and a significant building of resilience (a question explored in more depth in Chapter 7).

2006 Domestic Emissions (tonnes per capita)



There is an equal number of Local Authorities per category



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Figure 5.6. Domestic CO₂ per capita emissions by Local Authority for 2006.
(Source: DEFRA 2008:27)

Whether any connection between awareness of climate change, energy security and price volatility can be directly attributed to the work of TTT did not emerge

from the survey, although the findings that 75% of respondents had heard of TTT, and that 62% felt that “the work TTT is doing is relevant to your life and to your concerns” could indicate some relationship. Few people in the Focus Group attributed their awareness of the subject to the work of TTT. However, one member of Totnes Town Council, DC4, directly linked his knowledge of peak oil to a presentation given to the Council by this researcher early in the life of TTT. “If I go back to your original presentation, it was quite a revelation to me at the time because most of us hadn’t really thought about it ... I would say that you’ve opened a lot of people’s eyes to the state the world is in ... it’s been a big subject in the town for everybody to talk about, hasn’t it?” The survey revealed a population concerned about energy issues, but reluctant to step across into action, which could be attributed to a range of reasons, financial, attitudinal, social and infrastructural/institutional reasons.

In terms of assessing the potential of a ‘parallel public infrastructure’ for energy, how might one assess what is feasible in the Totnes and district area which the previous section looked at from a food perspective? In 2007, the Totnes Sustainability Group commissioned the Devon Association for Renewable Energy (DARE) to produce a report looking at the potential for the South Hams to generate its own energy (DARE 2007). As part of a report associated with this study, the Totnes and District Energy Descent Plan (see Section 7.5.), Hodgson and Hopkins (2010) updated the DARE report and shifted its focus from South Hams to Totnes and District. It evaluated the range of renewable energy options available and the share of current demand that could be met through renewables, locally, nationally and internationally. It concluded that, if 2030 demand was calculated as being 50% of current demand (as articulated in

the Centre for Alternative Technology's 'ZCB 2030' report (Kemp 2010)), then local renewables would be able to meet 46.18% of energy demand. If UK offshore wind is added, this raises it to 66.08%, and if international renewables, such as a concentrated solar power (CSP) are added, it rises to 84.35%. Even with all three combined, further energy efficiency measures are needed; just relying on national and international infrastructure is likely to be insufficient and only around half of energy demand could be generated locally. The potential output from different renewables is explored in Table 5.3. below.

Some of these technologies, such as micro-hydro and tidal lagoons yield very little in relation to others, a useful outcome in terms of identifying priorities. So what might a more resilient energy system for Totnes and district look like? While what Feagan called "the variegated movement located under headings of alternative food initiatives" (Feagan 2007:24) is a broad and established international movement, the movement for 'local energy' is younger, but increasingly dynamic. Three concepts need explaining at this point. The first, 'decentralised energy' (WADE 2003), is increasingly seen as a vital element of the shift to a low carbon economy. Greenpeace (2005:15) define it as "energy generated at or near the point of use".

Energy Source	Technology	Potential Energy Capture				Co2 saved @ 0.43 kg/kWh (2009/2030)
		T&D 2009 MWh/y	T&D 2030 MWh/y	Nat. RE MWh/y	Int. RE MWh/y	
Solar	1a Photovoltaics (PV)	16,001	16,875			6.89 /7.12
	1b Solar Hot Water	23,703	25,000			10.19 /10.55
Rivers & streams	2a Micro-hydro -ETSU	2,201	2,201			0.96
	2b Micro-hydro domestic	94.8	94.8			0.04
Tidal	2c Tidal Lagoons	64	64			0.03
Marine	2d Marine Current			7,839		33.71
	2e Wave Energy			3,484		14.98
Wind	3a Small Scale (Micro)	948.1	948.1			0.40
	3b Large Scale On-shore	21,596	21,596	17,420		16.46
	3c Lg.Offshore Turbines			41,808		17.64
Solar-Biomass	4a Woodlands	8,934	26,802			3.84 /11.31
	4b Short Rotation Crop	15,935	15,935			6.85
	4c Miscanthus	29,636	29,636			12.74
	5a Oil Seed Rape	8,374	8,374			3.6
	5b Bio-ethanol - wheat	7,287	7,287			3.13
	5b Bio-ethanol – S. beet	17,399	17,399			7.48
Anaerobic Digestion bio. waste	6a AD Kitchen waste	5,316	5,607			2.24 /2.37
	6a AD Animal Slurry	18,720	18,720			7.9
	6a AD Sewage Sludge	1,251	1,388.61			0.53 /0.59
Waste plastics & organics	6b Gasification (MSW)	18,466				7.79
	6b Gasification (Comm.)	4,988				2.10
Waste Oil	6d Cooking oil - biodiesel	175.97	175.97			0.7
Solar	7 Heat Pumps	9,343	14,467			3.94 /6.10
	8. Solar from deserts				64,780.7	0 /27.33
Sub-Total (MWh/y)		137,983.87	163,750.68	70,551	64,780.7	133.19 /
TOTAL (GWh/y)		138	163.8	70.6	64.8	281.13

Table 5.3. Potential Renewable Energy Capture in Totnes and District (Source: Hodgson & Hopkins 2010). Figures shown in blue are technologies not believed to be feasible in Totnes and district, and those shown in red would occupy land otherwise selected for biomass production.

The second concept is 'microgeneration', which, Greenpeace argued (2005:15), is "smaller scale decentralised energy". In terms of the technologies that can power decentralised systems, according to the World Association for Decentralised Energy (WADE 2007:20), these can include, alongside the conventional fossil fuels, "fuel cells, microturbines, reciprocating engines large and small, gas turbines large and small, plug-hybrid vehicles, photovoltaics, onsite wind, biogas digesters and a host of other technologies".

The final concept is that of community renewables. For Walker & Devine-Wright (2008:498) the joining of the terms 'community' and 'renewables' raises the question "what is it that is distinctive about community projects and technology installations that make them different from other renewable energy projects? What *should* the term community renewables mean and include?" They argued that community renewables have two key dimensions, the first being a process, in which the key questions are who the project is developed and run by, who participates and how decisions are made, the second being the outcome, concerned with "how the outcomes of a project are spatially and socially distributed. In other words who the project is for: who it is that benefits particularly in economic and social terms" (ibid). They proposed what they see as the qualities of the "ideal" community project. It would be "one which is entirely driven and carried through by a group of local people and which brings collective benefit to the local community – a project that is both by and for local people" (ibid).

While some alternative energy activists of the 1970s argued, and continue to argue, for the breaking of national grids into smaller more localised grids (e.g. Lovins 1977 and Lovins et al. 2003), and others (e.g. Willis 2006) advocate Grid 2.0., the dismantling of the national grid into a network of small grids, this approach would be a vast engineering undertaking. As Walker (2008:4404) argued, "few observers are realistically envisaging a wholesale decentralisation of the energy system along the lines of 'Grid 2.0.'" Therefore, what is explored here is the use of microgeneration and decentralised energy (where feasible) within the context of community renewables initiatives. What

forms might community renewables projects take? There is a spectrum of initiatives that involve community ownership, achieving various degrees of community ownership and involvement (Stamford 2004). Some are 100% community owned, some are jointly owned with private companies, some feed energy into decentralised systems, and some do not. Walker (2008:4403) identified some of the possible models;

- *Co-operatives*. Examples include the Baywind Co-operative in Cumbria
- *Development Trusts*. These are especially prevalent in Scotland
- *Shares in larger projects owned by a community organisation*. This happens when a commercial project gifts shares to a local organisation, or, as at the Earlsburn wind farm in Scotland where one turbine and the income from it is donated to a local organisation.

There are many benefits to local ownership of energy generation. They can generate income for local communities which support and enable regeneration. So far wind farms have proven to be by far the most lucrative approach to this (Bolinger 2001). There is also some evidence that whole or partial community ownership of renewables projects can make them more locally acceptable and more likely to be granted planning approval (Walker 2008), although there are some notable exceptions, such as the Awel Aman Tawe windfarm in Wales, owned by the community but refused planning permission, a refusal upheld on appeal (Walker 2008). They can also lead to more local control over siting and scaling, lower costs and more reliable supply, a deeper ethical and environmental commitment, and finally they can bring stability to the national grid; as Walker (2008:4403) argued, they can “create islands of security during grid outages and contribute to voltage sustainability”.

There are also potential disadvantages and incongruities with some proposed models for low carbon energy systems. As Strahan noted (2007) some solutions proposed as low carbon energy systems can actually increase vulnerability to fossil fuel depletion. He cites the example of Woking, whose Council-run decentralised combined heat and power scheme is often cited as best practice (Greenpeace 2005), yet which, he argues, does little to build resilience, as it increases dependency on a depleting resource, i.e. natural gas. Similarly, plans for a European energy supergrid, combining wind from the UK with, among other things, Concentrated Solar Power (CSP) from North Africa, is a model that intrinsically runs counter to the concept of local ownership (Strahan 2009). In the context of the potential economic contraction that could arise from peak oil, and the current economic challenges faced by the global economy, one could question the feasibility of installing such large-scale, centralised infrastructure projects, and that decentralised models offer a more resilient model, but this is still the subject of much debate.

A number of barriers to community renewables have been identified. These include establishing the economic and technical viability of projects (Dunning & Turner 2005), the need for extensive liaison with a broad range of organisations (Hinshelwood 2001) and the lack of a cultural history of co-operative energy organisations, which are so prevalent in countries such as Denmark, but rare in the UK (Bolinger 2001). Another barrier identified by Walker (2008) is the fact that almost all community renewables projects take place in rural areas, suggesting the need for other "models of collective ownership that are better suited to urban environments" (Walker 2008:4404) . In spite of models being in place, and structures and technologies having been tried and tested, progress

in the field of community renewables has been relatively slow, and although a 2004 database of community renewables projects showed over 500 UK entries, only a small proportion of those were actually generating energy under community ownership, raising questions about the definition of the term (Walker 2008).

Government interest in community renewables has grown sharply. Writing in 1997, Walker's analysis at the time was that "local models [are] anathema to UK energy policy". By the late 1990s, however, the role of communities and the local perspective began to emerge in the discourse of Government bodies and advisory bodies (Walker et al. 2007), due, in part, to Agenda 21. The 2003 Energy White Paper was liberally sprinkled with the words "local" and "community", including the following paragraph, in which the energy system of the future is envisaged;

"There is much more local generation, in part from medium to small local/community power plants, fuelled by locally grown biomass, from locally generated waste, from local wind sources, or possibly from local wave and tidal generation. These will feed local distributed networks, which can sell excess capacity into the grid" (DTI 2003:18).

The term community renewables is now part of energy policy, with funding and support schemes such as the Community Renewables Initiative set up to incentivise them. In December 2009, TTT was awarded £625,000 by the Department of Energy and Climate Change for its Transition Streets project (see 7.5.) as part of the Low Carbon Communities Challenge set up to promote community renewables. The 2009 'UK Low Carbon Transition Plan' talked of seeking to 'stimulate the UK's transition to local low carbon energy generation'

(HMG 2009:90). Community renewables are increasingly seen as key to rural regeneration and to local innovation, but does this, asked Walker et al. (2008:497), "suggest a shift in UK energy policy away from large scale centralised systems?" Walker et al. (2007:14) retained a degree of scepticism, questioning "the extent to which it can be presumed to embody any form of collective communitarian principle".

So, with Government commitment to community renewables existing but confused, how might an organisation like TTT begin to implement the community ownership of renewables? The importance of local renewables, and community ownership of those renewables to Transition, is one of the key issues that led to the establishment of the Totnes Renewable Energy Society (TRESOC), an Industrial and Provident Society set up to create community-owned energy infrastructure. Although it is a stand-alone company, TRESOC emerged from a TTT Open Space day on energy, with a group of people enthusiastic about taking the idea further. TRESOC plans a community share launch, and the initial installation of wind, hydro and anaerobic digestion projects. The TTT Energy Group has been one of the most active, although less successful projects have emerged from this group than from others, due to the larger capital investments needed. A 'Solar Buyer's Challenge' led to just 9 households putting up solar thermal systems. However, the 'Transition Streets' initiative (see 7.5) should significantly accelerate this concept.

Attitudes to energy and community renewables, and to this kind of relocalisation of energy generation, were explored in a focus group of 6 participants. Participants were asked how they would feel about their energy generation

becoming more localised. Angela replied "it's got to happen because otherwise what choice have we got?" When asked if she would be interested in investing in a community-run energy company such as TRESOC, she replied "I'd be quite happy to join something like [that] and be an investor and be active. I'm sure my neighbours would be as well". Several people voiced the opinion that they would like to see it happen but would have little time to do it themselves. One said "I think a lot of people would be very supportive of these projects and ideas, but just aren't able to participate at the moment. You can't do everything can you?" This echoed a study by Rogers et al. (2008) which explored public perception of opportunities for community-based renewable energy projects, and found that while there was a lot of support for the concept, with two-thirds of households expressing an interest in participation, but no respondents at all identified themselves with the role of project leader.

Renewables were the dominant choice of technology in the Totnes focus group, and there was optimism about the speed at which they could be deployed provided the political will existed. One of the surprising threads from the focus group was the extent to which the group felt that the community itself could take control of its energy challenges. When one participant argued that money spent currently "on wars" could be better spent on renewables, Alan replied;

"I think you are looking at it on too big a scale. This lady here (MF, another participant) lives in Copland Meadows, and they got together collectively as a group and thought about what they could do together¹⁰. As a larger group of individuals you are much more effective at getting grants and funding and support, or even loans because its a collective effort. I've come to the conclusion that a

¹⁰ This refers to the first Transition Together pilot group (see 7.5.)

group of determined individuals is far more effective than a gigantic great government".

In October 2006, TTT held an Open Space event on energy called "Powering Totnes Beyond Cheap Oil - rethinking Totnes's energy supply". During the day it was attended by around 150 people, and, being Open Space (see 3.4.6.), they shaped and ran the meeting with minimum facilitation. It is instructive, nearly four years later, to look back and see how many of the ideas and visions which emerged during the day have subsequently come to be realised. These include;

- Working with schools doing energy awareness work (the Transition Tales project now works with all Year 7 students at KEVICC)
- An assessment of potential hydro power resources in the area (conducted for the South Hams by DARE, and adapted for Totnes and district for the Totnes EDAP)
- Energy monitors made available through Totnes library (this now happens through the Transition Streets initiative)
- Community bulk buying of solar panels (this now happens for photovoltaic panels through Transition Streets, but a solar thermal bulk buying scheme failed to take off)
- Open Days of Eco Homes in the area (TTT now runs an eco-house Open Day once a year)
- Include the whole community, not just wealthier homes (Transition Streets selected the participating groups so as to best represent the cross-section of Totnes society)
- A display in the Civic Square showing renewable energy generation in the town (as part of the Transition Streets project, the Civic Hall will be covered in PV, and a monitor in the square will show how much is being generated, and also capture wirelessly the energy being generated from all the other panels installed by the scheme).

- The need for a study into how much firewood could be produced locally (this was attempted as part of the 'Can Totnes and district Feed Itself' research).
- The need for a community-owned energy company, TRESOCO, to set up community-owned large scale renewables (TRESOC (because it became an Industrial & Provident *Society*) is now established to do just that
- The need for large scale wind and anaerobic digestion projects (these are being planned).

There were some things proposed that have yet to happen, or haven't for very good reasons. These included decentralised energy systems (very complex to do, see 5.3), harnessing the power at water mill sites on the river (the DARE report showed the energy produced would be negligible), a Local Energy Directory of installers and so on (not yet adopted), a survey of Totnes's housing stock (still under consideration) and a TTT school play about energy (not taken forward). Why might it be that Open Space events appear to have led to the emergence of new initiatives? This is partly because those who had the ideas brought them to the Open Space event looking for collaborators to make them happen, partly because the ideas informed the work of TTT and partly because it brought ideas out into the open and began a process of exploring their feasibility which, in turn, attracted others. Looking back over the notes from the Open Space day on food held two weeks previously is similarly insightful, indicating the usefulness of Open Space both for getting a snapshot of where a community's thinking is at, and also for generating ideas and possibilities.

In terms of what 'unreflexive' localism could look like in relation to energy, it would probably be energy systems that are decentralised but privately owned, so that energy becomes something 'done to' a community by a

local elite. It is easy to forget in discussions such as this how cheap energy and the appliances that it has made possible has revolutionised society, especially the lives of women, in a relatively short period of time, as revealed in Text Box 5.7.

Vera Harvey grew up with her grandparents, and the work of doing the family washing fell to her grandmother, although Vera and her sister were expected to play an active part. Their house in the centre of Totnes had a washhouse, which had two large bathtubs and was, initially, lit by candles. When electricity was installed in their house, they ran a cable out to the wash house. The hot water was produced in a copper, and once washed, clothes needed to be put through a mangle. She recalls the arrival of the first washing machine. "As soon as we got a washing machine that was it. 'I'm not going out in that wash house like Gran!' In the 1950s, our first washing machine had a wringer on top. I remember when we used the washhouse, being out there with my Gran, and it was snowing, getting deeper and deeper, saying 'Gran! We can't stay out here!'. People worked so hard in those days". Likewise, Marion Adams grew up washing her clothes in a copper and is similarly un-nostalgic about those pre-washing machine days. "We had a mangle, you had to mangle your clothes! It was terrible. Your feet and legs would get wet, it was hard work. Mum used to wash all our sheets by hand, they were all pegged out on the line. Monday was pegging out day, so on Mondays we had cold food, mashed potatoes and salad". In time they also progressed to a twintub with a mangle on top of it. Val Price has similar memories of Monday washdays, although she remembers her father having to turn the mangle, as her mother said it was too hard for her. It is hard to overstate the importance of the mass proliferation of electric washing machines. It could deservedly stand as being the single most important invention of the 20th century, certainly as far as the lives of ordinary women are concerned.

Text Box 5.7. The Role of Appliances: how the washing machine changed women's lives (Source: author's oral history interviews with Vera Harvey and Marion Adams).

The model for the Totnes Renewable Energy Supply Company makes an 'unreflexive' local energy system impossible as it is a community-owned company, with share ownership only open to the immediate geographical

community, and with any community member able to stand for the Trusteeship of the organisation. Clearly more can be done in terms of local manufacturing, training local people to install microrenewables, affordability and so on, and some of this is addressed in TTT's 'Transition Streets' project.

5.6. Housing: Can Totnes house itself?

"The process of building with bales includes the possibility of making a profound change in the fabric of human societies around the world. In fact this vision is not exclusively a matter of straw bales: the questions we are trying to pose.... are basic: how do we build, and how does that process occur in relation to the community and to the life around us? Straw bales happen to be the material that has inspired many to look at the process of building in a different light". (Steen et al.1994: xvi).

In the same way the local food movement shifts its focus from out-of-season, long supply chain, high embodied energy foods towards more locally sourced, low impact foods rooted in the local region or 'foodshed' (Kloppenbergh et al. 1996), an emerging branch of architecture and construction examine similar transitions with building materials. The 'natural building movement' (e.g. Kennedy et al. 2001, Kennedy 2004, Woolley 2006, Broome 2007, Bevan & Woolley 2008, Jones 2009) argues that an architecture based predominantly on local materials is the most appropriate for a lower-energy context. Seyfang (2009) noted the evolution of the natural building movement from the ideas of Schumacher's (1974) concept of 'appropriate technology', through to the Vales' (Vale & Vale 1975) concept of the 'Autonomous House', to Pearson's (1989) term the 'natural house'. She observed how, given the need for reductions in

carbon emissions from buildings (around 50% of total emissions), there is a need to go beyond focusing solely on energy efficiency and building performance, and to look at the materials and techniques developed/rediscovered by the natural building movement to scale up. However, she noted “fundamentally different discourses, practices and governance of sustainability between the mainstream system of housing provision and green builders” (Seyfang 2009a:1), adding that “the challenge therefore is to better understand and therefore harness the creative energies of community-led solutions and adapt them for wider mainstream setting” (ibid).

The concept of using local building materials in a modern context is not novel. Seyfang (ibid.:3) wrote that “there has been a resurgence in traditional building materials which could be locally sourced from renewable or recycled materials such as strawbale, wool, cob (mud and straw mixtures), reed and thatch, as well as alternative formulations of concrete-using natural materials such as ‘papercrete’ and ‘hempcrete’”, due in part to an emerging recognition of the potential of such materials to lock up carbon, rather than to emit it (see Figure 5.7). A number of architects working in the developing world now argue that the use of local building materials offers the advantage of sustainable materials which produce healthier buildings while also strengthening the local economy. One of these is award-winning German architect Anna Heringer who has worked in Bangladesh to build a school, predominantly from earth and bamboo (Ashraf 2007:114).

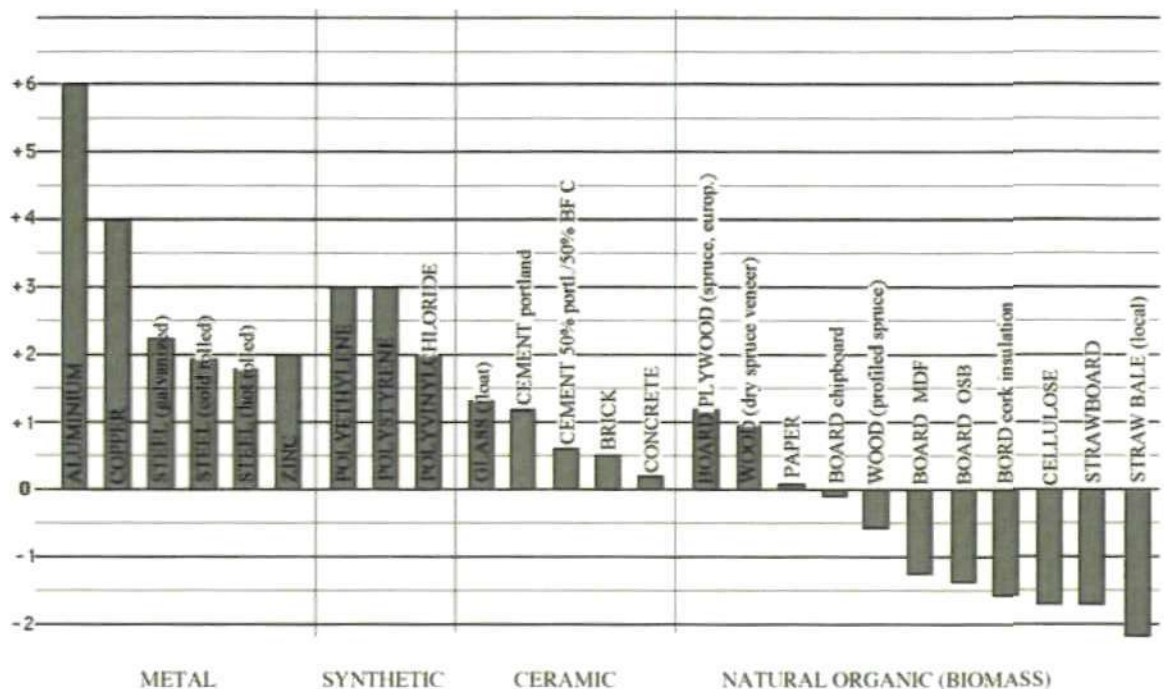


Figure 5.7. Overall CO₂ emissions by weight [kg] released by production of 1 kg of twenty-four common building materials (Source: MacMath, 2000). The CO₂ emissions of local baled straw by weight were calculated (see below) and added to this table by author. Positive overall CO₂ emissions indicate a net CO₂ source and negative overall CO₂ emissions indicate a net CO₂ sink.

Some commercial projects in the UK that feature local materials are already underway. The first Council houses built using straw bale construction, by North Kesteven District Council, are soon to be completed (Shah 2009), two Council houses were built by the Suffolk Housing Society in 2002 using hemp and lime construction (Clarke 2002) and a new school in Newquay, Cornwall, is to be built from cob (Yeoman & Taylor 2006). The challenge though, is that although these building techniques and materials have undeniable advantages in terms of embodied energy and healthy building, what is lacking, according to Seyfang (2009a:8) is "scaling up the existing small-scale, one-off housing projects to industrial mass production". Also, most of the techniques require intense manual labour and tend to be built on one-off cheap rural sites rather than in urban development contexts. What is required, as Seyfang put it, is the

natural building niche “adapting itself to resemble the regime” (Seyfang 2009a:8). This is starting to emerge with examples including prefabricated straw bale panels (MacKeown 2008), offsite construction (Sassi 2008) and hemp/lime construction (Bevan & Woolley 2008), although they still have some way to go before becoming a feature of mainstream construction. It is instructive to note, from the oral history interviews, how the shift from traditional natural building materials to modern industrial materials did not necessarily bring the benefits that it was hoped they would (see Text Box 5.8.).

Alan recalls his grandmother, with whom he and his mother lived, keenly moving out of an old house that was a converted cider press. “She just wanted modern. She wanted electric fires, electric cookers, electric everything. She wanted automatic this, that and everything. So we moved, at my grandmother’s insistence, from this wonderful rambling old building.... to a brand new house, typical of its time. Wooden framed, single glazed windows, open fire for a chimney which she quickly replaced with an electric fire, “I’m not having any more of that dirty coal business”. The winters were actually colder than the previous house! You’d wake up in the morning, and your breath would have condensed on the window, frozen on the inside. Inside it was cold, outside it was cold. Eventually my mother paid for an electric fire to be put in so you could reach out of the bed and turn it on. Electricity was cheap in those days”.

Text Box 5.8. The Energy Efficiency of Modern Housing in the early 1960s.
(Source: author’s oral history interview with Alan Langmaid).

A recent paper by the Prince’s Foundation (Hulme & Radford 2010) explored the economic and social impacts on local economies that the move to building systems that utilised local building materials would deliver, in particular in relation to using locally manufactured aerated clay blocks. As well as analysing the potential of this one product, the authors reflect on the potential of scaling up the approach;

“Although this study only explored a single element of the building supply chain – structural clay blocks – these findings suggest that certain general lessons include tailoring construction techniques to local skills, designing building components which provide a range of secondary and tertiary benefits, and taking advantage of the positive impacts of simplified, generalisable approaches to complex, high-tech, specialised ones” (ibid:18)

The paper identifies a range of benefits that such an approach would bring:

- The simplicity of the systems means “it enables a local workforce to be used ... this ensures that a greater proportion of economic value is captured in the local economy”
- Jobs would be created by the manufacturing of the materials
- It would also result in “professional skills development, a heightened sense of personal dignity and respect resulting from long-term professional employment, enhanced social well-being, improved social capital, healthier buildings, a more resilient building supply chain, reduced CO2 emissions, and increased longevity of the building stock” (ibid:15).

While many of the natural and local building materials and techniques outlined above have advantages from a Transition perspective, what has almost never been mentioned in the natural building literature is the potential for local materials in the retrofitting of existing buildings. Given that, of the country’s approximately 24 million homes, at least 87% are projected to still be standing by 2050 (Kemp 2010), and that retrofitting existing homes saves 15 times more CO2 than demolishing and rebuilding them (Jowsey & Grant 2009), this is clearly an important future focus. This theme of retrofitting is, however, picked up in the Prince’s Foundation paper; “beyond new build construction, a natural

approach to materials sourcing means many of the products identified are equally suitable to retrofit in buildings of traditional construction" (ibid:19).

Rob Scott McLeod, Technical Manager for the Building Research Establishment in Wales and the South West has been developing the concept of the 'local passivhaus'. A passivhaus has been defined as "a building in which thermal comfort is guaranteed solely by re-heating (or recooling) the fresh air that is required for satisfactory air quality" (NBT 2009:2). McLeod is taking the idea one step further, seeking to build homes that reach passivhaus standard, but use predominantly local materials (McLeod 2007). Currently under construction in South Wales are two houses built to passivhaus standard, one of them using 80% local materials (mostly timber and recycled newspaper, 'local' here being defined as from within South Wales), and one aiming to go beyond 90%. The approach is one of on-site construction, site-specific design, minimisation of waste, and of a close coupling of design and materials (McLeod 2010:pers.int.). Some of the 'natural' building materials discussed above are not, as yet, felt appropriate for inclusion in such buildings, hempcrete due to not demonstrating sufficiently high levels of insulation, and strawbale due to not yet having sufficient certification to satisfy insurers. The key to reaching and exceeding 90% is training local companies to build windows to passivhaus standard using local timber, and this is already happening in South Wales as part of these projects.

The area of building and housing was explored in the TTT EDAP. It suggested how the current building standards could be improved and used to not just address carbon emissions but also to build resilience and strengthen local

economies. One key element of this is what was called the 'Transition Code for Sustainable Homes'. This suggests that by 2014, SHDC has taken a proactive stance of low carbon building, developing the Transition Zero Carbon Homes Code (see Table 5.4.).

The Totnes Transition Zero Carbon Homes Code
<ul style="list-style-type: none"> • Meet the current highest standard for sustainable buildings (i.e. Passivhaus, or exceeds level 6) • Be designed so as to maximise natural lighting and solar space heating • Eliminate toxic or highly-engineered materials and energy-intensive processes • Be independent of fossil-fuel based heating systems • Be designed for adaptability and dismantling: so as to allow the building to be subsequently adapted for a range of other uses • Where appropriate, integrate working and living. • Ensure outdoor spaces are south facing with the minimum of overshadowing, so as to maximise the potential of the property/development to grow food • Maximise grey water recycling and rain water capture • Be built to address needs not speculation • Adhere to good spatial planning to benefit communal interaction and shared open space • Maximum use of locally produced materials: (defined as clay, straw, hemp, lime, timber, reed, stone) • Maximum use of used and recycled building materials, particularly those on site • The inclusion of water-permeable surfaces rather than hard paving, etc

Table 5.4. The Totnes Transition Zero Carbon Homes Code (Source: Hodgson & Hopkins 2010)

Such an approach would lead to a more vernacular building style and opening up of a potential market for local manufacturing and processing of building materials. This principle of what Shuman (2008) called 'import substitution' would mean that money currently leaving the area for imported building

materials would be retained in the local economy, creating new livelihoods and new small-scale industries. Some of the building materials that could potentially be produced within Totnes and district are identified in Table 5.5.

<p><i>Timber:</i> for construction grade timber, internal studwork, window and door frames, roofing shingles, laths, panelling, flooring, wattles, wood fibre insulation.</p> <p><i>Clay:</i> for rammed earth construction, cob walling, daubs, clay plasters, cob bricks, clay paints</p> <p><i>Hemp:</i> for use in hemp/lime construction, to make insulation, for hemp/lime or hemp/clay plasters and bricks</p> <p><i>Slate:</i> for roofing</p> <p><i>Stone:</i> for foundations, walls,</p> <p><i>Reed:</i> for thatching roofs, and also to make 'reedboards', an alternative to plasterboard</p> <p><i>Lime:</i> for plasters, mortars, renders, as well as in construction systems such as hemp/lime</p> <p><i>Straw:</i> baled, and used in 'straw bale building', chopped as an ingredient in plasters</p> <p>Sheepswool: insulation</p> <p><i>Horse hair/other fibres:</i> used to strengthen plasters</p> <p><i>Recycled Materials:</i> newspaper processed as an insulation product, car tyres, recycled bricks</p>

Table 5.5. A list of building materials that could be derived from the Totnes and district area (Source: the author, drawing from Clifton-Taylor 1987, Brunskill 2000 and from current natural building projects in the Totnes area and from historical precedents).

SP1 reflected on the practicality of such an approach of deliberately promoting and prioritising local materials through the planning process. He argued that, in the current context of planning driven by land availability and commercial viability, such restrictions would be unfeasible. "That's quite a challenge", he argued, "because the planning system isn't all-powerful. It has to work within the government framework (i.e. Building Regulations, the Appeals process and so on), and of course you can set all those targets. However, you have to be confident that if a developer says "no, I'm not doing it", you are able to defend it

at a planning appeal, because if you make a hash of it you're going to get pretty big costs against you". He continued;

"[We can't] say "you must use...." because then you almost create a ransom for the developer to be tied in with those local businesses. Now I don't think you'd ever get that through the planning system, where you actually created a complete local monopoly because the developer would still want to go for value".

Simon Fairlie, a planning consultant specialising in low impact development agrees that imposing 'green' conditions through the Planning System is close to impossible. According to Fairlie;

"At the moment even conditions imposing Code 3¹¹ are being overturned at appeal, because government guidance is so weak. Local materials would be resisted by builders as being "anticompetitive" and both a Tory or a Labour government would see it that way" (Fairlie 2010 pers.comm).

Some recent developments however offer the prospect of a more proactive, but less problematic approach to insistence on local building materials. The first is "the Merton Rule" introduced by Merton Borough Council in 2003, and widely copied in other council plans. It demands that at least 10% of energy needs must come from on-site generation, and comes into force at a threshold of 10 homes (residential) or 1,000m² (non-residential). North Devon chose to demand 15%, and Kirlees Council are currently considering 30% by 2011, and the Merton Rule is now part of Plymouth's Local Development Framework. The

¹¹ The Code for Sustainable Homes was launched by the UK Government in April 2008, calling it "a step change in sustainable home building practice" (CLG 2008) It sets out 6 steps, Code 1 being relatively poor, and Code 6 being a 'zero carbon home', which it is intended that all new homes built from 2016 will be (Hall 2008:84)

Merton Rule was sustained on appeal from the Building Federations which argued that it made developments commercially unviable. The Merton Rule is now endorsed in PPS1 Climate Change¹² which requires all UK local planning authorities to adopt a 'Merton Rule' policy. As Fairlie (ibid) points out, renewables are different from local materials, given that renewables can be sourced from anywhere in the world and hence circumnavigates concerns about 'protectionism' and lack of 'competitiveness'.

The Merton Rule has since been incorporated into the Code for Sustainable Homes (CSH), which sets out the stages of the UK's move towards zero-carbon housing by 2016. It includes the requirement for on-site generation which rises as the Code level rises, with the expectation that Code 6 buildings install "on or near-site zero carbon generation for all energy needs" (Hall 2008:89). In terms of building materials however, CSH is disappointing. It defines a 'zero carbon home' as one in which "net carbon emissions resulting from ALL energy used in the dwelling is zero" (DCLG 2008a:46), focusing on the performance of the final building rather than the carbon embodied in the materials.

If a legislative approach to scaling up the use of local building materials looks unfeasible, how about a criteria-based system? This, Fairlie (2010:pers.comm) argues, would "create an opening for best practice in places where conventional development would not be allowed". The best current example of this is the Welsh Assembly's '(Draft) Technical Advice Note 6. Planning for Sustainable

¹² Planning Policy Statement: Planning and Climate Change. Supplement and Planning Policy Statement: December 2010 (CLG 2006). States its aim as being to set out: "how spatial planning should contribute to reducing emissions and stabilising climate change (mitigation) and take into account the unavoidable consequences (adaptation)".

Rural Economies', published in July 2009. This presents the concept of 'One Wales: One Planet'. It states that:

"the Sustainable Development Scheme, "One Wales: One Planet" includes an objective that within the lifetime of a generation, Wales should use only its fair share of the earth's resources, and our ecological footprint be reduced to the global average availability of resources - 1.88 global hectares per person" (Welsh Assembly Government 2008:21).

This objective is then linked to planning, and in particular to the criteria that "planning applications should be accompanied by supporting information confirming that the development will be zero carbon in construction and use" (ibid:23). Fairlie notes that "priority for local, renewable building materials can be quite easily written into a policy like this, there are no anticompetitive issues, because it is a "consumer choice" rather than a trade restriction, and builders and other vested interests do not object" (Fairlie 2010: pers.comm).

There is a chicken and egg situation here though of course. If SHDC tomorrow were to pass a policy enshrining that a given percentage of materials were mandatory in all new buildings, there would not currently be capacity to meet demand. Conversely, nobody would invest in setting up such businesses without the knowledge that those markets will be in place. Hence the suggestion of a change in planning policy, flagged now, to come into effect in, say 2014. Perhaps the key is to begin developing buildings in the area that utilise these materials, in order to start creating demand and to lead by example, an idea explored in more depth in 7.4 in an exploration of the role social enterprise might play in Transition.

In terms of what is emerging through TTT and other local initiatives, some initiatives are starting to gain momentum in modelling this approach to construction. As with energy, housing projects are much higher capital and longer term, although some strong projects have begun to emerge. These include;

- The Totnes Sustainable Construction company, set up to pioneer these kinds of development
- Transition Homes, which is proposing to build a small settlement of low impact houses on the Dartington Estate
- ATMOS Project (see Section 7.9.), which aims to convert the derelict Dairy Crest site into a mixture of affordable housing and business start-up units
- Work is also beginning in relation to the drafting of a policy along the lines of those outlined above.

As Seyfang (2009a) notes, there is more to low carbon, community-led building than just materials. Other elements include what she calls 'new living arrangements', such as co-housing and low impact development, as well as the importance of communities owning and developing their own assets.

No questions specific to housing were asked in the survey or in the focus groups, although in the focus group of work and skills, unhappiness about the most recent large development in the town, the Southern Area development, and its low standards of energy efficiency, were voiced. One participant said "why did they put heating in those Southern Area houses? Why didn't they make them energy efficient? All of them...." This was picked up in more depth in the in-depth interviews, which highlighted the fact that SHDC's insistence on the lowest possible levels of energy efficiency in new buildings currently runs

counter to the approach set out above. DC2 said "SHDC don't impose the highest standards in new build, which I think disappoints a lot of us". SP1 justified this approach when I asked him "the perception that is often voiced in terms of SHDC's take on climate change and building standards is that rather than some other local authorities in the UK who take a visionary and bold stance, SHDC is happier taking the minimum set by Government?".

He replied that SHDC had tried to impose more stringent standards, but "you've got to make it viable. You can make your visions so challenging to deliver that nothing happens". When asked whether actually taking a more stringent approach would mean that that would be precisely why businesses would want to come to the town, i.e. a selling point rather than just an insurmountable obstacle, he replied "yes, that could be a choice... my gut response would be that it would mean we had very little development in the town over the next few years. There's an incredible pressure for housing in Totnes, and there are people coming through our reception facing homelessness. It is getting that balance between the vision and somebody facing homelessness today".

SHDC's approach is hardly unique. According to Gibbs et al. (1998), their approach is common. Sustainable development or environmental issues, they argue, appear to be a relatively unimportant concern for local authorities. Among the reasons cited for this are the limited influence local authorities are able to exert over private businesses and individuals behaviour, due, in part, to constraints imposed by central government. Sustainable development, they argued, is "a fundamentally political concept" (ibid:unpaginated). Ultimately, "creating and keeping jobs are ranked higher than environmental protection,

and members remain to be convinced that the two areas are compatible” (ibid). Although written in 1996, the above could still apply to SHDC in 2010.

5.7. Transport

“When we proclaim ‘localism’, we usually mean ‘subsidiarity’. For example, we say that transport planning should be decided ‘more locally’ than in Whitehall. But just how ‘local’ should it be? It obviously depends on the mode of transport. Responsibility for footpaths can be devolved down to parish council level, but trunk highways may be beyond the competence even of county councils...” (Ziman 2003:64).

Of the four issues examined, transport is the most difficult to reframe in the local context. Given its geographical location, much of the congestion in Totnes is travelling through, rather than within, the town, although car dependency, and the resultant dependency on liquid fuels, is a fact of life for many. The area has a substantial rural catchment, and poor public transport (SHDC 2007b).

The survey reveals some interesting data regarding Totnes and Dartington. 85% of respondents have regular use of a car, much as one might expect for a rural market town with a poor bus service. Oral history interviews revealed the reliability of the public transport Totnes used to have 50 years ago. Alan Langmaid recalled “I didn’t travel very far. Nobody travelled very far. My mum took the bus to work in Paignton and it was a regular service, like clockwork. She disappeared at 8.25am and reappeared at 4.30pm every day”. The branch lines that operated in Totnes until the Beeching cuts of the 1960s were also a vital link for outlying settlements. John Watson, the founder of Riverford Organic Farm, recalls setting off on the train from Staverton station for a ski holiday in the Alps. Life within Totnes in the 1950s largely took place without

cars. Val Price's father bought a car in late 1952, and built a garage to keep it in. However, she recalls that he rarely used it, never using it to pick her up from school, and never taking it out during the week, given that everything he needed was within walking distance. It was only ever used on weekends to visit relatives. In the context of this study, Totnes could be argued to have been more resilient without cars than today where, according to this researcher's survey, 85% of people find themselves dependent on them. This echoes Ryley's (2001) study, which found that 89% of motorists agreed with the statement 'I would find it very difficult to adjust my lifestyle to being without a car'. The most frequent average annual mileage recorded in the survey was between 5001 and 10,000 miles (39%), with 2501 – 5000 the next most frequent (23%).

Respondents were asked how much of an impact not having access to a car would have. "If you are in employment, how difficult would it be for you to do some or all of your job from home?" 44% felt it would be 'impossible', and 9% 'very difficult' or 'difficult'. 27% stated that the question was not relevant as they were not working. This reveals a high degree of actual or perceived car dependency within the community, with only 20% believing it to be 'possible' or 'straightforward' to live life without a car. It is worth noting that a quarter of all car trips in the UK are for journeys of under 2 miles (Mackett 2000). This indicates a very different Totnes from the pre-car town described in the oral histories. The 15% of respondents who do not have a car were asked "do you find living where you live without a car to be easy, awkward but manageable, difficult or almost impossible". 45% thought it was 'easy', and 21% 'awkward' but manageable, only 10% feeling it to be 'impossible'. Given that the sample

was taken from the same geographical area within Totnes and Dartington, rather than the rural hinterland, and that 45% of those with no car felt life was easy without one, this would again suggest that issues of time and cost, and the pace of modern life dictate the perceived need for cars, rather than actual need.

Any process of trying to coax people out of their cars must also bear in mind that the reasons people use cars are not entirely instrumental but, according to Steg (2005:148), "most strongly related to symbolic and affective motives". These include feelings of sensation, power, superiority and arousal, and also the car's role as a status symbol. Stradling et al. (1999) found that 'enjoyment of driving' was an important factor in people's transport choices. Nilsson and Küller (2000) found that people with a strong emotional attachment to their car use drive more, and also find policy measures aimed at reducing car use as less acceptable. Steg (2005) suggested that situational characteristics and motives may well interact, that people may intentionally choose to live far from their work place because they enjoy driving. For these reasons, Anable and Gatersleben (2005) suggested, policy makers should shift their focus from instrumental motives to also considering the many symbolic and affective values of different modes of transport. A range of studies suggest that different modes of transport are underpinned by different motivations. Stated motivations for choosing cars are often short term reasons such as health, the environment and value for money.

In the wider context, transport is, of course, a key element of the shift to a low carbon economy. Chapman (2007:357) saw the challenge thus; "either the favoured modes need to be made less polluting through technological change,

or alternative modes need to be made attractive". Totnes town is relatively well served in terms of public transport, being on a main railway line, and being small enough that most places can be easily reached by foot. For Chapman (2007) walking and cycling are the ultimate 'zero carbon' transport solution, in spite of both having declined significantly over the past 20 years, due to, among other things, "poor levels of fitness ... fear of crime [and] unfavourable weather" (Chapman 2007:363). Attempts at starting car clubs in Totnes have floundered, and the most visible sustainable transport project underway in the town is a fleet of three rickshaws, powered by processed waste food oil, which serves as an alternative taxi service. Outside the town the challenge becomes even greater.

Public transport, especially in rural areas, has been in steady decline for decades, due in part to steady growth in car ownership, deregulation and reductions in government subsidies (Nutley 1998, Goodwin 1999, Preston 2003). Rises in the price of liquid fuels will impact the rural areas of Totnes and district more than the towns and villages. Lowe and Speakman (2006) showed that in rural areas, 40% of the population is over 50, and 25% are over 60. Car dependency in the UK peaks among those in their 40s (Shergold & Parkhurst 2010), with ownership falling significantly among younger and older people. Rosenbloom (2001) argued that this 'peak' will not remain static, rather it will age along with the population, meaning that in the future, older people will be more resistant to using public transport. She argued that future generations will be even less willing to compromise their mobility than today's elderly, and they will continue to drive, unaware or unable to deal with their impact on the environment and in the face of declining driving skills.

The conventional wisdom is that what is needed is an increased public transport provision, mostly in the form of buses. Community-run minibuses are now commonplace in many rural areas, the Community Transport Association (2005) reporting that 100,000 minibuses in the UK serve over 10 million passengers; these services are run by schools, colleges, voluntary and community groups as well as by local authorities (Gray et al. 2006). Public transport is often emphasised as the best solution for rural areas in order to support social sustainability, avoid social exclusion and reduce CO2 emissions, but Shergold & Parkhurst (2010) questioned this, principally over whether it is the best use of money. "Traditional 'alternative' mobility responses, such as fixed-route buses, are unlikely to provide a greater contribution than at present" they wrote (ibid: 339). Gray et al. (2006) cited a series of recent studies which indicate that, in rural areas, people in non-car owning households are more likely to get lifts with other people than to use public transport. A recent study of Painswick in Gloucestershire looked into this phenomenon in more depth, and uncovered anecdotal evidence of 'brokerage' through the local surgery, which informally arranged lift-sharing between patients. This was felt to be significant in overcoming the social and psychological barriers associated with "asking for a lift" (Shergold & Parkhurst 2010). Another study (Wright et al. 2008) looked at a 'Transport to Employment' scheme (T2E) in Highland Scotland, which aimed to provide access to employment from remote areas, dealing with what is termed 'transport poverty'. The on-demand service utilised local taxi firms rather than buses, and found that the social benefits of the scheme outweighed the costs by 3 to 1, although it is dependent on funding for its operation.

Despite a few interesting initiatives, it must be recognised that applying the concept of relocalisation outlined in the preceding three sections is far harder for transport. Most decisions affecting transport provision and use are in the control of the local authority and individuals rather than community groups. As Chapman (2007) observed, transport systems and urban layouts have great inertia and are very slow to change, but what can be changed over the shorter term are perceptions and behaviour. "Behaviour change", he concluded, "is the key factor to enable transport to pull its weight in relation to other sectors, although technology will help to a certain extent" (Chapman 2007:363). This is supported by Stradling (2003) who estimated that 80% of journeys currently undertaken by car could in fact have been made using an alternative form of transport. For a grassroots organisation such as TTT, affecting the redesign of transport infrastructure is clearly a longer term activity, one where its efforts might be better focused on effecting and supporting behaviour change, as through its 'Transition Together' initiative. This is particularly relevant in terms of emissions from aviation, which is largely a lifestyle choice unaffected by local infrastructure changes, and which arguably has far higher impacts in terms of emissions than one's daily travel choices.

5.8. Conclusions

This chapter has explored the practicalities of relocalisation in four key areas, food, energy, housing and transport. One could question how meaningful it is to just focus on these four, whilst not also looking at, for example, the role that money and economic models can play in enabling localisation (Douthwaite 1999, Lietaer 2001, Scott Cato 2006, 2008), however the boundaries of this thesis necessitated a particular focus, and the four chosen echoed the third of

Homer-Dixon's (2007:281) actions for building resilience, (see 2.6), "boost[ing] the overall resilience of critical systems, like our energy and food supply networks". Mindful of the dangers inherent within an unreflexive localism, it explored the extent to which localisation might be possible, and which models might best enable it. It is clear that there is considerable enthusiasm for the idea from residents and their political representatives, although, as Chapter 6 will explore, local governance is not yet calibrated to enable or facilitate it. It becomes clear also that some key organisations/initiatives/infrastructure will be required in order to make this a reality, and these will be explored in 7.8. It has been argued here that the economic opportunities of relocalisation, in the context of peak oil and climate change are huge, offering, as was hinted at in the Princes' Foundation study on aerated clay bricks, many local jobs, retaining more money locally, leading to an increased and more diverse skills base, and making the area more economically resilient. This would represent a new 'strand' to the concept of 'The Green New Deal' (Green New Deal Group 2008), which sees the way out of the current recession as being through stimulating green jobs and businesses.

The challenges are also many, and have been identified above. One particular challenge is the extent to which local grassroots activist initiatives such as TTT might actually be able to affect significant change on such a scale. In some ways, grassroots organisations are able to do so in ways other, more formal, organisations are unable to. Seyfang (2009c:1) defined 'grassroots initiatives' as "networks of activists and organisations generating novel bottom-up solutions for sustainable development and sustainable consumption: solutions that respond to the local situation and the interests and values of the

communities involved. In contrast to mainstream business greening, grassroots initiatives operate in civil society arenas and involve committed activists experimenting with social innovation as well as using greener technologies". Specifically reflecting on the challenges they face, she identified these as "their small scale and rootedness (which) makes them difficult to scale up and replicate, and their ideological basis can result in value clashes with mainstream settings, resulting in difficulty transferring ideas and practices" (Seyfang 2009c:1). Chapter 7 will go on to look at political obstacles and opportunities, and how such 'value clashes' can be minimised. Alongside this, the question of legitimacy should also be raised: if a significant proportion of a community support the idea of localisation, but the rest are opposed, what issues of democracy and the existence or otherwise of a shared worldview will also need to be addressed?

Chapter 6. Community Structures and Relocalisation

6.1. Introduction

"Internationally local government is constantly nominated as the delivery arm of sustainability practice. On the positive side, this places the local government sector in a key role as the interface between people and governance as a whole, as having locally appropriate management skills, as being in continual dialogue with their communities, and a place where the individuals in government and in the community know each other personally. On the negative side, it can mean that local government acts as the too-hard-basket into which unsolvable problems are thrown, the end-of-the-line for resources and influence that filter down from higher levels of government, and an opportunity for ambitious individuals to start their early career before leaving for better things" (Brown 2005:289).

The purpose of Chapter 6 is to explore the political and organisational structures needed to enable the kind of 'intentional localisation' North (2010a) explored in Chapter 5. It will explore whether current political structures are sufficient to enable and facilitate these processes, and which stakeholder groups would be empowered or disempowered by relocalisation processes. It focuses on the *how* of achieving localisation, in particular the first objective, namely assessing what political and community-related structures would be necessary to implement such a relocalisation process. In the context of Kasser's (2002) four human needs, this chapter explores the second, the need for autonomy and authenticity. He describes this in more detail as;

"we constantly strive for increased freedom and more opportunities to experience life in a self-directed manner. These needs are most apparent in our strong motivation to express ourselves and to follow our own personal interests. Rather than feeling pressured or burdened by our circumstances, we need to pursue activities that provide us with challenge, interest, and enjoyment. By doing so, we can feel ownership

of our own behaviour, and thus feel authentic and autonomous (Kasser 2002:25).

Although the above is written from the perspective of the individual, one can imagine the concept covering a community and its need to feel greater autonomy and control over its own affairs, seen by many as a key aspect of resilience (e.g. CCE 2000, Adger 2003). This discussion begins with an exploration of how Totnes and district is presently governed, and then looks at how peak oil, climate change and resilience are addressed by other local authorities, as well as the conceptual underpinning of responses to those challenges.

Discussion around what democratic processes relocalisation would need is framed around four key principles devised for this thesis. This leads back to a discussion of what, in the context of Totnes and drawing from the previous, wider discussion, local government would look like if it had peak oil, climate change, and building resilience at the heart of its policy making and activities.

The discussions of this chapter are embedded within the concept of scale (Sale 2007). Geographers such as Purvis and Grainger (2004:51) use the concept of scale to "divide the world into manageable segments", while for Gibson et al. (1997:unpaginated) scale refers to "the dimension used to measure a phenomenon". The differing scales of governance that impact on a community such as Totnes can be conceptualised as "nested hierarchies" (Delaney & Leitner 1997, Wilson 2007). For Selman (1996) it is vital to recognise the need for all scales of governance, from national government to the community level,

to work together as effectively as possible, rather than assuming that one can do without the other.

"Whilst international bodies and national governments must continue to be prime movers in reconciling economics and ecological objectives, their statements will be pious and empty if they fail to convince individual citizens, households, businesses and organisations. The former 'macro' dimension is important for securing international co-operation, for law and policy-making, and for instigating debate and research on new areas of environmental science, economics and ethics, while the latter 'micro' dimension is critical to the generation of an enduring commitment to environmental responsibility". (Selman 1996:4)

More recently, geographers have, however, begun to move away from the concept of nested, or hierarchical scales. They are concerned that this carries with it the idea that one scale, by implication, dominates others, being seen as 'mattering' more (North 2010). What is emerging instead is the concept that such ideas about relationships between different scales are socially constructed, connected and inseparable (North 2010, Marston 2000, Brenner 2001, Marston & Smith 2001). For Amin (2002) spatial relationships are imagined as flowing networks which temporarily 'congeal' in places. It is useful to note that in terms of scale, both peak oil and climate change are phenomena that operate at multiple scales (Bulkeley & Betsill 2003). For Swyngedouw (1997) the 'local' and the 'global' are deeply intertwined or "mutually constituted" (ibid:137), and he coined the term 'glocal' to capture the sense of things which are simultaneously situated within the global and the local. Friedman (2006:411) argues that globalisation means the ability of a culture to "easily absorb foreign ideas and global best practices and melds those with its own traditions". The Transition concept it, in itself, a fascinating example of 'glocalisation', a global movement of

initiatives which are trying to economically localise, while at the same time sharing their experiences globally.

At this point, defining the term 'governance' would be useful. Governance is, according to Stewart (2000:178) "a much looser process of steering localities which often involves issues transcending geographical or administrative boundaries, which is multi-sectoral, and in which networks, alliances and coalitions play an important part..." For Moser (2008:314) it "can be broadly conceived as the set of decisions, actors, processes, institutional structures and mechanisms, including the division of authority and underlying norms, involved in determining a course of action". Dryzek (2005:97) argued that government is, by definition, top-down, while "governance is decentralised, informal, and networked".

6.2. Do existing political structures enable/support relocalisation?

6.2.1. Existing political structures in the area

At present, Totnes is governed by a three tier government system, comprising Totnes Town Council, South Hams District Council, and Devon County Council. This system was introduced in 1974 with the dismantling of the boroughs, the aim of which, argues Wilson (2003:8), was to “weaken and bypass elected local authorities and empower consumers”. The wider context of both the 1974 reforms and of subsequent Conservative party policy, according to Loughlin (1996:417) “seem[ed] to deny that local authorities should any longer be treated as institutions of governance; they seem now to be treated merely as agencies for delivering centrally-determined policies”.

Parish and Town Councils are known collectively as “local councils” (Pearce & Ellwood 2002), and form the lower tiers of local government. Of these, only about 5%, Totnes included, possess ‘town status’, and most, like Totnes, became so following the loss of their urban status during the 1974 reforms. In spite of their larger size (90% of Town Councils have populations over 2,500, only 10% of Parish Councils do (Pearce & Ellwood 2002)), they have largely the same powers, although town councils have the discretion to appoint a Mayor. Unlike other European states where the commune, a political unit little larger than English parish councils, has an active role in decisions regarding services and some political clout (Batley 1991), in the UK they are much less powerful.

SHDC formed on 1st April 1974 as a result of the 1972 Local Government Act, and the area for which it is responsible covers 83,500 people (Office of National

Statistics 2009). Its offices are based at Follaton House in Totnes. DCC employs over 20,000 people and has 62 elected County Councillors. Table 6.1. identifies the responsibilities of the different tiers of local government in relation to Totnes.

Totnes Town Council
Responsible for articulating community concerns and opinions, need to be informed of planning applications within their boundaries, transport issues (footpaths, traffic, lighting, car parking, management of open space, litter, management of community halls and allotments).
South Hams District Council
Building Regulations, Cemeteries, Council Tax Collection, Electoral Registration, Environmental Health, Housing, Leisure Centres, Licensing, Local Planning Applications, Refuse Collection, Sewerage Maintenance, Street Cleaning, Swimming Pools
Devon County Council
Schools, Social care for the elderly and vulnerable, roads, maintenance, libraries, trading standards, strategic responsibility for planning, waste disposal, transport.

Table 6.1: The division of responsibilities between the tiers of local government responsible for Totnes (Source: Devon County Council 2010, Pearce & Ellwood 2002)

6.2.2. Shortcomings in the current system

Questions as to the limitations of the structure of SHDC, how it obstructs relocalisation and how it might better be reconceived are explored below. Within that system, how does the current balance of power affect Totnes's ability to build a more relocalised economy? SHDC is mostly Conservative, apart from the four District Councillors for Totnes (three Liberal Democrat, one independent). This leads to a political culture in which Totnes is politically isolated, given that there are four Councillors representing Totnes, and 36

others. As DC3 puts it "my Tory colleagues think we're a joke! We have to get on with them, we work with them, but they think Totnes is a bit of a joke. We're always the ones raising things like public ground, public art, the environment, energy efficiency, climate change and the like, and they're like 'that's very interesting, but go away'". TC2 put it like this; "if you go to meetings at South Hams, you will hear a lot of comments, particularly when the whole County are there too. "Oh, Totnes again! Oh, those fairies over there!" DC3 confirmed this, referring to an interview with a senior planner who described Totnes as 'flaky'. She added that "the last time I mentioned the low carbon economy idea, I was told I was living in Cloud Cuckoo Land!" DC2 voiced the frustration that accompanies being a Totnes representative at SHDC, "there are forty councillors and our four votes don't count for a great deal".

TTC, the tier of local government closest to the community, has very limited powers. As DC1 put it, the Town Council, "apart from looking after the cemetery and the museum, is basically an advisory body to District and County Councils". Another argued that TTC, "as far as local government is concerned, doesn't really exist". With regard to SHDC's commitment to tackling climate change, several interviewees also noted several Councillors who are outspoken climate sceptics. DC1 claimed that "we clearly have, at District Council level and probably at other levels, several people who are anti-environment and who believe that climate issues should be struck out of the agenda entirely". DC3 confirmed this; "I've got one Councillor who sends me, every Saturday morning, something in the post, a copy from the Daily Telegraph or something, telling me that the world's actually getting colder, climate change is not happening... what can you do? These people just don't want to know..." SP1 also recognised the

presence of climate sceptics in the Council. "There are some members that are very much champions of climate change issues and what the organisation needs to do, and we have other people who don't subscribe to it ... there are absolute converts and there are absolute sceptics and we have them all in our organisation".

Many interviewees identified the longstanding sense that SHDC views Totnes as a rather troublesome community. A reporter at the Totnes Times, said that he felt that "I think sometimes there are almost too many community groups fighting for the same territory". When asked whether he felt that in recent years the voice of Totnes was becoming more, or less, coherent, SP1 replied "I think we get spells of a more unified voice, but then it fractures again and gets fragmented". He gave the example of the Southern Area development in Totnes town centre. "When we first started that project we had a big outcry. Then there was a lot of community engagement and community support, but because a development takes so long, by the time it became a planning application, despite all that input from a wide range of people, a new group of protesters had emerged! So this single voice varies, and goes up and down". For TC2, "most of what happens in Totnes comes from individuals and groups. There's very little coherence". However, other evidence suggests this coherence is increasing.

In the public survey, respondents were asked the extent to which they agreed or disagreed with the statement, "I feel adequately included in public consultation processes on major planning decisions that affect the town". 51% of people agreed, with 11% strongly disagreeing. For 49% of a population to feel that

they are not adequately included in public consultation processes is probably consistent with the situation elsewhere in the country. For an insight into how the dynamic between the community of Totnes and SHDC is changing, it is instructive to examine the story of the Totnes and District Development Plan Document (DPD).

6.2.3. The Totnes Development Plan Document

In October 2007, SHDC released its draft DPD for Totnes and Dartington, which identified its preferred sites for development in the town. The community was invited to give feedback on the proposals. DC1 begins the story: "The initial set of proposals were appallingly inappropriate for the town, it basically looked like a developers' charter. Large chunks of green field sites earmarked for housing or industrial development, with no integration, no capacity for walking to the centre of town, completely car-based, new build, standard housing". "However", he continues, "it probably led to the most joined-up community response there has ever been. The most exciting thing, rather than sending in lots of individual responses, all the community groups got together with much discussion and actually came up with a consensus opinion, and then we got the Town Council to endorse the response". The resultant response document, which required an amount of work described by TC2 as "absolutely horrendous", and which combined all of the disparate groups' responses, went beyond merely criticising the SHDC proposals, it identified where proposals were counter to national planning guidance and suggested alternative sites which were more in keeping with that guidance. DC1 noted that two of the drafting team had PhDs in *planning, whereas the Council itself has no planners with such qualifications.* This resonates with Seyfang's findings (2009d:2) from her survey of the make-

up of Transition Norwich, which found “that those sampled were extremely well-educated, with 46% holding a degree or equivalent, and 37% had attained a postgraduate qualification, making a total of 83% holding at least a degree. This compares with just 15% of the general population in the Eastern region”. It posits an interesting possible connection between the effectiveness of towns that engage with Transition and the level of education of those involved¹³.

Early indications were that the community’s response would be largely ignored in the final Plan. Indeed, DC2 refers to the reaction within SHDC to the Totnes response as having “a blue fit”. As DC3 puts it, “I have been a councillor for over 10 years and South Hams don’t do consultation basically. They don’t know how to do it, don’t have the skilled facilitators, officers, anyone with vision, or planners. Their whole *raison d’etre* is to defend policy. Get the prevailing view through with as little opposition as possible”. This sense of impending disappointment led to some members of the community to arrange for the Prince’s Foundation to come and run an abbreviated version of its ‘Enquiry by Design’ process in the town. According to DC1, “the recommendations that have come from that are actually quite close to those made by the community, and as a result, SHDC’s proposals have been radically rewritten and there’s a great improvement”. DC2 agrees. “Looking at its outline, I don’t think there’ll be a lot for people to object to”. SG1, one of those who co-ordinated the response, described the rewritten DPD as “largely what we were calling for. At this point (the interview took place the day after its publication) you can knock me down

¹³ An important clarification: TTT was one of many local groups who made submissions to this process, it was the Totnes Strategy Group and the Town Council who collected the overall community response.

with a feather! It's taken two and half year's work, but we've stuck with it. It felt like a war of attrition, but we've got there".

Reflecting on the DPD experience, DC1 claimed that, "the lesson is that persistence works, and that once the community gets itself joined up and responds in a professional manner in the language of local authorities, that it will be listened to. It has been a real education for us all. A few years ago we said there's no point talking to the Council, they'll ignore us anyway. But if you do it professionally, there's no way they can avoid listening to you". SG1 added that "they are still utterly motivated by the least difficult path, and our success lay in putting so many boulders in the way, that they've actually now found the least difficult path". SP1 offered a perspective from within the planning department:

"I don't think the community understood what we were trying to achieve. It felt that we were always being painted as the bad guys. We were sitting there thinking "well surely it's what the community wants; they tell us they want affordable housing in all our surveys. They were also really concerned about jobs because there was an outcry in relation to Dartington College moving out, and there was an outcry about Dairy Crest. So there we are, trying to protect these sites [for future employment options], so we're not allocating and suddenly we're painted as the bad guys.... you've got to get that balance right between engaging people and delivering priorities, there's not an easy solution to that".

There was a general sense, from talking to many of those who have been involved in the process of the Totnes DPD, through to the EBD process, that something is shifting in terms of the relationship between the community of Totnes and SHDC, and that the community's voice is seen as being more

coherent. This reflects Grainger's (2004:79) caution about bottom-up community-led responses, but also his enthusiasm for its potential;

"A bottom up approach is often assumed to be good for the environment on the assumption that everybody is keen to conserve their own immediate surroundings. This may be over-optimistic, but local peoples' knowledge of the natural and cultural environment is invariably superior to that of external 'experts'".

6.3. Governance for Transition

6.3.1. 'Localism' or 'localisation'? The national context.

Often, the terms 'localism' and 'localisation' are used relatively interchangeably, but it is important at this stage to note that they refer to different things. Stoker (2007) defined 'New Localism' as "a strategy aimed at devolving power and resources away from central control and towards front line managers, local democratic structures and local consumers and communities, within an agreed framework of national minimum standards and policy priorities". For Morphet (2004:292) it is "a means of improving democratic accountability, providing a local mandate, and producing inter-agency approaches to localities". Localism can therefore be seen as being primarily concerned with governance, while localisation, on the other hand, is a wider, more far-reaching adjustment of economic focus from the global to the local. Hines (2000a:27) defines localisation as "a process which reverses the trend of globalisation by discriminating in favour of the local". Shuman (2000:6) adds that:

"...it means nurturing locally owned businesses which use local resources sustainably, employ local workers at decent wages and serve primarily local consumers. It means becoming more self sufficient, and less

dependent on imports. Control moves from the boardrooms of distant corporations and back to the community where it belongs”.

Assumptions shared by Localism and Localisation
<p>Local people should have more control over local services and decision-making</p> <p>Stronger local government and increased accountability is a good thing</p> <p>Community ownership and the Right to Buy are important</p>
Assumptions Not Shared by Localism and Localisation
<p>Localisation is underpinned by an ethic of sustainability: this does not necessarily enter into localism</p> <p>Localisation embodies the Proximity Principle, arguing that where money flows from and to are important, and that what can be produced locally should be consumed locally where possible: localism sees itself within the context of business-as-usual economic globalisation</p> <p>Localism seeks to reduce the role of the state and of ‘big government’, localisation can happen within the context of stronger government, indeed it argues that addressing global issues such as climate change or resource scarcity will require strong government alongside community engagement</p> <p>Localism seeks to transfer <i>state</i> assets (schools, hospitals etc.) into community ownership: localisation focuses more on control rather than ownership of those assets, and might seek to bring key local functions (food production, building development, energy generation) currently in the <i>private</i> sector into community ownership</p> <p>Localisation argues for a different relationship between consumers and producers, localism has no such critique</p> <p>Localisation seeks to increase tightness of feedbacks, so that consequences of resource use are felt closer to home (i.e. local food production): localism operates in the context of economic globalisation, with no concept of feedbacks.</p>

Table 6.2. The assumptions shared and not shared by localism and localisation (Source: the author).

One might tentatively argue that localism therefore focuses on political structures, the devolution of governance, the application of subsidiarity to democracy, while localisation focuses instead on the practicalities of building more localised economies, in terms of food, energy, manufacturing and so on, which may necessarily include governance (a distinction explored in Table 6.2).

For Daly and Cobb (1994), the term subsidiarity means that “power should be located as close to people as possible in the smallest units that are feasible” (ibid:174). For Ziman (2003:63) it means “decisions should be taken at the lowest competent level in an organisational hierarchy”. Table 5.1 gave an indication of what subsidiarity could look like in terms of local economics, but in terms of political organisation it is a greyer area. The term does have its doubters; as Robinson (1996:unpaginated) put it “the chief advantage of subsidiarity seems to be its capacity to mean all things to all interested parties – simultaneously”. Others add that there is little to be gained by academic debates around subsidiarity, as it is entirely place-specific and the conclusions reached will always be contextual and dynamic (McKean 2002). For Blond of Respublica¹⁴ (2010a: pers.int.), the role of national government is to enable “the highest level of subsidiarity possible”. In the context of Totnes, subsidiarity could be interpreted as referring to decision-making being brought as close as possible to the community level, the community response to the Totnes DPD discussed above offers a glimpse of what subsidiarity, in terms of planning, might look like in practice.

¹⁴ Respublica describes itself as “a multi-disciplinary, non party-political research organisation, which combines cutting-edge analysis with practical impact to create bold solutions to enduring social and economic problems”. Its founder, Philip Blond, is one of the leading architects of the ‘Big Society’ promoted by the Conservative Party, and is influential on David Cameron’s thinking. <http://www.respublica.org.uk/>

Localisation applies the concept of subsidiarity to economic life, as well as to the political. While localism can perfectly well take place within a globalised growth-focused economy, a 'business as usual' scenario (see 2.4.3.) (hence its appeal to mainstream political parties), whereas localisation carries within it an inherent social justice and resource-focused critique of globalisation (Bailey et al. 2010, North 2010a), emerging from concepts such as Limits to Growth (Meadows et al. 2004), Steady State economics (Daly 1977) and Schumacher's (1974) concept of 'Buddhist economics'. Localisation is a social movement and a principle for social and economic reorganisation, whereas localism is a principle for political organisation.

Although the question of what local government focused on resilience-building and Transition might look like will be explored below, a useful place to start is in considering how the national political context might best enable relocalisation. Porritt (2008:47) argues that "the tension between centralisation and decentralisation is ever-present in terms of alternatives to the current world". In national politics, the concept of localism is very much *in vogue* at the moment (Parvin 2009). David Cameron, as part of his 'Big Society' concept, has spoken of "pushing power down as far as possible" and of "a massive, radical redistribution of power" (Cameron 2009:unpaginated). Former Labour leader Gordon Brown called for "a vibrant, reformed local democracy [rooted in] a renewed focus on the devolution of powers and responsibilities to local government" (Bleas 2008:51), and the 2006 Power Inquiry called for "the introduction of institutional and cultural changes which place a new emphasis on the requirement that policy and decision-making includes rigorous and meaningful input from ordinary citizens". The 2008 White Paper "Communities

in Control: real people, real power", proposed the shifting of "power, influence and responsibility away from existing centres of power into the hands of local communities and individual citizens" and suggested that Participatory Budgeting (see 6.3.3) be undertaken in all local authorities by 2012. It is worthwhile noting that the concept of localisation, with its more radical ambitions and greater perceived challenge to current-day economics, is never used at this level, rather 'localism', focused largely on political governance, is the term of choice.

The previous Labour government made 'modernisation', referring to constitutional and democratic modernisation, part of its agenda since its election in 1997. Most obviously, it introduced Scottish and Welsh devolution, regional elected assemblies in England, a London Mayor and Assembly, but perhaps less obviously, Pratchett (2004:11) points out, it has introduced "modernisation of internal political management structure, experimentation with new electoral processes and technologies, through to exhortation for greater citizen involvement and engagement in local affairs". In spite of this, it has been criticised for achieving the opposite, for continuing centralisation strategies and 'control freakery' (Wilson 2003). Stoker (2001:3) argues that New Labour's approach to central-local relations can be seen as "a classic example of a hierarchist approach". Wilson (2003:26) is careful to distinguish between approaches and language used by New Labour, and actual results; noting "an involvement in and commitment to 'dialogue' and 'partnership', but *dialogue* does not necessarily convert to *influence*, and multi-level *participation* is different from multi-level *governance*". The UK, after 13 years of Labour government, is still one of the most centralised states in the Western world (Hambleton & Sweeting 2004). Lancaster City Councillor John Whitelegg (2010

pers.int.) is suspicious of politicians who use the term localism. "Britain is grossly over-centralised and I think that whenever a national politician starts talking about 'localism' their nose starts going into Pinnochio mode". For Blond (2010a:pers.int), genuine localisation "requires a political economy if it's going to work". Part of this, he argues, is "local councils and local authorities having genuinely independent revenue-raising capacity, the ability to vary, for instance, the national non-domestic business rate, the ability to generate new forms of revenue and share in those new forms of revenue" (ibid), a power that can only be bestowed by national government.

6.3.2. Principles for Transition Local Government

Many of those interviewed for this research felt that Totnes's existing political structure, although not ideal, is here to stay and will be the one Transition will need to embed within and influence. It may, however, be worthwhile to speculate at this point as to what might a local political system designed to best enable relocalisation look like? In order to do this, the rest of 6.3.2. looks beyond Totnes, to wider debates about governance in relation to peak oil, climate change and resilience, to inform the subsequent discussions about what local government best calibrated to enable relocalisation and resilience in Totnes would look like.

Daly and Cobb (1994:174) argue that "with economic decentralisation there could come political decentralisation as well", and that a refocusing on stronger local economies inevitably leads to the need for stronger local governance. Soussan (2004) warns against this though, questioning the scalability of strategies found to be successful on the local level. While acknowledging that

there are many examples of local scale initiatives that have been successful, he argues that they are "limited by the classic problem of scaling up; how to replicate effective but restricted local efforts to create change at a scale which impacts upon poverty and resource degradation at the national or regional level (ibid:97)?"

While there are other variations on this theme of strengthening local governance, such as participatory democracy (Boulding & Wampler 2010) and representative democracy (Jayal 2009), for Lappé (2007), democracy as currently practiced (what she calls 'Thin Democracy') is insufficient for the demands of achieving sustainability. She argued that integral to successful democracy is "the inclusion, engagement and commitment of citizens" (2007:176) and that 'Living Democracy' will have the system characteristics of being dynamic, values-driven, comprehensive, skills-based and power-creating. Others would dispute this fundamental assumption however. Grainger (2004:79) argued that participatory approaches with regard to planning and management are still limited and do not provide any kind of "instant solution" to the problems that have long affected planning. Participation, he stated, "cannot guarantee sustainable development". Atkisson (1996) noted the experience of Sustainable Seattle in the US, who, as an outcome of a public participation process, produced 40 sustainability indicators for the city, but they were rejected by the city authority as they felt compelled to comply with national indicators. Community participation on its own will clearly not enable Transition to become deeply embedded in Totnes, engagement of the local authorities is clearly also vital.

Given that Transition is conceived as a response to both peak oil and climate change, and as a way of building resilience, a suitable place to start is to ask what the literature on those three areas of study has to say about what political responses to them, and what appropriate governance might look like, as well as what examples already exist of local authorities responding proactively to them?

Local Government and Peak Oil

The literature on peak oil rarely touches on issues of governance. Much of it bypasses governance altogether, and instead takes a survivalist position (e.g. Savinar 2004, Nowak 2008), arguing that inevitable collapse makes governance less of an issue (Kunstler 2005), or that the financial chaos peak would create would lead to a situation over which national government would have little control (Korowicz 2010). However, in the US, many city authorities have begun to address issues of peak oil, passing 'Peak Oil Resolutions'. The first was San Francisco in April 2006, and many others have now followed, with many going further and producing peak oil plans¹⁵, such as San Buenaventura, California (see Text Box 6.1) and Portland, Oregon (see Text Box 6.2).

Lerch (2007:50), following a review of the resolutions and plans that have so far emerged, concluded that "in almost all instances, however, citizen initiatives played decisive roles in spurring local governments to prepare studies, set up task forces, and make official statements". ODAC (2007:34) echoed this, arguing that "the most fundamental change needed is in the way people think. Local policy will be fundamental to the transition to a lean-energy future, but councils cannot achieve everything by themselves; the necessary changes will

¹⁵ A comprehensive list of these Resolutions and Plans is maintained by the Post Carbon Institute at <http://postcarboncities.net/resources>

require much greater co-operative spirit within and between communities in future”.

The San Buenaventura plan was designed “to inform planning decisions at the regional, city, community and household levels” (Chen et al. 2007:iv). It brought together GIS analysts, traffic engineers, planners, architects, agricultural consultants, permaculturists, community members and others, including peak oil educator Richard Heinberg and was based on understanding peak oil as necessitating “decreasing energy consumption through community design and planning” (ibid:279). The resultant plan, “Transforming Urban Environments for a Post-Peak Oil Future”, is a deeper and richer document than Portland’s, more explicitly built around the concept of localisation, incorporating new elements which can also be found in the Totnes and District EDAP. These include;

- The use of Photoshop to create ‘visions’ of a more localised future
- The use of ‘timelines’, which divide visions of the future into 3 groups, 2007-2015 “Longing for the Sea”, 2015-2025 “Building the Ship”, and 2025 to 2050 “Sailing the Ship”.

Text Box 6.1. The San Buenaventura Post Oil Plan (Source: Chen et al. 2007)

The Welsh National Assembly government (Clubb 2008, Pitts 2009) and the Irish government (Forfas 2006) have also published reports on peak oil. In 2008, the Local Government Association acknowledged peak oil as an issue of vital consideration for local authorities publishing its report “Volatile Times – transport, climate change and the price of oil” (LGA 2009). The document proposed Transition as one of a range of responses and acknowledged the role of relocalisation. It was widely distributed, however, one of the report’s authors, Lancaster City councillor John Whitelegg, was asked what response the report had received from local authorities: “Absolutely no response whatsoever. Absolutely nothing. These things are very dependent on the Chief Executives; what he or his PA do when they open the brown envelope” (2010: pers.int.).

The Portland Peak Oil Task Force was set up following the passing of a peak oil resolution by the City of Portland, and tasked with "examining the potential economic and social consequences of peak oil in Portland (population 197,300) and developing recommendations to mitigate the impacts of rising energy costs and declining supplies" (Portland Peak Oil Task Force 2007:1). The report's recommendations focused on the following:

1. Reduce total oil and natural gas consumption by 50% over the next 25 years
2. Inform citizens about peak oil and foster community and community-based solutions
3. Engage business, government and community leaders to initiate planning and policy change
4. Support land use patterns that reduce transportation needs, promote walkability and provide easy access to services and transport options
5. Design infrastructure to promote transportation options and facilitate efficient movement of freight and prevent infrastructure investments that would not be prudent given fuel shortages and higher prices
6. Encourage energy-efficient and renewable transportation choices
7. Expand building energy-efficient programmes and incentives for all new and existing structures
8. Preserve farmland and expand local food production and processing
9. Identify and promote sustainable business opportunities
10. Redesign the safety net and protect vulnerable and marginalized populations
11. Prepare emergency plans for sudden and severe shortages

Text Box 6.2. The Portland Peak Oil Report (Source: Portland Peak Oil Task Force 2007).

Nottingham City Council has passed a peak oil motion (Nottingham City Council 2008), and an All Party Parliamentary Group on Peak Oil and Gas has also produced reports (e.g. APPGOPO 2009). The South West Draft Regional Spatial Strategy also acknowledged peak oil, writing that "technological development driven by scarcity of oil and other resources may provide solutions to carbon based resource use in production and transport" (SWRDA 2006:17), although at the time of completing this thesis it has been announced that the Regional Development Agencies are to be scrapped. The most comprehensive thus far is Bristol City Council's Peak Oil Report, which was issued by the

Council and issued to all of its Local Action Groups groups. It identifies six key options for action (Table 6.2);

1. Acknowledgement

Publicly acknowledge peak oil as a threat. Pass a resolution to take actions now to lessen the impacts which peak oil would cause

2. Leadership

Set up a cross sector team, with a budget, to take the work forward. This could be owned by the Bristol Partnership with oversight on team selection and monitoring of progress by the Green Capital Momentum Group

3. Engaged Communities

Emphasise the role which communities have to play in Bristol's future. Support community engagement activities and provide education and assistance on building resilience and reducing reliance on public services

4. Focus on Accessibility

Drive actions and policies which reduce the need to travel for essential services and needs. Support cycling and walking and development of a sustainable and effective public transport system

5. Food Security

Drive actions and policies which improve food security by supporting local food growing and production. Develop sustainable agricultural practices.

6. A Robust Economy

Support and develop a local business environment which can thrive in a low carbon, low waste economy. Ensure that jobs and opportunities are available across the city to avoid creating conditions for social breakdown.

In the context of Totnes, neither SHDC nor DCC have policies that refer to peak oil. When asked what degree of consideration is given to liquid fuel price

volatility within SHDC, it is interesting to note that SP1 viewed the problem solely in the context of the impacts on the Council's transport fleet, rather than in terms of its wider and deeper impacts.

Local Government and Climate Change

Initially, literature on governance for climate change focused primarily on national and international levels, such as Kyoto. During the 1990s, local climate policy-making became established as a distinct policy field of its own (Lindseth 2006). It is now evident that local government-level action is an important part of the national response (Bulkeley & Betshill 2003), what Gibbs & Jonas (2001:272) called "rescaling environmental governance". Vogler (2003:30), drawing on the concept of multilevel governance envisaged "a nested hierarchy of governance levels reaching down from the inter-state to the local level". However, for Bulkeley (2005:879) "the scales of governance remain bounded, and there is little consideration of the possibilities that the governance of global environmental issues might emanate from the 'bottom up'".

Much of the literature on responses to climate change tends to focus on the issue of adaptation (e.g. Adger et al. 2009). This argues that adaptive capacity, defined as "the ability of a system to adjust to climate change (including climate variability and extremes), to moderate potential damages, to take advantage of opportunities, or to cope with the consequences" (Brockhaus & Kambire 2009:400) is a function of governance features. Finan and Nelson (2009) argued that "successful adaptation to climate change will require the active participation of local communities in the process and that institutional adjustments will inevitably focus on community reorganisation and initiative".

Brockhaus and Kambire (2009:401) saw decentralisation as key, arguing that "decentralisation can be considered as a promising approach for increased adaptive capacity at the local level". They also argued that;

"If 'participation' is nothing more than 'consultation', adaptation efforts designed at global, regional or national level are not informed by local experience and will not have an impact at the local level, where adaptation is practiced, needed and should be supported. On the other hand, participation in policy processes is needed, otherwise reform processes will remain isolated – far away from local realities and far away from local needs" (ibid:414).

Climate change is, as Porritt (2008:16) argued, "the first indisputably global phenomenon, affecting the totality of natural systems that make up the biosphere". However, in the absence of meaningful international action, the experience in the US of the Mayors' Climate Protection Centre (MCPC 2008), where over 500 US Mayors are committed to reducing the emissions of their towns and cities through the Climate Group (Climate Group 2004), and of UK local authorities such as Kirklees (see Text Box 6.3), Merton and Woking, shows the potential leadership local government can take on climate change. Westcott et al. (2005:285) stated that "although local government has traditionally been seen as the most marginalised and least influential sphere of government in many countries around the world, it is now establishing itself as a leader and advocate to state and national governments".

Kirklees Council is one of the UK Councils that has taken the most proactive position on climate change. It has signed up to the 10:10 campaign, and has set itself the target of reducing its emissions by 30% by 2020 from a 2005 baseline. It is the first Council in the country to develop a carbon budget, which commits the Council to cutting emissions by 3% annually in all areas it serves. A city of around 200,000 people, the Council set up Kirklees Energy Services, an ESCO (Energy Services Company), set up as a not-for-profit social enterprise. In its first three years, it installed 2,080 energy efficiency measures in 1,455 households, saving 34,304 tons of carbon. They offer households a wide range of financially viable energy efficiency measures. In April 2007, it launched its WarmZones initiatives. This involves knocking on every one of the 171,000 doors in the city, offering an intergrated service of energy efficiency measures, domestic renewables and they are on target to insulate 60% of all properties. It has created 100 new jobs and lifted 5-6,000 households out of fuel poverty.

Text Box 6.3. Climate actions undertaken by Kirklees Council (Source: Bolt 2008).

SHDC is, at the time of writing, finalising its climate change policies. From draft documents, an idea as to what is likely to emerge can be gleaned. Climate change is a "cross-cutting theme", meant to be taken into account in all SHDC's activities. "Tackling climate change is a global problem and national policy and legislation is moving to help mitigate the impacts. However, it must also be addressed at a local level with local solutions" (SHDC 2010a:2). The Council's thinking is that its three cross-cutting themes of efficiency, sustainability and climate change "align well" and that "the new drive for efficiency savings can be contributed to by being a more sustainable organisation, not only by reducing

our carbon footprint but by continuing to work towards all of our Corporate priorities" (ibid). The 'Draft SHDC Climate Change Action Plan to 2012' (SHDC 2010a) states various commitments;

- 20% cut in emissions by 2012
- Signing the Nottingham Declaration on Climate Change¹⁶
- Signing up to the 10:10 Campaign¹⁷
- Embedding climate change and sustainability considerations into policy making

DC1 is cynical, however, of the Draft Action Plan;

"...what the Council have done is gone through all their existing policies and seen if any have climate change implications and if so they have included them in their policies. They are not setting renewable energy targets, and are not imposing any more than the minimum building standards, the main focus seems to be increasing the energy efficiency of Follaton House (SHDC's offices) and their vehicle fleet".

It was striking in the interview conducted with SP1, than whenever pressed as to the Council's actual targets and tangible projects, the examples cited were work underway in the Councils vehicle fleet and increasing the energy efficiency of its buildings, but also Sherford, a new settlement being built in the District. However, when pressed about Sherford, initially described as "incredibly radical", he conceded that the recession has led to many low carbon innovations on which the development was based are being dropped. "As it gets tighter (the economic picture) the 'nice to do' stuff gets stripped out and that's what we're finding at Sherford. All the community gains, whether it's the sustainability agenda or the affordable housing agenda, some of the requirements start to be pulled down significantly". The key fear appears to be

¹⁶ The Nottingham Declaration on Climate Change commits local authorities, LSPs and local strategic partners to action on climate change. [http:// www.energysavingtrust.org.uk/nottingham](http://www.energysavingtrust.org.uk/nottingham)

¹⁷ www.1010uk.org

that any carbon reduction or renewable energy standards or targets could be perceived by developers as too onerous, and "would mean that we had very little development in the town over the next few years.... it's getting that balance right between the vision and somebody facing homelessness today". This idea that a proactive response to carbon reduction inevitably leads to development grinding to a halt would appear to be something that other local authorities, such as Kirklees, have overcome to a greater extent.

Local Government and Resilience

The literature exploring what local government can do to enhance resilience also has useful insights to contribute, but less tangible results so far. Adger (2003:12) argued that;

"the agenda implied by resilience actually challenges some widely held tenets about stability and resistance to change that are implicit in how sustainability is formulated in environmental and social policy arenas around the world. Promoting resilience means changing, in particular, the nature of decision-making to recognise the benefits of autonomy and new forms of governance in promoting social goals, self-organisation, and the capacity to adapt".

Walker and Salt (2006) identified some of the key traits that local government working to promote resilience would require, in particular redundancy and diversity. Promoting flexibility is vital, they suggested. "Totally top-down governance structures with no redundancy in roles may be efficient (in the short term) but they tend to fail when the circumstances under which they were developed suddenly change" (Walker & Salt 2006:148). Adger (2010: pers.int) picks up on this point:

"[Local government] needs to be able to promote flexibility, and two things to do that are firstly to let civil society flourish, provide the resources that allow civil society groups and civil society to flourish within the local region, and secondly that they have the democratic accountability, open forums and new ways of actually gathering information that actually allow local government itself to take on board new ideas, because there's never any shortage of ideas to what can promote resilience".

The Community Resilience Manual (CCE:2000:4) saw a resilient community as "one that takes intentional action to enhance the personal and collective capacity of its citizens and institutions to respond to, and influence, the course of social and economic change". One of its 23 'Characteristics of Resilience' (see Table 2.2.) was "leadership is visionary, shares power and builds consensus" (ibid:13). Newman et al. (2009), focusing on resilient cities, proposed that local government take a highly proactive role, establishing an 'Office of Localism', tasked with funding and supporting innovations in localisation, as well as assisting the establishing of "many other elements of the local and regional food infrastructure that are often missing today" (Newman et al. 2009:141). At present, for national government, and, by extension, for local governments, the term 'resilience' is most frequently applied to emergency preparedness. The Cabinet Office's Civil Contingencies Secretariat 'UK Resilience' website sets out how government and local authorities will respond to emergencies such as terrorism, pandemics and floods. The 2004 Civil Contingencies Act set out the powers available to government in the event of such an emergency, which have generated a great deal of alarm from those concerned with civil liberties. Clauses such as "emergency regulations may make any provision which the person making the regulations is satisfied is

appropriate for the purpose of preventing, controlling or mitigating an aspect or effect of the emergency in respect of which the regulations are made" (HMG 2004:unpaginated) have led to concerns being raised as to the meaning, in practice, of the term "make any provision" (Porter & Blair 2006). The 2008 National Security Strategy defined community resilience as "communities and individuals harnessing local resources and expertise to help themselves in an emergency, in a way that complements the response of the emergency services" (Cabinet Office 2008:3). This approach is clearly a distinctly different understanding of resilience than that explored in 2.5. Rather than seeing this as somehow an abuse of the term, or a premonition of 'resilience' being used to diminish social justice rather than increase it, Adger (2010: pers.int.) sees it as;

"a glimmer.... the idea of flexibility and resilience are at least within the lexicon of what the responsibility of government and local government might be. There may be ways for those ideas around short term emergencies to say 'well actually, we face some longer, more structural crises and the language and the ideas of resilience are something that can actually be taken forwards'".

SHDC, along with all the other District Councils in Devon is part of the Devon Local Authorities Resilience Group, set up to "to promote local authority co-operation and mutual support in Devon in response to Emergencies" (SHDC 2010b:unpaginated) and has produced a 'Business Continuity Plan', as part of its obligations under the 2004 Civil Contingencies Act which commits District Councils to "have in place plans to ensure that it can continue to operate essential services during an emergency situation" (HMG 2004:unpaginated). This is the only context within which the concept of resilience would appear to be used by SHDC. One local authority which has taken a broader approach to

action on resilience is Nottinghamshire County Council. They have employed a "Community Resilience Officer" who, according to DEFRA (2010a:41):

"works within the emergency planning department. This post forms part of a team tackling the wider aspects of emergency planning but with a clear remit to help communities identify opportunities to alleviate problems which might occur as a result of climate change. Making use of whatever communication channel is most effective, including close working with town and parish councils, the Officer will help communities form their own community emergency plans.

This perhaps offers some indication of what a Council response to climate change and resilience might look like, but still neglects peak oil as a consideration.

6.3.3. A Tentative Approach to Governing for Transition

Having looked at some of the thinking around the nature of governance appropriate to address peak oil, climate change and resilience which emerge from their respective literatures, how might it translate into practice? What might a deeper, more participative form of democracy look like if designed to address those three challenges? Here I propose a set of four principles through which to look at how the Transition movement is already addressing issues of governance, as well as best practice from elsewhere. They are not mutually exclusive, indeed ideally would all occur simultaneously:

1. Bottom-up: lead by example
2. Build Bridges to Local Government
3. Support Local Authorities to Deepen Democracy
4. Engage with Local Government Policy-making

1. Bottom-up, leading by example

Transition has, from its inception, chosen a non-confrontational, non-blame approach (North 2010a), and is “emphatic that Transition groups refuse all political affiliation” (Bunting 2009: unpaginated) choosing instead to catalyse communities in modelling change (Brangwyn & Hopkins 2009). Lappé (2007:179) argued for “community based initiatives aimed not at sermonising but at democratic social change”. This approach can be seen in the ways in which the concepts of Transition have permeated the sustainability discourse over the past 3 years. From New Economics Foundation’s ‘The Great Transition’ report to the UK Government’s ‘Low Carbon Transition Plan’, it could be seen as having influenced the debates and the language beyond the Transition movement itself. Transition is becoming an increasingly global network, with national hubs now in Canada, the US, Sweden, Italy, Scotland (funded by the Scottish Government), Ireland and New Zealand. It is increasingly seen not just as local initiatives, but as a coherent, decentralised citizen-led response (North 2010a) and one which is “engaging people in a way that conventional politics is failing to do” (Bunting 2009:unpaginated). In the run-up to the 2010 General Election, many Transition initiatives ran hustings events which brought candidates together to discuss resilience and sustainability (Transition Network 2010b, Williams 2010).

2. Build a Bridge to Local Government

In an online discussion on TransitionCulture.org¹⁸ discussing the experiences of Transition Stroud (see below), author Keith Farnish (2009: unpaginated) wrote “I can’t see how local authorities, predicated on economic growth, and

¹⁸ The blog run by this author.

maintaining strict hierarchical structures and incestuous relationships with business (as they do) can be anything but a burden to the Transition Movement. Surely what is required is some kind of “shadow community” that works to usurp the business-obsessed status quo. Politics is a dangerous avenue for anyone who really wants change – the whole system is toxic”¹⁹. This echoes Bahro’s (1986) concept of ‘liberated zones’. For Bahro, these were new networks, delinked from the present system, economic, cultural, political and social spaces outside of current economic and political structures (Garavan 2004). The point, as Garavan (2004:158) observes, is “to bring people together now to create real, existentially-viable alternatives and support networks in order to begin the process of constructing a new, sustainable society”. He stresses however that such an approach is not one of opting out, but must be a political process. Garavan sees these as the source of the new ideas and models that will underpin an ecological society.

The degree to which Transition operates in parallel to, or engages with, local authorities, is a subject for debate. Camden Council’s former ‘eco-champion’ Alexis Rowell is dismissive of Bahro and Farnish’s approach of disengagement with local authorities;

“We can decentralise local government and, not quite wither it, but make it the grease that keeps things going. You can say “let’s have ‘liberated zones’ with no local government”, but you’ve got to have someone who is thinking about the area, and has a mandate to think about the area. You can certainly reinvent how we do the actual elections, but you always end up with a local government” (Rowell 2010a:pers.int).

¹⁹ Farnish blogs at www.earth-blog.bravejournal.com and is the author of *Time's Up!: An Uncivilized Solution to a Global Crisis*, Green Books, 2009.

For Seyfang (2009c:80) such a refusal to engage with mainstream political structures is ultimately self defeating. She writes “paradoxically, a key benefit of grassroots innovations, namely the ‘world within a world’, undermines diffusion. Whilst practices where ‘the rules are different’ have certain strengths, those strengths become barriers when in concerted opposition to incumbent regimes”. Although Transition initiatives build infrastructure and initiatives in parallel to local authorities, they usually do so in a spirit of collaboration where appropriate. For this, they have been criticised, by those (e.g. Chatterton & Cutler 2009) who argue that by not explicitly opposing power relations, such groups are naive and leave themselves open to being co-opted. However, many Transition groups work in a diversity of ways with their local authorities, and ‘Build a Bridge to Local Government’ is explicitly one of the 12 Steps of Transition (see Table 2.3).

3. Support Local Authorities to Deepen Democracy

A number of Transition initiatives have sought to introduce Transition thinking and new democratic practices into local government. One example is Transition Taunton Deane in Somerset. In the summer of 2009, Transition Town Taunton facilitated a whole-staff visioning exercise for Taunton Deane Borough Council, with the intention of creating a vision of a resilient future for the area. The event’s facilitators, Godfrey and Birch (2009) describe the event, which brought all 350 Council staff and 26 Council members together for 11 half-day sessions ;

“plumbers, planners, environmental health officers and car park attendants mixed with senior strategy officers, carpenters, Council Members and tree surgeons. In and of itself this was [exceptional]. On

no other occasion have the people who make up this organisation come together in this way" (ibid:1).

The vision that emerged told "a surprisingly consistent story" of a lower-energy future (ibid). Alongside the visions that emerged in the resultant report, "Towards a Resilient Taunton Deane", were practical actions for the Council to undertake. These included the need for the Council to "lead from the front", change planning legislation, encourage new businesses and help local enterprise, upgrade its transport strategy to take peak oil and climate change into consideration, raise awareness within the community, make allotments a operational priority, to help the community, promote recycling more, find a budget for more tree plantings, make a difference in-house (i.e. change its working practices) and create capacity within the organisation to make the above possible. TTT has also run workshops with SHDC using World Café see 3.4.6), introducing new forms of democratic practice into local government.

Globally, another emerging manifestation of this is Participatory Budgeting (PB). Brazil's Workers Party has pioneered the approach, which gives citizens a say in how public money is spent. Boulding and Wampler (2010:125) described PB as "a year-long decision-making process through which citizens negotiate among themselves and with government official in organised meetings over allocation of new capital investment spending on public work projects". Although PB has been shown to lead to improvements in empowerment and increased government efficiency and accountability (e.g. Barber 1984, Goldfrank 2007), only two studies have looked at how it has affected wellbeing. Boulding and Wampler (2010:133) concluded that it has led to "no significant and consequential impact on improving municipalities' overall well-being".

However, in Porto Alegre in Brazil, over 100,000 citizens have been involved, and it has led to a major decline in corruption. It is now practiced in over 300 Brazilian cities and around two dozen in the EU, with small pilots having taken place in the UK.

4. Engage with Local Government Policy-making

A number of attempts have been made to 'Transition' various local authorities. Early on in its evolution, Transition Stroud formed its Local Government group, and set about exploring how it might work with the local Council. It hosted a visit by Richard Heinberg, who gave a closed-session presentation to the Council, which was followed up by them being sent copies of the Portland Peak Oil Report. Deputy Leader Nigel Riglar of SDC invited Transition Stroud to be a part of the Local Strategic Partnership which was focusing on climate change adaptation. Transition Stroud produced the Food Strategy part of the Local Strategic Partnership process (see 5.4.3), which was accepted as evidence to the Think Tank. Although Stroud was often mentioned by interviewees in the same breath as Totnes as a town with strong green credentials, albeit one with a more enabling political climate given the strong Green Party presence in the Council, a Stroud district councillor interviewed expressed surprise at this, feeling that little of practical value has yet to happen there. "When I think of Councils leading on climate change, I think of Kirklees, who have insulated thousands of homes, not Totnes or Stroud" she said. For her, Stroud experiences similar political challenges to Totnes, in that although the town has strong Green Party political representation, within the county it is surrounded by less sympathetic fellow councillors.

Three local authorities have made moves towards explicit support for Transition, including Somerset County Council (SCC) (see Text Box 6.4.). In the time since the passing of the Somerset resolution, it has become clear however, that it was passed without many of the Councillors knowing what it implied, and the 2009 elections changed the Council from a Liberal Democrat-run authority to a Conservative one, which put the resolution in doubt (McDonald 2009). A recently published report, commissioned by SCC, reviewed existing SCC services in light of the Transition resolution alongside setting out next steps in the process (Hurring 2010). What actions emerge remain to be seen.

Leicester County Council passed a similar resolution a few months later, and in September 2009, Bath and North East Somerset Council (B&NES) also passed a motion supporting the principles and ethos of the Transition movement. None of these brought in any funding for Transition initiatives, but the B&NES resolution commits the Council to better communication and engagement with Transition initiatives. Although TTT cannot claim to have influenced the policy-making of its local government, it has sought some degree of engagement, including:

- A formal motion of support from TTC
- Two members of TTC and one of SHDC who are active in TTT
- Two 'World Cafe' events, co-hosted with Schumacher College, looking at the impacts of peak oil and climate change on housing and planning
- SHDC is partnering TTT's 'Transition Streets' programme
- The attendance of, and presentations by, key figures in both SHDC and TTC at the launch event for the Totnes EDAP project

"That this Council

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

Text Box 6.4. Somerset County Council's Resolution Supporting Transition initiatives (Source: Somerset County Council 2008:1).

Perhaps the most striking example of Transition thinking adopted by a local authority comes from Montevoglio in Italy. Montevoglio was the first Transition Town in Italy²⁰, and on 26th November 2009, the local *comune* (local authority)

²⁰ <http://montevogliotransizione.wordpress.com/>

passed a resolution (Comune di Monteveglio 2009) whose key commitments included:

- Working in strategic partnership with Transition Town Monteveglio
- Taking an optimistic approach to a low energy future based on peak oil and climate change
- Building resilience into its policies and activities
- Envisaging it as a participative process requiring the direct participation of the whole community
- Setting 350ppm as the target for CO2 reductions
- Implementing high standards of energy efficiency in buildings and encouraging renewable energy

The resolution contained two paragraphs which capture how deeply Transition thinking had become embedded within the Comune's thinking:

"Strategic partnership with the Association Monteveglio Città di Transizione [Transition Town Monteveglio] with whom this administration shares a view of the future (the depletion of energy resources and the significance of a limit to economic development), methods (bottom-up community participation), objectives (to make our community more resilient, i.e. better prepared to face a low energy future) and the optimistic approach (although the times are hard, changes to come will include great opportunities to improve the whole community's quality of life)";

... and a commitment to:

"inform the community on the limits of a concept of development based on unlimited resources, on the need to reconvert an economy based on the massive use of fossil fuels and other non-renewable resources and on the benefits of a more frugal and sustainable lifestyle".

Bristol City Council's Peak Oil Resolution, and their Peak Oil Report (see 6.3.2.) are also an excellent example of this, although focused on a settlement far greater in size.

6.3.4. What Might Transition Local Government Look Like?

"The emphasis is not on creating an ideal utopian 'romantic' model of society and then working for society to meet that standard, but on articulating 'open', continuous, 'reflexive' processes which bring together a broadly representative group of people to explore and discuss ways of changing their society". (DuPuis & Goodman 2005:361)

One of the key observations from 6.3.2. is that many local authorities, SHDC included, are doing some elements of what a Transition response would require, but none have taken the holistic approach explored in this thesis. Seyfang and Smith (2007:597) argued that:

"even radical green niches can eventually exert influence upon the mainstream, though not in forms anticipated by original niche idealists. *Elements* of niche practice that can be adapted and accommodated easily within the market are appropriated when the regime feels pressure for sustainable reforms. In this way, grassroots initiatives remain sources of learning, even if it is only the more appropriable, marketable lessons that spread".

Given that the Transition model promotes a more systematic change than just the adoption of a few easily adopted aspects of its work, this leads to the question of what local government would look like if reoriented to enable relocalisation and Transition, founding its activities and policy-making on responding to peak oil and climate change, and on rebuilding resilience? Davidson (2010:unpaginated) highlighted what he sees as the priorities that

emerge when peak oil and climate change are overlapped as drivers for local governance.

He argued in Figure 6.1. that the role of governance is to plan for a lower energy future, to power down (i.e. conserve energy on a massive scale) and power up (i.e. put in place the new, more localised energy infrastructure that would be needed to meet this reduced demand).

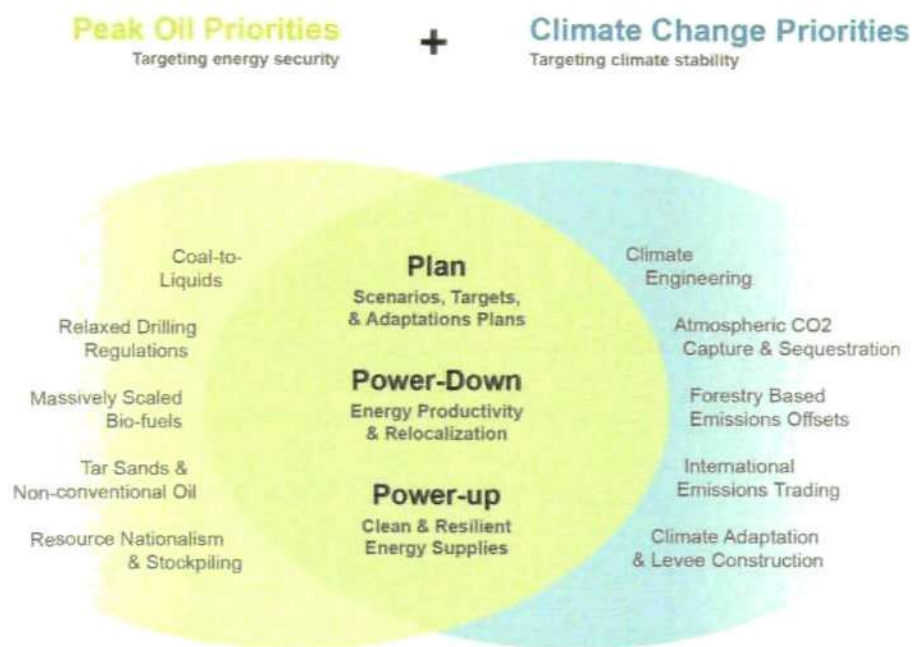


Figure 6.1. The overlaying of peak oil and climate change (Source: Davidson 2010)

To return the focus of this thesis to the case study of Totnes, and to how insights from the preceding sections could inform the political processes of the area, it is clear that firstly, it will need to function within existing governance structures. While some may seek the return of the Borough structure of local government (see below), this is unlikely. However, for Hines (2000a), active democracy is vital to successful reflexive localism. "A diverse local economy",

he wrote, "is the possible route for such an 'active democracy' (Hines 2000a:119). Hines's view is that the rebuilding of local production and manufacturing will most likely lead to more people actively participating in the local economy, and that in turn needs to be accompanied by "wider political and democratic control and accountability at the local level" (ibid). A tentative evaluation of Totnes might argue that as a community with a higher than average percentage of 'post materialists' (see 7.4.3.) and an unusually diverse local economy (at least in terms of retail), the level of community engagement in community consultation processes as evidenced in the response to the Totnes DPD (see 6.2.3.) supports Hines' thesis.

Table 6.3 gathers together thoughts from people involved with Transition initiatives as to what Transition local government would look like in practice. Another aspect that will affect the degree to which TTT is able to influence local government, according to Seyfang and Smith (2007) is the degree to which it is able to interface with the mainstream. They argued that many social change movements' self-identification as 'other' or 'alternative' works to actively make outreach and diffusion difficult. They cited the literature on niches, which contends that for such ideas to influence the mainstream, what is required is "a degree of congruence with regime" (ibid:597). For Soussan (2004), fundamental to participatory approaches such as Transition is the belief that community-led development will be more able to meet the specific needs of those communities.

"...in its governance processes it would highlight and facilitate engagement with community and offer best practice in access to council information". *Chris Harries, Waterworks Valley, Tasmania, Australia*

"There would be a set of top level objectives for the council with specific measures attached, relating to the carbon footprint for the city, food self sufficiency, local energy production, jobs for a low fossil fuel future, low carbon transport." *Angela Raffle, Sustainable Redland and Transition Bristol*

"A Transition Council would be participatory. The radical transition expected requires mass participation in decision making at all levels. Think of it as the end of representative democracy, elites and experts. *Bob Thorp, Transition Keighley*

"A Transition council would work together with local Transition group. They would understand our passion and need for community building. They would not be separate and apart. They would understand that we are in the community together." *Pupak Haghghi-Brinch, Transition Forest Row*

"A Transition Council would be open to community led ventures and self-organising projects. The council would not employ its 'own' staff to run projects but use its funding to devolve delivery." *Linda Screen, Transition Town Dorchester, Dorset*

"Ideally a Transition Council would facilitate rather than lead." *Sophie Galleymore-Bird, Transition Rame, Cornwall*

"A Transition Council would value contributions and initiatives from all its staff right across the board on sustainability matters. It would be open to partnership working with the community, rather than having a them-and-us mentality". *Chrissie Godfrey, Transition Town Taunton, Somerset*

"A Transition Council would bring local strategic partners together to lead by example on tackling climate change and peak oil through visible manifestations such as solar thermal panels on public buildings, green roofs, green vehicle fleets, community gardens of council lawns, interactive sustainable schools that act as educational tools ..." *Denny Gray, Transition Town Wandsworth and Wandsworth Environment Forum*

"Somehow the political fixation on local economic development and short-term job creation needs to be channeled in the Transition direction because they current paradigm is dominated by Tesco-thinking and retail-led regeneration." *Sean Furey, Protect Kent (supporting environment groups around Kent & Medway)*

Table 6.3. Responses to the question "what would a Transition Council look like?" (Source: Rowell 2010b, forthcoming).

He went on to add that inherent within this concept, is the unstated assumption that "successful action can be achieved on a large scale, typically at national level, by cumulative action in hundreds and thousands of local communities, achieving results impossible with a top-down approach" (ibid 2004:87). Were Transition to become a truly global phenomenon, it would inevitably start to impact on global decision making, but one of the key challenges facing the movement is that of scaling up. As Soussan continues, (2004:88), the challenge for initiatives such as Transition is "how to replicate effective but restricted local efforts to create change at a scale which impacts upon poverty and resource degradation at the national or regional level".

This researcher's experience, as someone embedded within TTT, is that it is publicly perceived as a relatively mainstream organisation, and it is little associated with the 'alternative' identity which Seyfang and Smith warn of. For Rowell (2010a: pers.int) a local authority best positioned to be proactive about Transition would do three key things:

1. It would be prepared rather than reactive, and would look realistically at what is coming in the near future in terms of energy shocks, climate impacts and so on. "After all", he adds, "Councils have a moral duty to look forward and see what's coming" (ibid)
2. It would embrace new decision-making approaches, using participative tools such as Open Space and World Cafe, which would ensure that "Councils don't feel like some remote thing a long way away imposing stuff but is close and listening and enabling their ideas" (ibid)
3. Involve a new generation of Councillors, who are conversant with Transition.

Spratt et al. (2009) identified several other more specific proposals. Firstly local authorities would be empowered by national government to borrow money by issuing local or municipal bonds. Secondly, there would be more democratic engagement in spending decisions (such as Participatory Budgeting), which, it argued, would also lead to a greater degree of volunteering. It also called for reduced taxation on sustainable local production, and a greater participation of the local population in priority setting. Adger (2010:pers.int.) draws these together, "without wishing to sound too motherhood-and-apple-pie about it, it's about democratic structures, and also the synergistic relationship between civil society and government at all levels that actually promotes social capital and promotes learning between civil society and government".

For Totnes, in practical terms, interviewee SG1 argues that making local government more able to facilitate localisation means turning the three-tier system into a 2 tier one, cutting out SHDC, a proposal that was briefly under consideration by the Boundary Commission. She looks to the borough model that was replaced in 1974: "The borough model would be closer to it. If you had boroughs, but held effective local autonomy and responsibility, working with a County or even a higher level model, which did some of the big stuff and then which devolved its services in proper partnership with the boroughs, then I think that would be more effective than what we've currently got". DC3 also looked back to the borough system: "We were a borough. We had full control over all our resources, and taxation. It was a self-contained borough, and then it went belly-up when they created the District Council. The borough was Totnes and its 15 parishes (the MCT1 area covered in the TTT EDAP). (Historically) it was a town who was the first to have its own electricity and water works, looking at

its own resources, probably more self sufficient. A very good model for living within its carrying capacity". Saunders (2000:75) quotes Bill Bennett as arguing that the loss of Borough status left Totnes "with the trappings of power but greatly diminished responsibility".

TC2 argued "it could come back, that I think would actually be much better than what's happening at the moment. For DC1, the refocusing of political power on its original market town catchment area is eminently sensible. "The natural organic economy in rural areas is based upon market towns and their surrounding villages. It's a trade relationship and the food is grown in a borough, goes to its market town and then the people from that borough go in and buy it from the market town. So that's the organic level of organisation of the economy, and that should be the organisational level in which key decision-making is made". When asked if he detected any political support for such a model, he reflected "a lot of District and Town Councillors would sympathise with that. I think the higher you go, the less support for it there'd be".

Another obstacle to the implementation of such an approach as a fundamental re-alignment of approach for local government is, argued Seyfang and Smith (2009:597), "policy makers' risk aversion. Innovation is an experimental process, and an important aspect of this is openness to learning from failure. The policy culture is insufficiently mature to identify this as a positive process". The question that emerges from this is whether in the current climate, where local authorities are driven by central government targets, any local council feels sufficiently able to risk failure in order to further innovation? While some examples have been listed earlier, such as Kirklees Council, of local authorities

taking leadership on climate change, perhaps one of the roles of Transition initiatives is to try to create a culture, through example, of risk-taking.

6.4. Which stakeholders need to be involved?

6.4.1. The Challenges of Inclusion

Is it possible to get a sense of how inclusive TTT has been so far? What, for example, is the age profile of those who have got involved? Data from the surveys were analysed to see if it revealed anything about this question. The question 'have you heard of TTT?' (q31) was correlated against the age of respondents (q35). Overall, 75% of respondents had heard of TTT, with the proportion varying between 57% and 89% in the different age groups. A Mann-Whitney U test was used to assess whether there is evidence of a systematic difference with older people being either more or less likely to have heard of TTT. This gave: $U = 3914.5$, $z = -0.7$ and p (two-sided) = 0.5 i.e. not statistically significant, i.e. no evidence that older people are either more or less likely to have heard of TTT than younger people.

The same process was repeated for the question "Do you ever participate in any of its events/projects?" (q32). The analysis was restricted to those 158 people who responded 'Yes' to q31 (the others had been asked to skip this question) (see Table 2.4.). The question tackled is whether there is a tendency for older people to participate to a greater or lesser extent than younger people.

Overall, 41% of respondents had participated in TTT events/projects, with the proportion varying between 25% and 54% in the different age groups. A Spearman correlation coefficient was used to assess whether there is evidence

of a systematic difference with older people participating either to a greater or lesser extent than younger people. This gave a Spearman correlation coefficient = -0.20 and p (two-sided) = 0.01 i.e. there is a statistically significant correlation, albeit a very weak one. A table of q32 against q35 is:

Age	Participation in TTT events/projects				
	Never (%)	Occasionally (%)	Regularly (%)	Often (%)	Total
Under 18	3 (75)	1 (25)			4
18-30	6 (46)	5 (38)	1 (8)	1 (8)	13
31-45	18 (46)	19 (49)	1 (3)	1 (3)	39
46-60	30 (56)	21 (39)	3 (6)		54
Over 61	35 (75)	10 (21)	1 (2)	1 (2)	47
All ages	92 (59)	56 (36)	6 (4)	3 (2)	157
No answer given: 1					

Table 6.4. Results of correlation of respondents ages and those who answered that they had had some engagement with TTT (Source: author's questionnaire 2009).

The negative (but weak) sign of the correlation coefficient indicates a tendency for older people to be participating to a lesser extent than younger people (i.e. for younger people to be participating more). It is necessary to note that the age distribution of responders is not even, and there were relatively few respondents under 31 years, and so the conclusions only apply to those aged over 30. As an indication of the trend, 52% of those up to age 45 had participated in events/projects compared to only 36% of those aged over 45.

In an interview, the representative of Totnes Chamber of Commerce noted that in the TTT events he had attended, there was "a great cross-section" of people.

DC3 was more cautious. "It gets to the people who are in Transition already. They're ready for the message, but there's a whole strata of society that's not". SG1 was outspoken about who she sees as currently engaging with TTT and who not. "I think TTT is particularly appealing to people with high intellect, who are capable of strategic thinking, for whom a long term vision and the impact of peak oil is something they can get their brains around as a concept. I think that TTT could and should have put more energy earlier into reaching out to the community in ways that engage people now. There have been some good moves to do that, but I don't think it has managed to orchestrate it enough to make it more than the sum of its parts ... somehow it's got to get down to the streets ... I also think that every other single community organisation around the world must struggle with these issues ... it's bloody easy to say and bloody hard to do".

6.4.2. Other Stakeholders

A question to consider at this point is which stakeholders might benefit from the shift to a more localised economy, and which would be at a disadvantage. Clearly the shift to a more localised economy would present significant challenges for the business community. For the chair of Totnes Chamber of Commerce, local, independent traders are inherently more economically resilient than chain stores:

"I've always kept on my toes and as an independent I can make an assessment of what's going on and change things. That's what independents can do. Multiples can't. It all comes from head office. Independents can send their wife out to work. Independents can work at midnight for no pay. Independents can do all those things. Keep on their toes and keep the place going and they do. That's partly why I fight for independents above anybody else because I know they do this stuff and

I know they get ill from doing it, and they run up debts. But they keep going and they keep people coming into Totnes, and they keep the employment going and they maintain the fabric of the town because they pump millions into what the town looks like. Not a penny of investment from the Council".

Ken Gill, who used to run one of the town's urban market gardens, reflected, during an oral history interview on the move away from the more localised economy founded on locally owned small shops:

"It has been progress of a sort, or has it? I'm not sure. We lost something we will never be able to regain. The loss of a lot of small shops has been hard, although we have replaced them with what we might call "slightly unusual shops", you've lost the dairies, the independent grocers, the only thing we have retained is a good selection of butchers, the Ticklemore Cheese and fish shops... When we consider what we used to have".

One might speculate that the move away from the localised High Street observed in the town over the last 50 years could inevitably be reversed in a context of volatile oil prices and interruptions to supply, a process that would favour the small, independent traders the Chamber of Commerce representative refers to. A request to interview the manager of the local Morrisons supermarket was declined, so an exploration of their perspective on the economic resilience of their business model and their place in the local economy was not possible.

So which Totnes stakeholders might benefit from a relocalisation scenario, and which could find themselves disadvantaged by it? In terms of those who would benefit, firstly there are the town's schools. All of the schools in the town are

embracing 'green' practices, Dartington Primary School having recently been rebuilt as an award-winning and pioneering 'eco-school'. King Edward VI Community College is installing a number of renewable energy technologies and has started a school garden. An increase in the profile of localisation would benefit these aspects of their work. The increasing cost of liquid fuels, which would make it harder for families to afford to run a car, might work in the favour of local taxi companies, at the point when it becomes cheaper to use taxis than to own a car. Local renewable energy companies would, and already are, benefitting from the move to a more low carbon economy. Localisation would also benefit local shops, especially those that had minimised their vulnerability through having established local supply chains. Being on a major train line, tourism may prove to be less affected by volatile oil prices than other, more remote places, and there is considerable anecdotal evidence that TTT is already a significant generator of visitors to the town.

In terms of those who could be disadvantaged, firstly it could include those local businesses which are very dependent on car use, such as the Dartington and Sharpham Estates. Dartington, in particular, runs many large events throughout the year, the large majority of visitors arriving by car. Totnes doesn't have any significant road haulage businesses, but any such transportation businesses would struggle. SHDC could also find that some of their key income streams, especially those that arise from private car use, i.e. car park income and parking tickets, would dwindle, and need to be made up from elsewhere. Relocalisation based on a more community-led and community-owned model would also disadvantage the current development model which favours large developers. Similarly, a move towards the use of local building materials could also

disadvantage any local builders merchants who didn't adapt their supply chain fast enough. As in any process of change, there would be winners and losers in such a transition, yet some of these trends can already be observed, such as the 'greening' of local schools and the increase in 'Transition tourism' to the area.

6.4.3. Why Visions Matter?

In considering why SHDC would appear to be taking a reactive stance on climate change policy rather than a proactive one, frustration about which emerged in many of the interviews above, it might be useful to reflect on the question of the need for visions. It is clear that the inability of those charged with making decisions about the future of the area to imagine a low carbon, relocalised future is a key obstacle. One aspect often emphasised in Transition is the importance of visioning, of being able to imagine what such a future might be like (Hopkins 2008). In 'The Transition Handbook' I wrote "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" (ibid:94). This concept of visioning will be returned to in the following chapter, but in this light, SP1 was asked "what do you imagine living in a low carbon community would be like? If you woke up in 2030 and Totnes had become a low carbon economy, we'd achieved it, what do you think it would smell like and feel like? Could you describe it?" His answer was illuminating:

"I suppose it would probably feel like going back to the way it was. Like where you'd have open villages like in London. There were quite distinct local areas. I suppose Totnes would be your centre because you wouldn't be looking to travel regularly. You would be looking to live and work in the local area and it would go back to that more traditional true

settlement rather than the rather dispersed settlement. We have places we work, live, socialise, where our families live... and they're all miles away and our lives have become very fragmented joined by a bright metal box with four wheels. I assume it would pull it all back to a much tighter area".

He was then asked whether what he had described was something that had appeal, or whether it felt like a last option:

"I think, as I get older that quiet neighbourhood life becomes more attractive. If you asked me as a younger person I wouldn't have liked it so much. I suppose it feels slower and calmer but people actually band together and live together and are supporting each other rather than the very insular lives that we live at the moment. But there is a risk that it ends up a bit like the Hovis advert thinking that everything was better in the old days!"

Being able to envisage future scenarios is, in an emerging body of literature, seen as a key aspect of being able to manifest a more sustainable world. As Hicks and Holden (1995:24) observed, "the images we hold of the future motivate and influence what we choose to do in the present". The kinds of future scenarios explored in 3.5. are also very useful in this futures work, enabling a more intimate exploration of future scenarios. What was fascinating about the above discussion was how a lower carbon, more localised world was seen as something we 'go back' to, rather than the next evolutionary step forward outlined elsewhere in this thesis. Phrases like "*going back to the way it was*" and "*go back to that more traditional true settlement*", and his vision of such a future having no appeal to younger people, speaks of a vision that holds little appeal. I would argue that the lack of a clear vision, something the Totnes EDAP seeks to address, as did the recent work of Transition Taunton Deane

described above, is one of the key reasons why these are still such alien ideas at a Council level, and this lack of vision is one of the key obstacles to relocalisation.

For Orr (2009), a vision of a more resilient world is not an abstract concept, nor is it a retreat into the past, rather he sets out his "Vision of Governance for Resilience", describing it thus:

"In the Long Emergency, governments at all levels will have to be smarter, more farsighted, more agile, and more strategic. That does not necessarily mean a larger and more intrusive role, but rather one that steers more effectively by incremental adjustments and not by revolution. We will need to build new alliances between public, non-governmental organisations, local and state governments, and business. Above all, government must enable creative leadership at all levels of society, and it must lead first by example, not simply by fiat. It must help catalyse the redesign of infrastructure, food systems, communities, transportation, and energy systems that are resilient and secure by design. Every increase in local capacity to grow food, generate energy, repair, build and finance will strengthen the capacity to withstand disturbances of all kinds. Distributed energy in the form of widely dispersed solar and wind technology, for example, buffers communities from supply interruptions, failure of the electrical grid, and price shocks. Similarly, a regionally based, solar-powered food system would restore small farms, preserve soil, create local employment, rebuilt stable economies, and provide better food while reducing carbon emissions and dependence on long-distance transport from distant suppliers. The primary goal in rethinking development and economic growth is to create resilience – capacity to withstand the disturbances that will become more frequent and severe in the decades ahead" (Orr 2009:42).

6.5. Conclusions

"If you want to catch a glimpse of the kinds of places outside the political mainstream where the new politics might be incubated, take a look at the Transition movement ... it isn't so hard to see why politicians are so interested. The Transition movement is engaging people in a way that conventional politics is failing to do. It generates emotions that have not been seen in political life for a long time: enthusiasm, idealism and passionate commitment".

(Bunting 2009:unpaginated)

This chapter set out to explore obstacles to the relocalisation of Totnes and district, with particular focus on governance and political structures. It explored the concepts of subsidiarity and governance, and looked at how these issues have been explored in terms of peak oil, climate change and resilience. It looked at this in the context of national government, as well as what a 'Transition local authority' might look like. It was noted that some councils such as Kirklees have taken determined steps to embed carbon reduction in all their activities, showing the scale of response possible when the political will exists to act. It is clear that Senge's (2008:356) suggestions for businesses apply equally well to local government, the need for "a more robust organisational ecology ... that is in tune with the larger living world and more capable of confronting the host of Industrial Age imbalances threatening our biosphere and our societies". Whether exploring responses to peak oil, climate change or resilience, the same concepts and words have come through repeatedly in this chapter, "engagement", "participation", "sense of ownership", "decentralisation". Dryzek et al. (2003), argued for a shift of focus away from concern about models of democracy to a focus on processes of democratisation. Creating the 'ideal democracy' they argued is impossible, although "we can recognise

democratic advances and retreats" (ibid:104). They argued that increased democracy depends on advances in any of the following three dimensions:

1. Franchise: the number of people effectively participating in collective decision making. Franchise here is not simply minimal citizenship rights, such as the right to vote, rather the *effective* participation of categories of people, whose continued exclusion formal citizen rights can mask.
2. Scope: the areas of social, economic and political life brought under conscious collective control.
3. Authenticity: the degree to which participation in collective control is effective rather than symbolic, and engaged by competent actors (ibid).

In the light of what has been explored in this chapter, we might add two more dimensions to those of Dryzek et al:

4. Realistic Planning: a sober assessment of future trends and scenarios (peak oil, climate change, economics etc), leading to a proactive strategy.
5. Articulating a Vision: able to describe a positive vision of a lower energy future, focusing on opportunities and possibilities, and placing carbon reduction and resilience-building at the heart of policy making.

Orr (2009:40) summarises this approach thus;

"we need a substantive rethinking and reordering of systems of governance that increase public engagement and create the capacities for foresight to avoid future crises and rapid response to deal with those that are unavoidable. In the duress ahead, accountability, co-ordination, fairness and transparency will be more important than ever".

This chapter has looked at resilience from the perspective of governance, but this raises the question as to how effective governance can be without an understanding of resilience at a personal level. How can governance approaches be effective without looking ensuring that the community itself feels adaptable and equipped for challenging times?

Chapter 7. Resilience: a Gentle Descent or Emergency Preparedness? Finding the most practical direction for a community's efforts.

7.1. Introduction

Chapter 7 shifts focus to the second and third objectives of this thesis, to “assess the suitability of Heinberg's (2004) framework – in particular exploring the conceptual space between his ‘powerdown’ and ‘building lifeboats’ approaches – as a tool for facilitating a response to the challenge presented by peak oil in Totnes”, and to speculate as to whether a behaviour change model can be drawn together from the discussions. It also moves on to look at Kasser's final two needs, competence, efficacy and self-esteem, and confidence. The first set of needs, Kasser writes (2002:24);

“involves a feeling that we are capable of doing what we set out to do and of obtaining the things we value. Competence and esteem needs also entail a desire to have a more positive than negative view of ourselves and to like ourselves. In essence, to fulfil these needs each of us must feel like a competent and worthy person”.

Confidence is described as the need for;

“being connected and related to other people. Humans strongly desire intimacy and closeness with others, going to great lengths to seek out and secure such relationships. These needs lead us to belong to larger groups, such as churches, neighbourhood organisations, and teams. We need to feel that we belong and are connected with others' lives, be it as parents, friends, neighbours or co-workers”.

The previous two chapters looked at the subject of resilience in relation to meeting core needs for safety, security and sustenance, focusing on meeting 4 key needs of Totnes and district, and also meeting the need for autonomy and

authenticity in the context of how local governance might best serve the processes of relocalisation and resilience-building. This section shifts the focus on resilience to the area of inner resilience, or what is referred to as ego-resilience or psychological resilience. It starts with exploring debates within the peak oil literature about what the impacts of peak oil might mean in terms of future scenarios, so as to clarify which future scenarios the Transition process ought to be building resilience to, whether North's 'enforced' or 'intentional' localisation. It then looks back, through oral history interviews, to explore, as Brown (2009) has attempted for 18th century Japan, the extent to which Totnes in the 1950s might be said to have been more, or less, resilient than the present. This way of analysing the past is a significant gap in the literature. The focus then moves to the question of personal resilience, and what factors can be said to contribute to individuals being more resilient. This includes a discussion of happiness, and how it can be measured, an emerging area of interest to both academics and policy makers (e.g. Abdallah et al. 2009). The question of what personal resilience means in relation to Totnes and the work of TTT is then explored, in the context of personal resilience.

7.2. Heinberg's 'Powerdown/Building Lifeboats' debate

Section 2.4.3 explored the concept of 'energy descent', identifying the 'slice' of the spectrum of scenarios this thesis would focus on (Figure 2.3), ranging from Heinberg's 'Powerdown' to his 'Building Lifeboats' scenarios. While there is a far wider spectrum of future scenarios in existence, from the apocalyptic to 'sustainable' low carbon economic growth, this section explores a certain set of possibilities, narrowing the focus to those within Johnston's 'Evolutionary' section of Figure 2.2. Narrowing the focus raises important questions which will

underpin the nature of approaches to resilience building. Is this energy descent assumed to be fast and potentially catastrophic, slow and gradual, or stepped? This discussion is vital to the following sections which will explore practical resilience building/localization activities in Totnes.

Orlov (2008:unpaginated), frustrated at "a continuum of subjective judgements" relating to what "the inevitability of a discontinuous future might actually look like" (ibid), proposed a taxonomy of what 'The Five Stages of Collapse' might look like. He defined them as;

Stage 1: Financial collapse. Faith in "business as usual" is lost. The future is no longer assumed resemble the past in any way that allows risk to be assessed and financial assets to be guaranteed. Financial institutions become insolvent; savings are wiped out, and access to capital is lost.

Stage 2: Commercial collapse. Faith that "the market shall provide" is lost. Money is devalued and/or becomes scarce, commodities are hoarded, import and retail chains break down, and widespread shortages of survival necessities become the norm.

Stage 3: Political collapse. Faith that "the government will take care of you" is lost. As official attempts to mitigate widespread loss of access to commercial sources of survival necessities fail to make a difference, the political establishment loses legitimacy and relevance.

Stage 4: Social collapse. Faith that "your people will take care of you" is lost, as local social institutions, be they charities or other groups that rush in to fill the power vacuum run out of resources or fail through internal conflict.

Stage 5: Cultural collapse. Faith in the goodness of humanity is lost. People lose their capacity for "kindness, generosity, consideration, affection, honesty, hospitality, compassion, charity" (Turnbull 1987:31),

The Mountain People). Families disband and compete as individuals for scarce resources.

He wrote, "while attempting to arrest collapse at Stage 1 and Stage 2 would probably be a dangerous waste of energy, it is probably worth everyone's while to dig their heels in at Stage 3, definitely at Stage 4, and it is quite simply a matter of physical survival to avoid Stage 5" (Orlov 2008:unpaginated).

Greer (2008), drawing on Tainter's (1988) exploration of the collapse of complex societies, argued that peak oil will lead to what he termed 'catabolic collapse', that is, not be a rapid collapse, rather a stepped process of decline over a long period of time until human population and consumption patterns come into balance with the available resource base. This concept is based on an analysis of historic collapses, Greer arguing that even the Maya, often cited as a classic societal collapse (Diamond 2005) took 200 years to decline (North 2010a). For Greer, it is a society comprising decentralized, localized, more resilient communities that will be in a stronger and more appropriate condition to rapidly adapt to this contracting context.

For Korowicz (2010:4) such an assertion needs to be examined in more detail. He argued that peak oil will inevitably lead to the collapse of debt-based economics, stating;

"the challenge is not about how we introduce energy infrastructure to maintain the viability of the systems we depend on, rather it is how we deal with the consequences of not having the energy and other resources to maintain those same systems. Appeals towards localism, Transition initiatives, organic food and renewable energy production, however laudable and necessary, are totally out of scale to what is approaching".

Rather than the concept of 'catabolic collapse', Korowicz (2010:28) drew from observations of 'tipping points' in a range of systems, focusing on "the class of transitions called catastrophic bifurcations where once the tipping point has been passed, a series of positive feedbacks drive the system to a contrasting state". He suggests three 'peak energy-economy models'. The first 'Linear Decline', assumes an ongoing 2 – 3% annual decline in oil production, accompanied by an approximately linear relationship between oil production decline and economic decline. This scenario, he argued, assumes that this gradual contraction would stimulate a major programme of renewable energy installation, an assumption he challenges, arguing that the ability to finance such a programme would be vastly curtailed by the other either/or choices that would inevitably arise in a contracting economy.

With the second, 'Oscillating Decline', the direct link between economic growth and cheap fossil fuels in a time of volatile oil prices leads to a spike/trough profile, which Korowicz (2010:32) described as having the following pattern, "economic activity increases → energy prices rise → a recession occurs → energy prices fall → economic activity picks up again but to a low bound set by declining oil production. In this model the economy oscillates to a lower and lower level of activity". One could interpret the July 2008 oil price spike and subsequent economic crisis as the first manifestation of this (Heinberg 2010).

The last, 'Systemic Collapse', challenged Greer's catabolic collapse model, seeing civilization as a single complex adaptive system incapable of functioning in a world of economic and energetic contraction. He argued that there are tipping points which "once passed, drive the system rapidly towards another contrasting state through a process of positive feedback; that may in turn drive

other feedback processes" (ibid:32). Although many previous collapses, as Greer observed, have taken place over longer timeframes, Korowicz (ibid:33) argues that in the case of this scenario, "the speed of collapse is a function of the level of integration, coupling, and the key operational speeds of the systems that support the stability of the pre-collapse state". Systemic Collapse, Korowicz argued, can either occur spontaneously, or as an unpredictable stage in the Oscillating Decline model. It would lead to the kind of 'enforced', rather than 'intentional' localization, to use North's (2010a) classification.

In late 2009, this researcher engaged in a written debate with Richard Heinberg (Hopkins & Heinberg 2009) about whether Transition initiatives were sufficiently preparing for more accelerated collapse scenarios. "The reason we all see it as necessary to Transition away from fossil fuels", Heinberg opened, "is that if we don't, dire things will happen. But what if it's actually too late to prevent some of those dire things from happening, and they occur during our Transition period and process?" (ibid:unpaginated). Citing the economic meltdown which began in 2008, linked partly, he argued, to the record oil price of July 2008, he suggested that for Transition to be based on the concept of a gradual 'energy descent' could leave it irrelevant in the context of fast-moving events.

He continued:

"Obviously this is not an academic question. We are seeing a truly frightening financial collapse—partly resulting from this year's high oil prices—unfolding before us. The world has changed very significantly in the past few months, so much so that the shift is difficult to overstate, even though its direction and implications are still revealing themselves. My question is: should the Transition movement ignore this new fact-on-the-ground, address it as just a bump or pothole along the way, or take it

very seriously as (1) a potential challenge to the Transition program if people feel that their optimistic efforts are being overwhelmed by catastrophic economic conditions including closure of local businesses and loss of jobs and funding by key organizers; (2) a potential opportunity both to grow the movement and to offer tangible help to people in genuine need; or (3) both of the latter?" (ibid).

My response was that the kind of emergency planning he was referring to is more likely to be undertaken by government agencies, and that the building of resilience, and short-term emergency responses, are quite different things (a debate already explored in 6.3.2.):

"Does Emergency Planning lead to increased resilience? Maybe yes, but maybe not. Resilience tends to be people's last consideration in times of panic. The priority turns to short term survival ... short term emergencies tend to move people away from resilience, something that, it seems to me, can only really be created in a longer term, intentionally designed way. On the other hand, does that mean that principles of resilience should be put to one side in an emergency?" (ibid).

I added that:

"I find it hard to see how the things that would actually lead to increased resilience could be done any faster, short of actually being in that emergency scenario, by which time, in some ways, it is too late to do that effectively" (ibid).

Heinberg responded that the need for bottom-up emergency responses is vital because "if not, then I think that we (that is, those of us who desire to see an orderly, decentralized transition process) may be in danger of being written off as irrelevant at some point—perhaps in just a few months' time" (ibid). He added "as you say, emergency planning doesn't necessarily lead to greater

resilience, but on the other hand I don't see how a society can be resilient without it, especially when there are so many crises looming" (ibid).

This discussion leads to a wider conversation as to the nature of the Transition movement's understanding of resilience in practice. For Haxeltine & Seyfang (2009), making the focus of resilience building the need to be resilient to peak oil and climate change, through a process of intentional localization could, ultimately, be self-defeating. They argue that:

"resilience theory highlights the fact that building resilience to a specified disturbance (such as peak oil) does not necessarily provide the same resilience to all possible disturbances ... some properties of a transitioning community, such as strong community networks and diverse skill sets, may help provide resilience to most disturbances, while other properties may be very specific to one disturbance. If one were to take the position that the greatest shocks in the coming years may, in the end, not be the ones we expected, then successfully building a specific resilience to an expected threat may not provide resilience against realized disturbances. So what may be required is to build resilience to specific threats in a way that also builds system properties that help in coping with diverse possible threats, implying, for example, a need for a capacity to innovate" (Haxeltine & Seyfang 2009:15).

From the perspective of the Transition movement, there is a clearly stated belief that Transition is one of many responses that will be necessary, not a 'silver bullet' cure-all. Transition cannot achieve local and national-scale resilience alone, nor does it claim to be able to. The Transition Handbook argued that "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 (Hopkins 2008:76). The 'hierarchy of responses' set out in Figure 7.1 below puts Transition in its context.

International
Strong international climate change protocols, Contraction and Convergence, a moratorium on biodiesel production, Oil Depletion Protocol, rethinking economic growth, biodiversity protection
National
Strong climate change legislation, Tradeable Energy Quotas, a National Food Security Strategy, Devolution of Powers to Local Communities
Local
Transition Initiatives, Energy Descent Plans, Climate Friendly Communities, Community Supported Agriculture, Land Trusts, Credit Unions, Locally Owned Energy Supply Companies (ESCOs), localism

Table 7.1. The hierarchy of responses to peak oil and climate change (Source: Hopkins 2008:77)

This tension between local solutions and national/international ones is echoed by Keil (1994:290), who argued that:

“activating the 'local' is now considered a necessary, though not sufficient, condition by environmental policy-makers. It is necessary because strategies to solve environmental problems, in order to be successful, need to be broken down to the experiential base of the local . . . The local, however, is also not a sufficient condition for environmental policy-makers because environmental action can by no means be just local, it needs to be supplemented by regional initiatives . . . and . . . to be synchronised with global and transnational activities of environmental advocacy and policy making”.

What does the peak oil research literature indicate as to which might be the most likely of Korowicz's scenarios? Sorrell et al. (2009:164) in a review of over 500 published papers on peak oil, argue that the outcome will likely be closer to Korowicz's 'Oscillating Decline' than 'Systemic Collapse', stating that “the complex interactions between supply and demand turn a sharp peak into a 'bumpy plateau'. In the context of Korowicz's models, Transition could therefore be said to explicitly design for 'Linear Decline' seeing that as the model most

likely to engage and enthuse people, and to use that, through the Energy Descent Action Planning process, to build the infrastructure that will make the community in question either more resilient to the more likely 'Oscillating Decline' model, or at least potentially so. At the same time, it strives always to keep one eye on 'Systemic Collapse' as a possibility, and incorporating a strand of focusing on emergency planning and feeding into government-led emergency planning responses. But what might an 'Oscillating Decline' look like in practice? Section 7.3 goes on to look at whether any useful lessons about resilience and adaptation to less energy availability can be learnt from recent history.

7.3. What Levels of Resilience Were There Historically in Totnes?

Before looking specifically at Totnes, it may be useful to explore whether any lessons be learnt from the UK's most recent national 'Powerdown', World War Two, with its push for national food self reliance, domestic food production and the rationing of energy? While there are many differences from the energy descent scenarios discussed in 2.4.4, there are also relevant similarities, which may shed some light on this thesis's first objective, exploring obstacles and objectives to relocalisation. As Simms (2005:156) observed, "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", he continued, "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?"

Despite popular images of wartime austerity, Simms (2005:157) noted that "the pall of austerity that held wartime and post-war Britain is not as miserably straightforward as it can at times be seen". In April 1936, an Act of Parliament set up two committees, one commissioned to design and prepare a scheme of food rationing, the other to propose the commodities to be given priority in a food storing programme (Wilt 2001). 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, Wilt (2001) argued, 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 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 (Gardiner 2005).

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 (Gardiner 2005). Food imports to the UK halved between 1939 and 1944 (ibid). Local authorities set up horticultural committees to advise people on growing food, complemented by a programme of promoting virtues of thrift and economy, as well as teaching practical skills. In 1942 Bristol, for example, had 150,000 allotments, and over half the nation's manual workers had an allotment or garden, producing around 10% of the nation's food (ibid).

One of the successes of rationing was that it rebalanced dietary inequalities. 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 (Simms 2005). Infant mortality rates also fell, and arguably the UK's general state of health was never better. Petrol rationing, introduced in 1939, restricted car use to 1,800 miles per year for non-essential users, and 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 (ibid), although, of course, the car was much less of a fact of daily life then than it is today.

Much can be learnt from the experience of World War Two regarding how Governments prepare for such a transition. The Government was able, between 1936 when the Food (Defence Plans) Department was set up and 1939, to co-ordinate a response which was able (just) to support the nation (Hammond 1954). The most important lesson from the War years, according to Simms, is that "when Governments really want to, they can do almost anything, including good things" (Simms 2005:156).

Peak oil and climate change have yet to engender in the population or within Government a sense of urgency anywhere near that of Nazi invasion. However, as Hirsch et al. (2005) stated, by the time a Government considers it politically expedient to promote the concept of a contracting economy, it is almost certainly too late. In terms of the model in Figure 2.2, the response in World War Two was arguably closest to Heinberg's 'Powerdown', although the

Government's emphasis on local²¹ action and reskilling places it further round towards FEASTA's Fair Shares.

In the 1950s, Totnes, like the rest of the country, was in the early stages of moving from an economy where the bulk of employment related to harnessing energy, either in the form of food or fossil fuels, to the employment world of today. The 1911 Census of England and Wales showed that the three largest occupational groups were domestic service, agriculture and coal mining. By 2008, these had become sales personnel, middle managers and teachers. As Korowicz (2010:10) argues, "today, the largest groups have little to do with production, but are more focused upon the management of complexity directly, or indirectly through providing the knowledge base required of people living in a world of more specialised and diverse occupational roles". The 1950s saw this transition under way in Totnes and district, and the oral history interviews conducted offer an insight into a time with a foot in both camps. This was a period of austerity, rationing of essentials still in place until July 1954. Supplies of energy were also unreliable; in February 1946, 1.75 million industry workers were temporarily laid off due to a lack of fuel to power the factories, and households in many parts of the country were without electricity during the daytime (Kynaston 2008). Throughout the oral history interviews, 12 key aspects of Totnes life emerged which could be argued to demonstrate resilience:

- 1. A cultural ethic of frugality, seeing food and other resources as precious, and a promotion of the non-overuse of resources.**

²¹ As discussed in Section 2.4.4.

"My grandmother's attitude to food was if it is put in front of you, you must eat it. You had no choice. You must not leave a crumb. Food was very precious and most of it was vegetables. It was a good healthy diet, proper, fresh food" – Alan Langmaid

"I was very envious of friends who had dogs, and could feed them bits under the table!" – Val Price

"I never bought anything unless I could pay for it" –Vera Harvey

2. Local processing of food as an integral part of the local economy.

The production and processing of food was a far greater generator of employment than it is today. Three of the town's main employers, Harris's Bacon Factory, Tuckers Sweet Factory and the Milk Factory, were food producers, and a far higher proportion of the town's shops were food shops.

3. A far greater number of households growing a proportion of their own food

As well as the great extent of back garden food production in the town (see Text Box 5.6), the keeping of small livestock was also common. Alan Langmaid estimates that one in ten homes kept chickens, recalling "there was always someone with a big wire netting chicken coop", but Marion Adams remembers it as being even more than that, closer to being every third house.



Figure 7.1. Totnes in the 1930s. Note glasshouses and food production areas, comprising Heath's and Gill's market gardens (Source: Totnes Image Bank and Rural Archive).

4. Urban commercial food production

Totnes featured 3 commercial market gardens within the town itself, Heaths, Gills and Phillips/Victoria Nursery.

"My dad and George Heath were both in the amateur operatic society and would be singing in the same Gilbert and Sullivan show, so they would sing little bits to each other, and then him saying "oh no, tomatoes, we got no tomatoes, but let's go get some then"... and then we all went over. That's what we did. We all went over to the greenhouses at the nursery and picked tomatoes, and they sang songs to each other wandering up and down and talked about this and that" - Andy Langford.

"A Highways engineer from Devon County Council came into one of the greenhouses one day, and told me and my father "you won't be picking

many more tomatoes here, we're going to build a road through the place"
- Ken Gill.

5. Markets that link local farmers to local consumers

The town held a fortnightly market when farmers traded livestock.

"On Tuesdays, the town became what you would imagine the Somme to be. It was muddy, dirty, dungy, smelly, drunken, bloody and crowded".
Alan Langmaid.

"Once you took away the Market it wasn't the same". Ken Gill.

The Pannier Market (the main market) was "all covered, with old stalls with top and bottom doors, and a separate bit in the middle. Anyone could sell anything, rabbits (this was pre-myxomatosis days) and so on". Douglas Matthews.

6. Locally owned shops

Like other towns and cities at the time, Totnes contained a far higher proportion of locally owned shops. Although Totnes still has a greater proportion of these than other places, the first supermarket appeared in 1968.

"It has been progress of a sort, or has it? I'm not sure. We lost something we will never be able to regain. The loss of a lot of small shops has been hard, although we have replaced them with what we might call 'slightly unusual shops'... We've lost the dairies, the independent grocers, although we have retained a good selection of butchers and some good cheese and fish shops. When you consider what we used to have..." Ken Gill.

"Everyone seemed to buy everything in the town, they didn't go anywhere to buy it". Marion Adams.

7. Availability of Live/Work Units in the town.

"All of the little back streets had some kinds of artisans or builders yards or something going on in them. You didn't have to go very far out of the High Street before you were in light industrial premises. All of the top of town, like Harris's ironmongers, they had their big ironmongery shop, but on the other side they had, where Greenfibres is now, an agricultural machinery shop. Can you believe it?! There was agricultural machinery sitting there which was for sale! They sold harrows and seed drills and things to go on the back of tractors! They had a little showroom of all that sort of stuff. Then they had the blacksmiths forge just round the back there".

8. Food Growing: part of everyday school life.

"King Edward VI Community College used to be a farm school. It used to have sheep, we learnt about farming and agriculture, we used to put the ram to the sheep, we used to have the first lambs. They were there a good time, the original sheep only died when my kids were there. They had a big flock until the early 1990s. There were rabbits. The garden behind Kennicott is a walled garden. My mum used to send me up there to buy vegetables and flowers". Marion Adams.

9. Lower Expectations of thermal comfort.

"From morning to night you were chilled right through to the bone. Even coming into the house you got warmer but never really warm. You'd go to bed cold and warm up in bed. You'd have a hot water bottle. It sounds romantically tough, but it was just the way it was, everyone was like that". Alan Langmaid

10. Availability of Casual Work

"It seemed like it was very possible to make your living by picking up short term bits of work in all sorts of different places. It was very busy

from that point of view. There were lots and lots of different occupations you could get involved in". Andy Langford

This is useful to contrast with the following comments from the focus group on work and skills. "When I came years ago there was the Bacon Factory and the Dairies, but now gone. The Dairy has gone to Somerset". "Morrisons is the major employer in the area, 230 people".

11. A Work Culture that was more physical

Alan Langmaid recalls, from his time working at the Totnes Times in the late 1960s, the chief compositor in the print room, a man called Bill Baker. Alan was 16, and by his own admission, skinny and somewhat scrawny. Alan continues;

"'there y'are boy' he said, 'lift that!' There was this page in this steel frame with all this lead type, and I couldn't even lift one corner! He just slid it to the edge, on its side, on his shoulder, and marched off to this machine. He was 72. Everyone had that attitude. They worked continually. They didn't know how not to work".

"I used to be dropped off on the bus, walk along a lane about a mile and a half to the farm, work all day, walk back, and get the bus back home! Long day! But that's just what you did". Marion Adams

"People worked so hard in those days". Vera Harvey.

12. A degree of practical skills and a sense of being able to turn one's hand to anything

"It's what Dads did. They hovered in sheds with glue pots, hammers and things. They mended things, put them back together. He once made me a farm with all the animals, and a doll's house". Val Price

At the end of the interviews, interviewees were asked what, from the period in question, they felt were the elements that society would do well to carry forward into a new period of increased localisation and energy scarcity. There was a fairly high degree of unanimity on those things best consigned to the past. They were:

- Life with no washing machine
- Coal
- Life without central heating
- Cold houses and the resultant feeling of being permanently cold in winter months
- The mangle

In terms of the things that people felt strongly ought not be consigned to history, and ought to be carried forward into a lower energy future, they were;

- Computers
- Double glazing
- The Internet
- Solar panels
- Cavity wall insulation and household insulation in general
- The National Health Service
- Good public transport
- The washing machine
- (In terms of gardening) reusable seed trays and clay pots
- Jobs for life
- The pre-Beeching railway network.

So, can it be argued that any of the above actually made Totnes more resilient? Inspired by Brown's (2009) examination of the Edo period in Japan as a source of insights about resilience, the question arises whether attaching of the concept of resilience to these examples yield any insights of use to North's

(2010a) concept of 'intentional relocalisation'? As a tool to analyse this, Walker & Salt (2006) set out nine qualities a resilient community would value, and these are used in Table 7.2 below to explore the resilience, or otherwise, of 1950s Totnes, based on an interview with Alan Langmaid of Totnes Museum (2010). This provides a powerful counter to accusations of romanticising the past. Walker and Salt's nine qualities are only seen here as rough guidelines, some proving difficult to operationalise in practice.

'The Transition Handbook' (Hopkins 2008:57) argued, in a section called 'Life Before Cheap Oil Wasn't All Bad', "while not wishing to romanticise the past or paint an idyllic picture of localised economies, we have come to believe 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". The analysis presented here is similarly unromantic, and as Table 7.2 shows, the 1950s in Totnes were in some ways more resilient than today, in other ways less so. What might the key lessons be from the above analysis?

Aspects of Resilience (from Walker & Salt 2006)	Positive	Critical
<p>Diversity A resilient world would promote and sustain diversity in all forms (biological, landscape, social and economic).</p>	<p>There was a far greater diversity of types of shops, trades and crafts, employment, the local economy supported "the butcher, the baker, the candlestick maker" until imports made such diversity uneconomic. There was a greater diversity of land use types; more smallholdings, less land under fallow or set-aside, more market gardens and small areas under field crops, more orchards and small livestock. In the town there was more diversity in terms of gardens used more productively, and many houses kept chickens.</p>	<p>There was less diversity than present in terms of the availability of imported consumer durables. There was also much less racial diversity, less diversity of sexual expression and orientation, less diversity of religions ("you were either Catholic or Protestant"), less political diversity ("you were either Conservative or Socialist")</p>
<p>Ecological Variability A resilient world would embrace and work with ecological variability (rather than attempting to control and reduce it)</p>	<p>Agriculture in the area was more diverse and multi-functional, with more polycultures and smaller farm units. This led to greater ecological variability.</p>	<p>Much of this was imposed by circumstance rather than philosophy, so that when technological improvements were introduced to farming they were largely embraced without much questioning. When asked if he mourned the passing of working horses, Douglas Matthews (see Appendix 2) said "it depends very much on the individual. If economics was your objective then the change away from horses brought great pleasure. If you were artistic and poetic, it was a shame".</p>
<p>Modularity A resilient world would consist of modular components</p>	<p>Totnes was more modular in terms of food, with its diversity of food sources, positioned as the market town in the centre of a large rural catchment. As Alan Langmaid put it "we never feared a lack of food".</p>	<p>There was less modularity when it came to energy, the town depending on imported electricity and town gas produced from coal from South Wales. The diversity of trades and increased local production greatly increased the town's modularity, but its energy supply system and transport system was no more modular than today's.</p>
<p>Tight Feedbacks A resilient world would possess tight feedbacks (but not too tight) (a tight feedback refers to the results of an action being felt</p>	<p>Feedbacks were inevitably tighter, given that more food was locally produced and therefore local communities were more involved with agriculture and had an interest in good land stewardship.</p>	<p>The irony however, is that the 1950s were a time of the emergence of chemically intensive farming and intensive agriculture, now acknowledged to have had a detrimental impact on ecosystem health. Also, the River Dart was, at this point, highly polluted by local</p>

closer to home, rather than being a distant externality).		industry, an indication of a lack of awareness of the importance of local feedbacks.
Social Capital A resilient world would promote trust, well-developed social networks, and leadership (adaptability)	There were very strong social networks, people knew most other people. It was more robust. "It was like a net, you could see how everything connected. Now it is like a lot of nets which occasionally overlap, but it is much more easily torn apart".	Totnes had a far more rigid class structure, and was a far more conservative community.
Innovation A resilient world would place an emphasis on learning, experimentation, locally developed rules and embracing change	One of very few examples of innovation was Dartington Hall Trust, which stated innovation as one of its core principles, and pioneered new approaches in farming, land use, the Arts and other areas. The oral history reviews revealed the depth of suspicion with which Dartington was viewed by the community of Totnes.	Totnes was not a community that fostered innovation. "Anything innovative was suppressed. 'I've got an idea!' 'Well keep it to yourself'". The conservative culture stifled innovation, and it wasn't until the questioning culture of the 1960s that some value began to be placed on innovation. The education system was more focused on learning facts and information rather than encouraging enquiry or experimentation.
Overlap in Governance A resilient world would have institutions that include 'redundancy' in their governance structures and a mix of common and private property with overlapping access rights	Governance was much more connected to the community. The area was governed by Totnes Urban District Council and Totnes Rural District Council which meant that local politics was far more reflective of the community than the current model (see 6.3.3.). The Council owned a number of properties in the town, and in terms of a local government model that truly enabled local democracy, it was far better than the present approach.	
Ecosystem Services A resilient world would include all the unpriced ecosystem services in development proposals and assessments.		In the period under examination, there wasn't really much of a concept of 'ecosystem services', or of taking ecosystems into consideration when planning new developments. Environmental Impact Assessments were many years away, and development was driven by need and economics, rather than being influenced by environmental considerations. One example provided by Alan Langmaid was in the 1960s when,

		<p>in the docks in Totnes, the timber yard needed a larger turning circle, and a turning bay was dug out, reinforced with concrete and timber piles, which led to significant silting of the river. More recently, the dredging of the River Dart has been restricted by the Environment Agency.</p>
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Table 7.2. How resilient was Totnes in the 1940-50s? (Sources: Walker and Salt's (2006) qualities of a resilient community, and the author's interview with Alan Langmaid of Totnes Museum (Langmaid 2010)).

Firstly it is clear that relocalisation/low carbon living has to be about much more than just technologies and legislation. The frugality of the times was underpinned by a mindset of an abhorrence of wastefulness, a valuing of hard work, and a commitment to community, in the same way that a relocalised economy would need to be underpinned by similar values. Secondly it is clear that there is a strong tension around the mindsets represented by the two generations which diverged at the start of the 1960s. The generation which had lived through the war valued frugality, abhorred waste, grew food and repaired things, yet also tended towards traditional values and didn't embrace diversity and innovation. The younger generation rushed to embrace innovation, experimentation, a rejection of tradition, but at the same time also rejected many of the skills and the practices of their elders. The Transition approach has sought to draw together the best of both of these, arguing that relocalisation will need to acknowledge the need for personal, as well as community, resilience, and will need to be based both on a revaluing of skills and the value of the local economy, as well as on an appreciation of diversity and innovation, as well as a culture of entrepreneurship.

7.4. Assessing Emotional/Personal Resilience

"While millions of our species have experienced the collapse of their civilizations, none before this generation has transitioned from an industrial to a post-industrial lifestyle. None has experienced resource depletion, energy decline, climate change, overpopulation, or broken economic systems in the same manner as that with which we are currently faced. Whether it occurs rapidly or slowly, the collapse of a civilization is always traumatic. Wherever we might be in the process, it is tempting to become pre-occupied with logistical preparation only, i.e., relocating to a sustainable area of the world, learning skills, acquiring tools, storing food, and much more. Yet if one does not address the interior world as well as the exterior, the journey may be immensely daunting, even overwhelming" (Baker 2009:unpaginated).

7.4.1. Introduction

Thus far in this thesis, the concept of resilience has been explored in its socio/ecological context, but this section now looks at what it means to be a more resilient individual, able to weather times of shock and change, and, by extension, the factors that contribute to a community being more psychologically resilient. It also explores whether it is possible to measure resilience, and parallel research that has explored how happiness can be measured. It then looks at research which expands insights on personal resilience to look at community resilience.

The study of resilience in relation to ecological systems and the study of human/psychological resilience emerged around the same time (early 1970s) but independent of each other (Masten & Obradovic 2008). In human development science, 'individual resilience', for Masten et al. (1990:unpaginated) refers to;

"the processes of, capacity for, or patterns of positive adaptation during or following exposure to adverse experiences that have the potential to disrupt or destroy the successful functioning or development of the person".

The concept of 'ego resilience' refers to a fairly stable personality trait that reflects an individual's ability to adapt to changing environments (Block & Kremen 1996, Block & Block 1980). Studies have shown that in a crisis situation, people who have a high ego resilience experience more positive emotions than those with less, although they do still experience negative emotions at similar levels (Cohn et al. 2009). For Fredrickson et al. (2003:367), psychological resilience is viewed as a relatively stable personality trait characterised by the ability to bounce back from negative experience and by flexible adaptation to the ever-changing demands of life". Until recently, psychologists held that resilience was a rare trait held only by a few outstanding individuals, but more recent research has shown that resilience is a common trait "that results ... from the operation of basic human adaptational systems" (Masten 2001:227).

There are, according to Masten & Obradovic, some significant gaps in the literature on individual resilience. There is only a small body of research that integrates the theory and science of individual human resilience with the broader social/ecological resilience literature, and the same applies to that connecting individual resilience to the adaptive functioning of larger social systems and networks. There is, however, clearly an overlap between resilience in the context of socio-ecological systems and human resilience. Masten & Obradovic (2008:unpaginated) argue that "both approaches focus on changes that preserve viability and adaptive flexibility for an uncertain future in

which adaptive success in the face of major challenges requires change and some responsive flexibility for a system to survive or flourish”.

7.4.2. Can Transition Facilitate Psychological Resilience?

If resilience arises from healthy human functioning, is there any connection between localisation and the Transition process and degrees of human resilience? In an interview for this thesis, Kasser (2010:pers.int.) speculated on a connection between the building of the kind of resilience that arises from the localisation strategies explored in Chapter 5 and wellbeing/happiness:

“All the research I’ve seen, all the thinking I’ve done, and all the people I’ve talked to, suggests to me that [localisation] will do a better job of meeting people’s needs, they’d be happier and people will live in a more socially cohesive way and live more sustainably. Or at least it will *encourage* all those things.... if my intuition about what a resilient community is is correct, then what you would hopefully find is that as time goes on, people would be experiencing more and more satisfaction of their needs and that their community is providing them with more and more opportunities to enact those needs, and to enact those intrinsic values, and that they’re experiencing less and less barriers to enacting the intrinsic values and satisfying the needs. On a psychological level, that’s what I’d be looking at within individuals, is that occurring as time goes on”.

This raises a key question. In a co-authored study (Klar & Kasser 2009), the authors explored three studies which identified that activists are more likely to ‘flourish’ than non-activists, and “provide support for the hypothesis that engaging in political activism is associated with higher levels of wellbeing” (Klar & Kasser 2009:156). By extension, could it be argued that engagement in a Transition initiative (which falls within Kasser’s definition of ‘activism’), or in

some of its manifestations such as food growing or domestic energy efficiency, can lead to improved wellbeing, and to increased inner, and community, resilience? Additionally, as Richardson (2010) asks, is it the case that Transition initiatives lead to healthier communities, or is it the case that it is healthier communities that are attracted to becoming Transition initiatives? Although she notes that there is insufficient research on this question, it is an important area for research. The connection between resilience and positive emotion has been identified in a wide range of studies, and as Fredrickson et al. (2003) noted, "the research findings suggest that resilient people have optimistic, zestful, and energetic approaches to life, are curious and open to new experiences and are characterised by high positive emotionality". It has been noted above that the Transition approach is one of applying 'engaged optimism' to peak oil and climate change, and of taking a positive and solutions-focused approach to resilience building (Hopkins 2008). Is there any evidence from the literature that this approach might lead to actual increased psychological resilience? There is a considerable amount of literature that indicates that this may, indeed, be so.

It has been established that resilient people use humour (Masten 1994, Werner & Smith 1992, Wolin & Wolin 1993), creative exploration (Cohler 1987), relaxation (Anthony 1987, Murphy & Moriarty 1976) and optimistic thinking (Anthony 1987, Murphy & Moriarty 1976), all elements of the Transition approach. There is also emerging evidence that resilient people not only are able to cultivate positive emotions in their own lives, but, according to Demos (1989) are also gifted at eliciting positive emotions in others close to them which, he argued, creates a supportive social context that also facilitates coping. In other words, under the right circumstances resilience can be

infectious, and with its emphasis on creativity, networking and optimistic thinking (Hopkins 2008), the Transition approach may be particularly well positioned to bring this about. A number of correlations were made to try and establish whether involvement in Transition could lead to people feeling happier. Responses from the survey to questions relating to whether people knew the depth of their loft insulation, were skilled in growing food, had regular use of a car, attended TTT events, considered themselves to be people with strong religious/spiritual beliefs, whether people felt that the things they owned said a lot about them, whether they considered themselves to be frugal, the number of skills people felt they had and the amount of television people watched each week, were correlated against the extent to which people agreed with the statement "in general, I would say that I am satisfied with my life". No significant statistical correlations were found, indicating that there may not be a significant connection between wellbeing/happiness and these factors. On an initial evaluation, it would appear that, in Totnes at least, the research does not support the findings of the three studies conducted by Klar & Kasser (2009) that engaging in political activism (a broad term taken to include many of the activities involved in Transition) is associated with higher levels of wellbeing.

On closer inspection however, it could be argued that the responses to the life satisfaction question make correlations unreliable. Responses to the question "In general, I would say that I am satisfied with my life" are shown in the following pie chart:

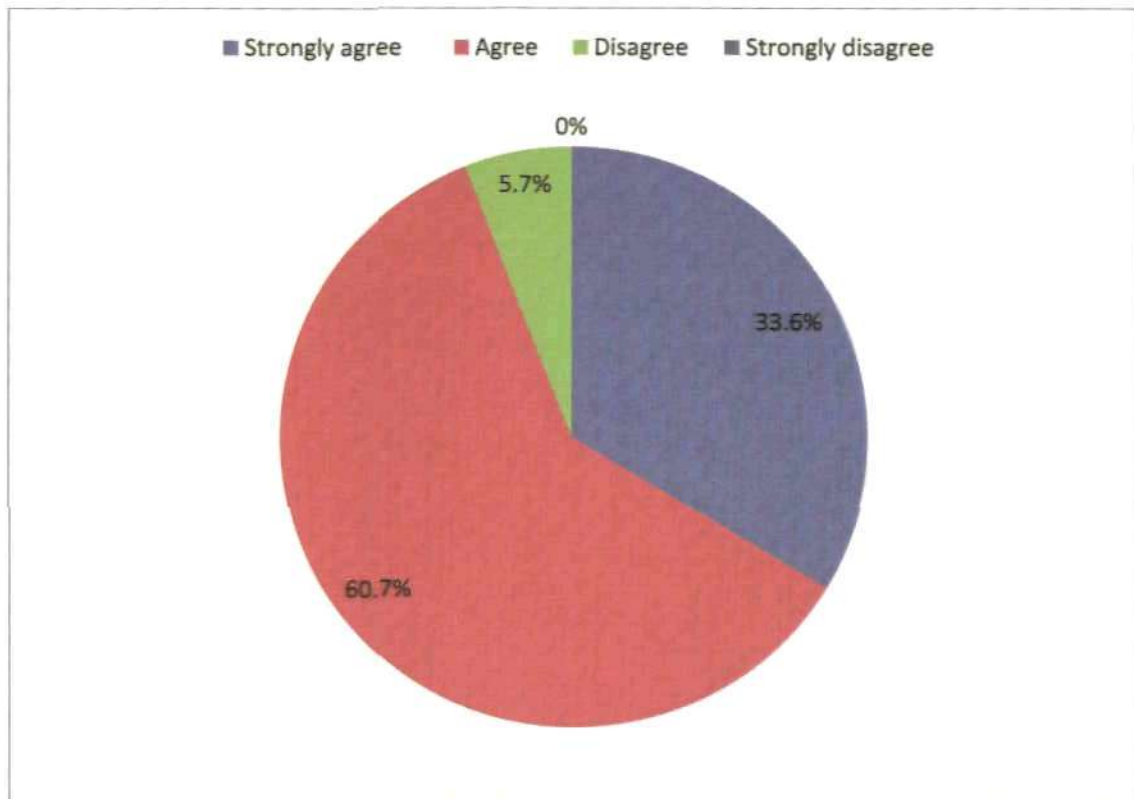


Figure 7.2. Responses to the statement 'In general, I would say that I am satisfied with my life'. Strongly agree 71 (33.6%), Agree 128 (60.7%), Disagree 12 (5.7%), Strongly Disagree 0 (0%). (Source: author's survey).

95% of the sample strongly agreed or agreed with this statement, which indicates firstly that Totnes and Dartington are home to a relatively happy and satisfied population, but the lack of variation and restricted range in the outcome variable makes it difficult, statistically speaking, to find meaningful correlations with other measures. A wider range of questions, exploring aspects of wellbeing such as affect, self-actualization, meaning in life and other related variables (Kasser 2010:pers.int.) would have produced more variation, and made correlations more meaningful. Klar & Kasser's (2009) studies, conversely, used multi-item measures of a variety of different wellbeing variables which made for more meaningful correlations.

I am adaptable ...	In general, I would say that I am satisfied with my life			
	Strongly agree (%)	Agree (%)	Disagree (%)	Total (100%)
Strongly agree	38 (58)	25 (38)	2 (3)	65
Agree	23 (22)	75 (72)	6 (6)	104
Disagree	9 (26)	24 (71)	1 (3)	34
Strongly disagree	-	-	3 (100)	3
Total	70 (34)	124 (60)	12 (6)	206
No answer(s) given: 13				

Table 7.3. Correlation of the degree to which people agree with the statement “I am adaptable and can turn my hand to new skills fairly easily” with their degree of life satisfaction (Source: author’s survey 2009).

That said, there were two questions where a significant correlation was discovered. The first was when the degree to which people agreed that in the event of a crisis the community would pull together was correlated with people’s degree of life satisfaction. This produced a Spearman correlation coefficient = 0.18, $p = 0.01$, indicating that there is a moderate statistically significant correlation between feeling satisfied with one’s life and feeling that the community would pull together and work together in the event of a crisis. A similarly positive correlation was discovered when the degree to which people agreed that “I am adaptable and can turn my hand to new skills fairly easily” was correlated against life satisfaction. This produced the results shown in Table 7.3:

Here the Spearman correlation coefficient was 0.31, $p < 0.001$. So there is a statistically significant correlation ($p < 0.001$) between being satisfied with one’s life and considering oneself adaptable. Although the statistical significance is marked, the correlation coefficient is still not very high (0.31) - zero indicates no

correlation, and 1.0 indicates perfect correlation. There are therefore indications that those who have an optimistic outlook on the ability of their community or of themselves to adapt and respond to crisis are happier people.

These findings challenge Klar & Kasser's research, in finding limited link between engagement in activist behaviours and happiness/wellbeing. This may be due, in part, to the relatively small sample size, but if one assumes the findings are sufficiently representative, might it be that rather than supporting Klar & Kasser's findings, they strengthen Fredrickson et al's (2003:367) thinking that "research findings suggest that resilient people have optimistic, zestful, and energetic approaches to life, are curious and open to new experiences and are characterised by high positive emotionality"? Might the findings demonstrate that in spite of respondents' relatively high levels of resilience, being surrounded by others who think and operate in the same way means that actually 'doing things', such as loft insulation and food growing, is not actually a source of increased happiness, rather just a taken-for-granted fact of life in a more resilient community?

7.4.3. Measuring happiness

Happiness and resilience are, as will be explored in 7.4.3., intertwined. A large body of empirical literature now shows that people who are happier achieve better life outcomes, which include greater financial success, good mental health, effective coping, supportive relationships and even have better physical wellbeing and live longer lives (Cohn et al. 2009). It may, quite reasonably, be asked which comes first, whether happiness just naturally arises from improved circumstances. A study by Lyubomirsky et al. (2005), reviewing 225 studies on the subject, concluded that happiness usually predicts these positive outcomes

rather than simply arising from them. Is it possible then to measure happiness? Surveys have measured levels of happiness in populations for many years. In the UK, levels of happiness have been static since 1975, in spite of rising GDP and levels of consumption (Layard 2006:29). In the survey, levels of happiness in Totnes were measured using a variation of the question used by the World Values Survey (WVS), the standard way of measuring happiness. The WVS question, 'all things considered, how satisfied are you with your life as a whole these days?' was rephrased as 'in general, I would say that I am satisfied with my life', measured with a Likert Scale. 33.6% of people strongly agreed, 60.7% of people agreed, 5.7% disagreed, and nobody strongly disagreed. If 'strongly agree' could be interpreted as 'very happy', 'agree' as 'quite happy' and 'disagree' and 'strongly disagree' as 'not too happy', then the Totnes findings can be seen in their context, in comparison with national studies, in Figure 7.4 below.

	UK Top Quarter	UK Bottom Quarter	Totnes
Very happy	40	29	34
Quite happy	54	59	61
Not too happy	6	12	6
	100	100	100

Table 7.4. Happiness in Totnes according to income position (Source: the author's questionnaire, with additional information from World Values Survey 1981 and 1990 (Layard 2006:31)).

Totnes emerges as a moderately happy community, somewhere around the national average. However, more work needs to be done to unpick the constituent parts of what contributes to happiness and why some places are happier than others, as well as whether Transition could be seen, over time, to make communities more or less happy. Respondents were also asked whether

they agreed or disagreed with the statement 'I would describe my outlook on the future of this community as optimistic', a slight rewording of a question from the questionnaire in the Community Resilience Manual (CCE 2000). 80% either agreed or strongly agreed and only 1 respondent strongly disagreed. Totnes's relative happiness is perhaps due to a fair proportion of its population already having spent some time thinking about the implications of a more localised economy. In the focus group on energy, one participant stated "we've got to accept that our standard of living is going to go down significantly", to which another added, "it's got to change, I wouldn't say go down".

7.4.3. The Qualities of Human/Psychological Resilience

"The great surprise of resilience research is the ordinariness of the phenomena. If ... [basic human adaptational systems] are protected and in good working order, development is robust even in the face of severe adversity; if these major systems are impaired, antecedent or consequent to adversity, then the risk for developmental problems is much greater, particularly if the environmental hazards are prolonged" (Masten 2001:227).

Many authors have reviewed the literature on human resilience (Garmezy 1985, Bonnano 2004, Luthar 2006, Masten & Gewirtz 2006), and a surprisingly consistent picture emerges as to what defines it. Masten (2001:235) encapsulates the research findings, arguing that most human resilience arises from "the operation of fundamental human adaptive systems that have evolved over the course of biological and cultural evolution". If these systems are able to function normally, human resilience will be enabled: if these systems are disrupted or damaged in some way, it is diminished. From their analysis of studies on human resilience, Masten & Obradovic (2008) identify a number of

"protective systems" which could be described as the adaptive capacity that emerges from human relationships, what they term 'human capital'. These include;

- *Attachment*: the strength of bonds formed with others, the observation that people, especially children, usually function better psychologically in proximity to attachment figures (family and friends)
- *Agency self efficacy, and mastery motivation system*: those who have a positive view of their own ability to affect change and influence outcomes have been shown to be more likely to succeed in the face of adversity
- *Intelligence*: in situations of threat or adversity, the ability to think and plan effectively is characteristic of resilience. This intelligence in turn depends on health, brain development as well as learning processes and experience
- *Regulatory systems for controlling arousal, affect, attention and action*: as Masten and Obradovic (2008:unpaginated) argue, "overcoming adversity often calls on self-regulation skills to continue functioning effectively under highly stressful or arousing circumstances".
- *Microsystems, including family, peers, classroom and work*: social groups have the potential for providing support and social capital which can increase the adaptive capacity of their members. In the same way, unhealthy group activity, such as gangs, can reduce adaptive capacity.
- *Community-level systems and collective efficacy*: there is some evidence from studies of human resilience that these can contribute to individual or family resilience.
- *Macrosystems: culture, media and national and international organisations*: one example of this is religion, and whether strong religious views make individuals more resilient. This will be explored in more detail later (Masten & Obradovic 2008:unpaginated)

Siebert (2010:unpaginated) translates the concept of resilience into the personal context, addressing the question as to what 'inner resilience' might mean:

"Resilience is the process of successfully adapting to difficult or challenging life experiences. Resilient people overcome adversity, bounce back from setbacks, and can thrive under extreme, on-going pressure without acting in dysfunctional or harmful ways. The most resilient people recover from traumatic experiences stronger, better, and wiser".

He posits five levels of inner resilience:

- Maintaining one's emotional stability, health, and well being
- Focusing outward and developing good problem-solving skills. (research indicates that problem-focused coping leads to resiliency better than emotion-focused coping)
- Focusing inward and developing strong inner "selves" such as self-esteem, self-confidence, and a positive self-concept
- Developing resiliency skills
- Developing the talent for serendipity, -the ability to convert misfortune into good fortune

At this point, it would be instructive to return to the findings of the Totnes survey. One section probed the degree to which respondents could be seen as materialistic. The responses appear in Table 7.5 below.

A conscious decision was made not to include a mid-point or 'don't know' choice in the Likert Scale used in the questionnaire, drawing on Garland's (1991) observation that not including a mid-point option leads to more reliable data, and also that social desirability bias can be minimised, or even eliminated, by not having a mid-point. Social desirability bias is a term used to describe the tendency of some respondents to skew their responses to what they feel the questioner wants to hear, and the observation that when a questioner's agenda is transparent the respondent will over-report good behaviour and under-report

bad behaviour (Thompson & Phua 2005). The questionnaire was presented to respondents as a survey from University of Plymouth rather than having anything to do with TTT. The findings in Table 7.5 are largely consistent with the hypothesis that Totnes is what Inghart (1971) referred to as a 'post materialist' community.

	Number (%)					
(Numbers in brackets are percentages)	Strongly agree	Agree	Disagree	Strongly disagree	Total	No answer given
I consider myself a person with strong religious/spiritual beliefs	32 (15)	67 (32)	70 (33)	40 (19)	209 (100)	10
The things I own say a lot about me and how I'm doing in life	14 (7)	79 (38)	89 (42)	28 (13)	210 (100)	9
Buying things gives me a lot of pleasure	14 (7)	83 (40)	85 (41)	25 (12)	207 (100)	12
My life would be better if I owned certain things I don't have	12 (6)	40 (20)	107 (53)	44 (22)	203 (100)	16
I consider myself to be a frugal person	16 (8)	102 (51)	71 (36)	10 (5)	199 (100)	20
Spending time with family and friends is of great importance to me	137 (65)	65 (31)	7 (3)	3 (1)	212 (100)	7
It is important to keep up with fashions in clothing and hairstyles	6 (3)	24 (11)	102 (48)	81 (38)	213 (100)	6

Table 7.5. Survey responses relating to attitudes and degrees of materialism in Totnes and Dartington (Source: author's survey 2009).

The concept of post materialism dates back to the early 1970s, and has been described as the move from "giving top priority to physical sustenance and safety toward heavier emphasis on belonging, self-expression and the quality of

life" (Inglehart 1990:66). While clearly an entire community cannot be described as post materialist, and it is clear from this research's in-depth interviews (see 4.5.) that in spite of its 'alternative' reputation, the town has a very conservative aspect, it is also evident from the research that individuals can hold both materialistic and post-materialistic views simultaneously. Given its history as a centre of arts and culture, it makes sense that a survey like this would uncover a strong streak of post-materialism. This same streak of post materialism was also identified by Seyfang (2009c:2) in a survey of Transition Norwich, which identified that "the members display the typical characteristics of 'post-materialists' who eschew high-status jobs and consumption in favour of personal fulfilment and (in particular environmental) activism". Although the Totnes study is not a survey of those actively engaged in TTT, the fact that 62% of respondents felt TTT is relevant to respondents' lives and to their concerns, would indicate that Totnes is a community with a higher level of post-materialism than many others.

In this context, it is unsurprising that 96% of respondents answered that spending time with family and friends is of great importance to them. Just under half of respondents stated that they considered themselves to be people with strong religious/spiritual beliefs, consistent with national surveys, which consistently find that less than half the UK population now considers itself to have religious or spiritual views. Research by the Tearfund (Ashworth & Farthing 2007) found that 66% of the UK population have no connection with any religion or church, and the British Social Attitudes survey 2006/2007 (National Centre for Social Research 2007) found that the percentage of people who feel they "do not belong" to any formal religious group had risen from 3% in

1964 to 38% in 2005. A study by The Economist (2008) polled 1000 people in the UK and found that less than 40% now believe there is a God. Several participants in the focus group on work and skills stated that they felt that the less conventional spiritual beliefs for which Totnes is, perhaps unfairly, renowned, (see 4.4.) are less prevalent today than 20 years ago. The community's religious tolerance was reflected by one participant, an elderly retired mental health nurse, who said;

"I come from a very pragmatic background, atheist, so I have no time for religion, but I don't have a problem with people being spiritual or religious, but I'm not interested in it at all. However, I quite like having it around me, because I think it attracts a lot of nice people, gentle and sensitive people, the more of them the better!"

Views in relation to materialism were, again, as one might expect for a predominantly post-materialist community. The majority of people stated they would describe themselves as frugal (although this is of course a highly relative term, one person's frugality is another person's comfort). Very few people (14%) felt that keeping up with the latest fashions was important, but perhaps surprisingly, 45% felt that the things they own say a lot about how they are doing in life, and 47% stated that "buying things gives me a lot of pleasure". These findings could be said to support the focus group findings which challenge the notion that Totnes is a model eco community, living simply and with a minimal ecological footprint. They also reveal the complex self image of respondents, and the contradictions that inform most people's behaviour choices.

An element of the second of Kasser's (2002a:24) needs, competence, raises the question of skills ("a feeling that we are capable of doing what we set out to do..."), and the degree to which people feel equipped with a basic skills set which they could adapt to a range of circumstances. Respondents were first asked to what extent they agreed with the statement "I am adaptable and can turn my hand to new skills fairly easily". 32% strongly agreed, 50% agreed, 16% disagreed and only 1% (3 respondents) strongly disagreed. To find that 82% of people agreed or strongly agreed was higher than this researcher had expected, given the decline in the teaching of practical skills through the education system.

One question went into more depth as to what particular skills people have. It has already been mentioned that 66% of respondents claimed to be excellent or good at food growing, but in addition, 20% of respondents felt 'reasonably competent' at keeping small livestock, 60% at making basic house repairs, 50% at repairing clothes, 87% at cooking, 69% at painting and decorating, and 23% at storing garden produce.

Skills were explored in the oral history interviews. In general, people interviewed were able to turn their hands to a wider range of skills than today. Muriel Langford lists her skills as washing, cleaning, cooking, sewing, needlework, making and repairing clothes. Vera Harvey lists cooking, sewing and a general thriftiness: "I never bought anything unless I could pay for it". Marion Adams lists her skills as cooking, looking after animals, knitting and sewing, gardening, picking fruit and vegetables, adding "we didn't just sit down at the table and expect to be fed, you helped". Val Price however, admits that

she had few such skills. "I couldn't sew, I could knit a bit, I wasn't too bad at painting and decorating, but I didn't need to cook because I married a chef, and I went out to work".

One correlation looked at the number of skills in which people felt reasonably confident alongside their age, to explore the hypothesis that older people who grew up in a more skilled, practical world would still hold more skills than younger people. The results are shown in Table 7.6 below.

Age	Number of skills ticked								
	0 (%)	1 (%)	2 (%)	3 (%)	4 (%)	5 (%)	6 (%)	7 (%)	Total (100%)
Under 18	1 (14)	1 (14)	-	3 (43)	1 (14)	-	1 (14)	-	7
18-30	-	5 (25)	2 (10)	2 (10)	4 (20)	5 (25)	2 (10)	-	20
31-45	-	2 (4)	9 (16)	16 (29)	10 (18)	11 (20)	3 (5)	5 (9)	56
46-60	3 (5)	4 (7)	4 (7)	10 (16)	15 (24)	12 (19)	8 (13)	6 (10)	62
Over 61	5 (7)	9 (13)	18 (25)	14 (20)	12 (17)	6 (9)	3 (4)	4 (6)	71
Total	9 (4)	21 (10)	33 (15)	45 (21)	42 (19)	34 (16)	17 (8)	15 (7)	216
No answer(s) given: 3									

Table 7.6. Correlation of age against number of skills in which respondents felt confident (Source: author's survey 2009).

The correlation produces a Spearman correlation coefficient of -0.13, $p = 0.051$, indicating a negative correlation between age and number of skills ticked which is of borderline statistical significance ($p = 0.051$). Looking at the median number of skills ticked, this is '4' for the age groups 18-30, 31-45 and 46-60, but is '3' for the over-61 age group. This finding that the number of skills actually falls among respondents over 60 runs counter to the hypothesis that a core of

key skills lies with the older members of the population. In addition, to get a sense of where in the community the skills and the confidence in them lie, the statement "I am adaptable and can turn my hand to new skills fairly easily" was correlated against respondents' age. The result was a Spearman correlation coefficient = 0.18, $p = 0.008$, which suggested that there is a statistically significant correlation between increasing age and increasing disagreement with the statement, i.e. older people on average feel they are less adaptable. This is a surprising finding, and runs counter to the discussion above, and to the assumption that older people represent a greater repository of skills than younger people. Of course, it may also be that respondents over 60 felt, when answering, that although they may possess a particular skill, they are no longer physically capable of doing it, and thus answered in the negative.

This could alternatively be explained by the fact that those people now in their 60s were the generation with whom the loss of these skills began. They were the generation revealed in the oral history interviews who, as Andy Langford revealed, saw gardening as "something you did if your Dad caught you". They were the generation that moved more towards office jobs, whereas one could argue that subsequent to that there have been cycles of resurgence in relearning these practical skills, the self-sufficiency movement and 'The Good Life' in the 1970s, the permaculture movement and organic gardening in the 1980s and 1990s, and today one observes the recent resurgence of interest in allotments (Jones 2010) emerging in part from the impacts of the recent economic downturn.

Figures 7.3 and 7.4 offer a speculative visualisation of this. 7.3 shows this researcher's expected outcome, that competency in a range of practical skills was at its peak during and shortly after World War 2, and has fallen steadily ever since, until today, where most of these skills are largely forgotten. The findings of this research however would suggest that reality is closer to 7.4, that levels of skills tailed away in the 1960s, and have undergone a series of 'pulses' ever since, as a proportion of each generation retrain itself in skills it comes to consider to be important. This is an area where further research would be very useful, and which has implications for the work of Transition initiatives, informing the degree to which focusing on 'The Great Reskilling' (Hopkins 2008) is the most strategic use of resources.

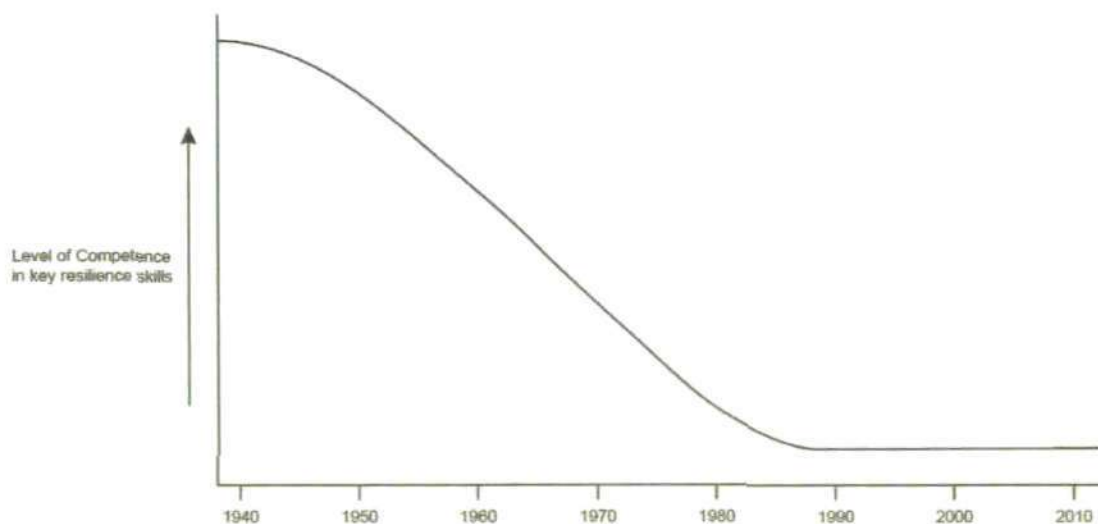


Figure 7.3. The working hypothesis of Transition, that people had high levels of competence in key resilience skills until the early 1960s, since when they have plummeted (Source: the author).

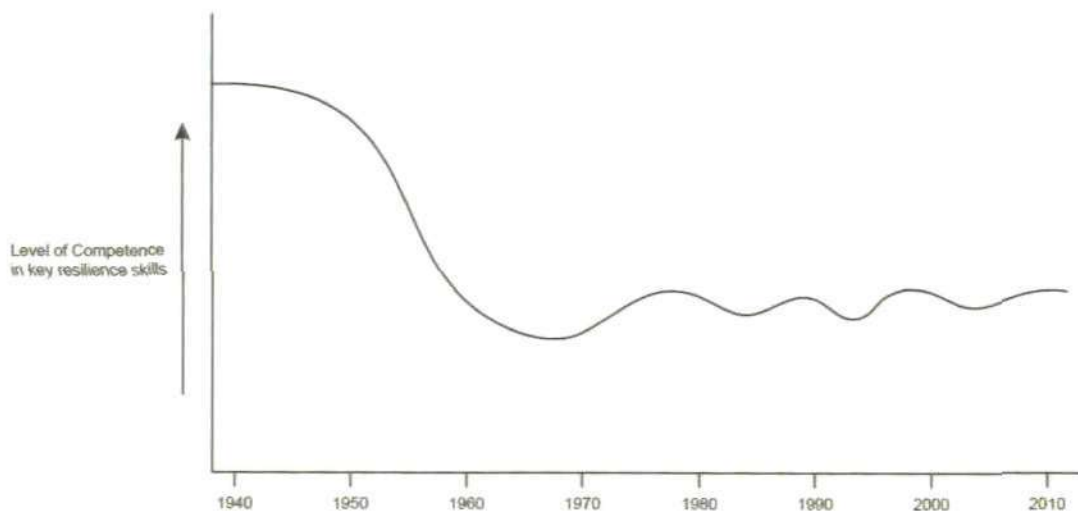


Figure 7.4. Conjectured findings from this research, showing how although levels of competency in key resilience skills fell sharply during the 1960s, each subsequent decade has seen fresh ‘pulses’ of people relearning and applying them (Source: the author).

7.4.4. Community Scale Resilience

Many researchers have argued that in the same way that resilience is a critical issue for individuals it is also vital for organisations facing adversity (O’Leary 1998, O’Leary & Ickovics 1995, Rutter 1987, Sutcliffe & Vogus 2003), and others have conceptualised resilience as an organisational level phenomenon (Gittell et al. 2006, Sutcliffe & Vogus 2003). In the same way that Masten (2001) has argued that resilience is an almost universal quality in healthy, functioning individuals, Powley (2009:1294) argued that;

“the definition of resilience employed here builds on two assumptions. First, resilience is a latent capacity in organisations built over time through social interaction and relationships. Second, resilience might be detected when organisations encounter setbacks”.

Survey respondents were asked the degree to which they agreed or disagreed with the statement “I feel that in the event of a crisis, the community of Totnes

would pull together and work together. 84% of respondents either agreed or strongly agreed, only 2% strongly disagreed. Reflecting on the survey findings in the preceding two sections, and on Powley's (2009:1294) assumptions that resilience is "a latent capacity in organisations (*and by extension communities*) over time through interaction and relationships" and that "resilience might be detected when organisations encounter setbacks" (ibid), the survey findings could be read as indicating that the community of Totnes is already more resilient than one might previously have assumed. Certainly the percentage of those claiming to be skilled in food growing is very high, and most other skills also rank higher certainly than this researcher had expected to find. The obstacles to the community being able to respond proactively to suggested futures, whether it be to Korowicz's (2010) 'Oscillating Decline' or 'Systemic Collapse' scenarios, would therefore appear not to be a lack of skills, a lack of social capital, or a lack of individual resilience and flexibility.

These findings challenge the Transition perspective, which assumes that people have grown unskilled, and are unprepared and unresilient. Powley's comments would appear to suggest that resilience is latent until called into action by changing circumstances. One indicator from the interviews that suggests that there is already an active web of activity in existence is the comment from a reporter with the local newspaper that "I think sometimes there are almost too many community groups fighting for the same territory". Instead, the obstacles that emerge through the focus groups are a lack of time, the difficulty in earning a living, and others identified in the following quotes from the focus group sessions:

"Totnes is full of a lot of people who like talking!"

"I think a lot of people would be very supportive of these projects and ideas, but just aren't able to participate at the moment. You can't do everything can you?"

"I use the car more than I want to. That's definitely due to bad and incredibly expensive public transport. I'd have to be a very rich person to get on the bus to school with four kids!"

"This whole Transition Town thing, I really wanted to get involved in that. I love the idea of planting trees and gardening and things, but I'm so knackered by the end of the day, that I can't even do my own garden, never mind someone else's! I did sign up for it, I was full of enthusiasm, but when push came to shove, and it was raining and dark.... I wish I could have half the week for it, I am essentially a practical person. I've got carpentry skills, and gardening skills. Again it comes down to politics, I'd love to, but it comes down to money doesn't it? Pay the bills... I can't afford to be planting trees!"

These quotes indicate a general enthusiasm for the relocalisation concept, but that it struggles to gain a foothold in a world where people work longer hours than historically, are more indebted, and where the pervasive cultural trend is still very much in the opposite direction to localisation. It reveals a complex picture in terms of what prevents people engaging with initiatives such as TTT. There are perceptions that engagement in TTT means physical outdoor work, that involvement with TTT and taking practical steps to reduce energy use at home are distinctly separate things, and the tension between those who think it is all about people who talk but who don't do much, and those who think it is all about physical action and little else. One might suggest that for some, perceived obstacles to Transition are more rooted in perception, and a sense that Transition is something someone else does, than in a reality TTT can do anything to affect.

Another obstacle to resilience that emerges from the focus groups is the lack of affordable housing. As one participant in the work and skills focus group put it, "if you want to have relocalisation and have us all growing vegetables in the allotments and having local things you have to have the people, and also, housing for the young people. It used to be that they had to go north of the A38 (to find affordable housing). Now they can't afford them in Ivybridge!" This echoes the results of an Oil Vulnerability Audit carried out by TTT on Colourworks, a local printer, which identified the key vulnerability that rising oil prices would show up in the business was the fact that all but one of their key workers lived in Torquay or Paignton because they couldn't afford to live in Totnes, and if it became unfeasibly expensive to drive, they would have no staff. It became clear, argues Fiona Ward (2010:pers.int.) who conducted the audit, that the lack of affordable housing in the town added to the town's overall oil vulnerability.

This linking of oil vulnerability, housing and resilience is echoed by Spratt et al. (2010) who argue that a key strategy for building resilience is a 'National Housing Bank' which would "offer homeowners the opportunity to transfer a portion of their mortgage debt into equity and paying social rent on the balance" (ibid:7). Likewise, they promote the concept of Community Land Trusts (CLTs) as a way of enabling communities to take ownership of their own developments. Measures such as these would go some way to reducing the vulnerabilities identified by Ward.

7.5. 'Transition Together', 'Transition Streets' and the Totnes EDAP.

As a community process designed to facilitate and catalyse community resilience, what tools has TTT developed to enable this? One of the most effective thus far has been 'Transition Together'²², developed by TTT during 2009, modelled on the Global Action Plan and other home/group-based behaviour change programmes. The need was identified following on from an evening class this researcher taught, called 'Skilling Up for Powerdown', after which groups began to meet as 'home groups', and wanted some structured, practical approach to work through. Transition Together is a seven week programme that people do with neighbours, looking at energy, water, food, waste and transport and leading to each participant developing their own personal Practical Action Plan (a promotional flyer for Transition Together can be seen in Figure 7.5).

Enthusiasm for this approach emerged from the intensive interviews. For TC2, Transition Together provides "the most practical example" of how people can get engaged with TTT. He continued, "some people are very cynical. They say "oh Transition never does anything, who the bloody hell are they?" But if you say, "OK, but do you want to get people out of fuel poverty? Do you want to raise the 6% of people over in Bridgetown who are actually destitute and can't afford to heat their houses?"

²² <http://www.transitiontogether.org.uk>

Transition Together



Cut your household bills with this new programme that offers straight-forward, practical advice to help you...

- Reduce your energy and water costs
- Understand better these times of change and uncertainty
- Reduce your impact on the environment
- Have fun, make friends and save money

Pay nothing – this programme is free (for the first 100 participants!)

"Firstly the handbook is very useful as a reference; secondly, working through it with others stimulates ideas, shares experiences and provides an incentive to change the way we do things; thirdly working through this with neighbours has helped us to make new relationships which is more than a bonus!" Carole.

This opportunity is currently only available to residents of Totnes and the neighbouring parishes within the district. Offered by Transition Town Totnes and supported by Calouste Gulbenkian Foundation and the Big Green Challenge Plus.

Would you like to update your house to make it more energy efficient and cheaper to run, but you're not sure how to go about it?

Are you interested in how simple changes to your lifestyle would reduce your environmental impact, but you're not sure what to do?

Are you concerned about these changing times and what they mean for you, your family and your plans for the future?

Transition Together helps you build your own Practical Action Plan. It cuts through the massive amount of often confusing information that's out there, and provides you with reliable facts and practical tips from the experts. It provides local information relevant to all of us living here in Totnes and District.

Designed for you, your home and your street, it enables you to take simple, practical steps with your neighbours, your friends and your family.

Transition Together enables making effective changes easier and much more enjoyable. It will save you money and bring you and your community closer together.

The Practical Action Plan

**for YOU
your HOME
your STREET
your FRIENDS
your FAMILY**

Figure 7.5. Promotional flyer for Transition Together, Totnes, late 2009 (Source: Transition Town Totnes).

Now those people are in a difficult position, because if they don't support Transition, they're actually denying the ability to better the standard and quality of life for the community in Totnes, and they'd be seen to be incredibly selfish about it". One interesting indicator that emerged from the Focus Groups regarding the 'Transition Together' initiative was how the street that held the first 'Transition Together' pilot, Copland Meadow, has already created a reputation that had arisen from its involvement in the scheme. One member of the work and skills focus group, who lives in a different part of the town, told the group, "in Copland Meadow, that little area, they actually have got the wartime spirit, and they have street parties, like a little village".

The following data refer to the first four completed Transition Together groups for which data gathering has been completed:

Carbon and financial savings so far

Total carbon savings pa: 38.9 tonnes
Total financial savings pa: £19,236

Average carbon savings per household pa: 1.2 tonnes
Average financial savings per household pa: £601

Projection - by the time all 35 groups or 278 households have completed the programme by end of Round 2 in March 2011:

Estimated total carbon savings pa: 338 tonnes
Estimated total financial savings pa: £167,109

The figure for financial savings for the first four groups, £19,236, is best viewed in the context that the costs thus far for running Transition Together has been £22,500.

Table 7.7. Initial carbon and financial savings from the first four completed 'Transition Together' groups (Source: Ward 2010:pers.comm).

During September and October 2009, a group from TTT, this researcher included, wrote and submitted a bid to the Department of Energy and Climate Change's 'Low Carbon Communities Challenge, which proposed a project called 'Transition Streets', which included the following 4 elements, described in the application;

1. **Behaviour Change:** to support deep cultural and behavioural change, TTT will initially select 15 streets, involving a minimum of eight households from a wide cross section, to participate in our successful programme, Transition Together. This programme, designed to inspire practical change at the community level, successfully piloted in Totnes, offers quantifiable reductions in energy consumption, food, transportation, water and waste. This ensures households have achieved all affordable reduction measures and have the intrinsic motivation and social support to take them to the next stage.

2. **Energy Efficiency:** on commencing Transition Together, householders will fill in the Home Energy Check form provided by the Energy Savings Trust (EST) and receive a bespoke home energy audit. They will apply for highly subsidised energy efficiency measures through our partnership with SHDC's (SHDC) 'Cosy Devon' scheme, overseen by Energy Action Devon (EAD), including loft and cavity wall insulation, and in some cases, secondary glazing and external wall cladding. EST will provide us with baseline and completion data for the research element of this part of the project.
3. **Renewable Energy:** one participant from each Transition Street will complete training in assessing suitability for household microgeneration, offered by Devon Association for Renewable Energy (DARE), and participants' houses will be assessed. If houses are suitable for solar PV we will offer £3000 towards solar PV installations along with significant savings on the unit cost of systems due to bulk purchase and upfront payment to a solar PV installer. For low income households SHDC will offer further grant aid and low interest loans through their partnership with Wessex Reinvestment Trust. Houses not suitable for PV will be encouraged to consider alternative forms of microgeneration. DARE will provide before-and-after energy data for each house as part of the research element of the project.
4. **Community Awareness:** Totnes Civic Hall is central to life in the town. In partnership with Totnes Town Council (TTC), SHDC and Devon County Council (DCC) we propose an energy retrofit of this building with our matchfunding to the tune of £50,000 to provide solar PV. The savings thus generated will be used to support further projects, with a public digital display showing the significant energy savings being made. In addition, 'Open Streets' event will showcase some of the upgraded houses so that the public can see what the project has achieved.

Transition Streets was launched in January 2010, and by April 2010 the first 18 streets had been selected. The project intends to get photovoltaic installations onto 5% of roofs in the town, as well as onto Totnes's Civic Hall. It is very much

conceived as a research project designed to assess Transition Together's ability to enable behaviour change that goes deeper than previous government initiatives.



Figure 7.6. Panorama of Totnes town showing the Civic Hall with its new photovoltaic roof installed as part of the Transition Streets initiative (Source: Lou Brown/Transition Streets).

In terms of planning strategically for the rebuilding of resilience as a community-wide design process, the key activity undertaken thus far by TTT has been its 'Energy Descent Action Plan'. In the '12 Steps of Transition', the model used by Transition groups (Hopkins 2008) 'Create an Energy Descent Action Plan' (EDAP) is the last of the 12 steps. It aims to draw together the work undertaken so far into what is, in effect, a resilience plan for the settlement in question, a community-generated vision of a relocalised world, accompanied by practical steps by which to reach it (see Figure 7.2).

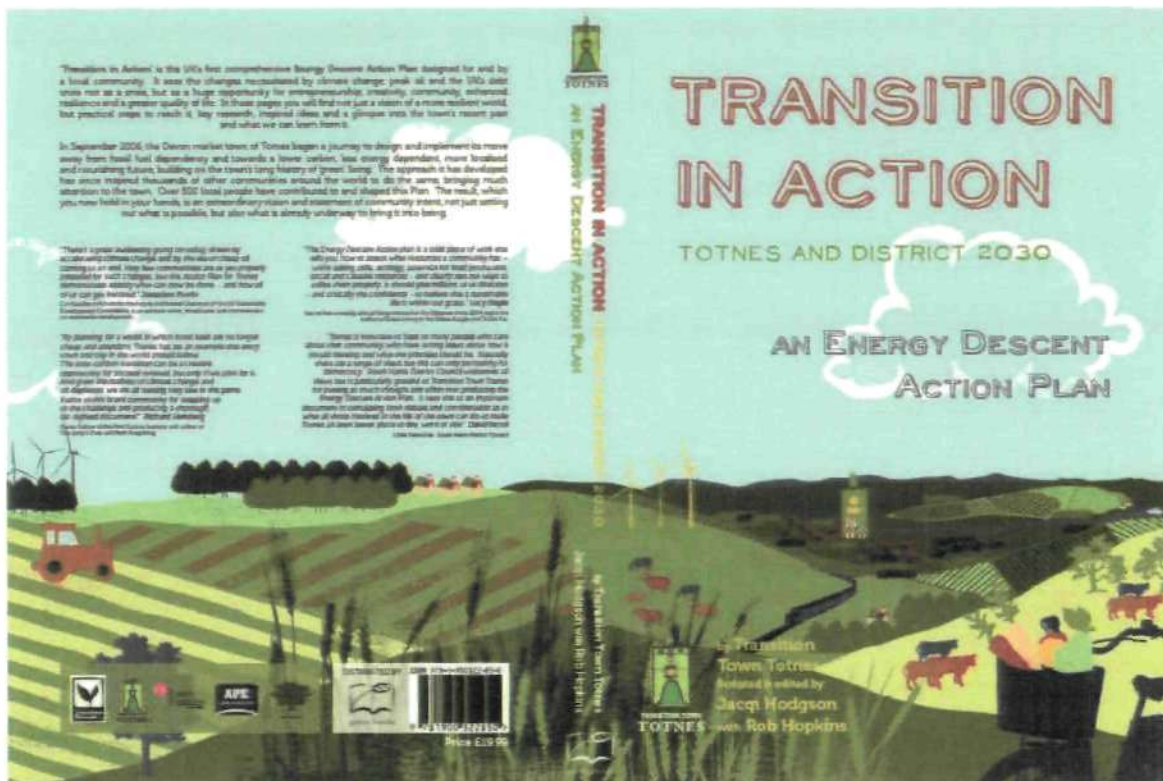


Figure 7.7. The front cover of the Totnes and District EDAP (Source: Hodgson & Hopkins 2010).

The process draws from different tools, such as the Natural Step's focus on backcasting (Cook 2004) and visioning exercises (Hopkins 2008). The Totnes and District EDAP was published by TTT in April 2010, with some of the research overlapping with the preparation of this thesis. The process employed a number of tools developed specifically for this project, and had 7 distinct stages (Hodgson & Hopkins 2010):

1. **Developing a Framework:** background research, identifying key local players, research, the survey of 220 households
2. **Key Tools:** Creating materials and tools, such as the Transition Timeline (a 15 metre long timeline from 2009-2030, used to 'harvest' visions of the future) and other visual materials

3. **Engage the Community:** this built on the work of TTT thus far, and involved talks and workshops for a wide range of organisations, as well as meeting relevant local people
4. **Public Launch:** held in September 2008, launched by the Mayor of Totnes and the CEO of SHDC, a cabaret style event with activities and exercises
5. **Public Workshops:** in two rounds: the first round of 9 workshops focused on visions of the future and the assumptions underpinning them, the second round used those visions as a springboard for 'backcasting', setting out the practicalities of moving towards those visions (this stage employed some of the scenarios explored in 3.5.)
6. **Backcasting on Strategic Themes:** this included an exhibition in the Civic Hall and engaging with local schools
7. **Drafting the EDAP and Consultation:** here a working draft was created which was reworked by the TTT working groups and then opened up for widespread consultation with the public as well as with experts in particular fields. This process led to the final draft which was then published as well as being accompanied by an online version (www.totnesedap.org.uk)

The EDAP draws together many of the strands identified in this thesis, with a practical focus on Totnes and District. Aside from conceiving itself as a practical drawing together of the concepts of resilience and relocalisation, it also explores the concept of 'resilience indicators'. It was launched in May 2010, the Chair of the local Chamber of Commerce describing it as "the single most important book about Totnes yet published" (Hopkins 2010a). It is estimated that over 500 people contributed to the development of the EDAP, although little is known of the degree to which it managed to engage people who had no previous engagement. No additional research has yet been conducted with regards to the extent to which it has been read within the community. The final document, running to over 300 pages, is perhaps too dense for widespread

consumption. However for TTT, it provides a clear and practical template for the next steps forward, particularly in identifying a number of key social enterprises vital to the successful relocalisation of the local economy.

7.6. The concept of 'Resilience Indicators'

Economically, Totnes could be said to have avoided the worst excesses of what the New Economics Foundation has dubbed the 'Clone Town Britain' phenomenon prevalent across the country. The representative of Totnes Chamber of Commerce in an in-depth interview, told me why he thought that made the community more economically resilient:

"I've always kept on my toes (as an independent trader) and as an independent I can make an assessment of what's going on and change things. That's what independents can do. Multiples can't. It all comes from head office. Independents can send their wife out to work. Independents can work at midnight for no pay. Independents can do all those things. Keep on their toes and keep the place going and they do. And that's partly why I fight for independents above anybody else because I know they do this stuff and I know they get ill from doing it, and they run up debts. But they keep going and they keep people coming into Totnes, and they keep the employment going and they maintain the fabric of the town because they pump millions into what the town looks like. Not a penny of investment from the council".

7.4.3 offered the unexpected conclusion that, in terms of skills and adaptability, the community of Totnes and district could already be seen as relatively resilient, but how might the wider resilience of the area be measured longitudinally?

This thesis has argued that resilience needs to be viewed in wider context than, for example, the CCE's 'Community Resilience Manual' (CCE 2000) with its focus on economic resilience, or the Resilience Alliance's (2007a, 2007b) 'Resilience Assessment' with more of a focus on ecological resilience. Building on the previous chapters of this thesis, this section attempts to set out indicators by which one might ascertain levels and trends in resilience longitudinally. Kasser (2010:pers.int) speculates:

"...if I wanted to measure the progress of a community and how it's moving along, what I would focus on is whether people felt that their psychological needs were well satisfied within the community, and there are measures for that that could be adapted at least. So, how safe do I feel in my community? How much do I have the chance to feel competent in my community? How many barriers do I encounter in my attempts to satisfy these needs within the context of my community.

I think some of the other things you'd obviously want to be looking at are attendance at meetings and actual social networks within the community. How much cohesion and interaction is there? How many neglected people are there? You'd expect fewer neglected people and you'd also expect fewer of the shining star people – you'd want more egalitarianism. Also, energy use and all the rest. But even funny things like obesity rates. If people are walking more they'd probably be losing weight and be healthier".

The concept of resilience indicators has been explored, in outline, by other research. The New Economic Foundation's 'National Accounts of Wellbeing' initiative included a resilience indicator, which it based on the European Social Survey, measuring "the extent to which people are able to deal with life's difficulties" (NEF 2010:unpaginated). In its survey, Norway emerges as the most resilient nation, the Ukraine as the least. A 2008 report by Sivell et al.

looked at the concept of resilience indicators in relation to climate change in South East England, in which the authors distinguish between individual and collective resilience. Individual resilience, they argue, is influenced by a wide range of factors, including:

- poverty
- dependence
- disposable income
- location
- adaptability
- state of housing (including tenure)
- awareness

Collective resilience, they argue, is influenced by another range of factors, including:

- resources (GDP)
- institutional networks and structures
- inequality
- geography
- *economic structure*
- landscape
- ecology
- governance (in particular coordination between various actors)

A study by Briguglio et al. (2009) looked at economic resilience and how it might be measured on a national level. It integrated four aspects of economic resilience, namely macroeconomic stability, microeconomic market efficiency, good governance and social development. It identified Iceland as the most economically resilient nation, and Ireland 11th (out of 86 nations). Recent events show that neither nation has demonstrated great resilience in the face of the economic turmoil of the past two years, suggesting that the authors'

analysis of the data must have been flawed, or their analysis was incorrect, or perhaps it reveals the more general weaknesses of integrating individual indicators into overall assessments.

None of these indicators, however, frame resilience in the context of peak oil and climate change. As part of the Totnes EDAP process, each TTT working group, whilst preparing its section of the plan, drew up around 10 'resilience indicators' which could, over time, indicate whether or not the community was moving in the direction set out in their section of the EDAP. In parallel to this work in Totnes, New Economics Foundation (Cox 2010) has been developing an 'Outcomes Framework' for sustainable local economies, looking at what resilience means in a community setting, and how it might be measured. As a way of ascertaining the strengths and weaknesses of the Totnes indicators (Hodgson & Hopkins 2010), they were inserted into the NEF framework to identify gaps and areas neglected in the TTT indicators, as shown in Figure 7.8. What emerges is that the Totnes indicators, generated from a community process rather than a planner/economist-led process, are strong on the practical aspects such as food and energy, but are far weaker on working with established businesses, social enterprise and indicators relating to governance, that is, the community indicators are skewed in a particular direction. The resultant merging of the two sets of indicators offers a useful set of indicators that could be returned to every two years to assess progress towards resilience.

NEW SUSTAINABLE LOCAL ECONOMY

Health & Happiness: High levels of well-being within the biosphere limits

Positive local economic outcomes		Positive social outcomes			Positive Environmental Outcomes		
Responsible Micro Enterprise	Positive Local Money & Resource Flows	Assets Base & Enabling Environment	Public Sector and Large Business Responsiveness	Community and Civil Voice Capacity	Environmental Sustainability	Interdependence	
Outcomes	Diverse & vibrant range of responsible businesses and enterprises responding to market demands to create positive social, economic & environmental outcomes	Increased level of effectiveness in use of money and resources	Strong local economic asset base (attitude, skills, knowledge, physical, financial services, natural) and supportive enabling environment	Public and business bodies working to actively strengthen & invest in the local economy to create positive social, economic & environmental outcomes	Strong leadership, activism, participation, cohesion, capability & resilience of individuals & groups	Positive social & economic change with ecological efficiency. Sustainability and reduced community environmental footprint	Increased understanding of economic, cultural and ecological interconnections that link communities, span the globe and impact on the future.
Indicators of Res	<ul style="list-style-type: none"> • Range of large, medium & small enterprises producing goods and services sustainably. • Level of transition from informal to formal sector. • Range of stable and growing sub-sectors, some established, others responding to new demand • Range of social and private actors in enterprise • Local investment and re-investment opportunities • The number of new business start-ups that are about making everyday household objects, at affordable prices, yet which incorporate art • Number of Transition- 	<ul style="list-style-type: none"> • Local multiplier effect of businesses (i.e. up and down stream local money flows) • Level of household expenditure spent locally. • Level of local government and schemes budgets spent locally • Local (re-) use of waste, energy and resources • Level of resource efficiency • Degree of adverse social impact in the community. • Degree of adverse environmental impact in the community • Amount of inward investment focused on Transition-related projects 	<ul style="list-style-type: none"> • Percentage of population with basic food production skills (66% in 2009) • Percentage of the population who feel confident in cooking with fresh produce • Number of people who feel they have access to good advice, skills and retraining in basic food production • Percentage of land (rural and urban) under food production • Percentage of people who feel well informed about energy issues • Percentage of people concerned about energy security/climate change • Percentage of people with regular access to a car (85% in 2010) • Percentage of people 	<ul style="list-style-type: none"> • Public bodies' demonstrated ability to listen and act on the community's expressed desired outcomes reflecting these in master-planning and budget setting • Level of co-production in the design and delivery of public services. • Degree of all sector co-ordination & mutual respect, consensus and shared vision • Responsiveness of economic development partnerships to community priorities for sustainability & action • Responsiveness of business to support sustainable local economic development • Public and private body level of volunteering in informal support networks within community • Amount of money distributed by SHDC through Participatory Budgeting 	<ul style="list-style-type: none"> • Number of active social entrepreneurs, social enterprises and local voluntary sector organisations. • Volunteering from within and by the community • Ability of individuals & groups to work together & resolve conflict • Political voice, space, and equity given to community sector • Access to knowledge, contacts, reciprocal networks, resources & funds to make choices and act effectively • Engagement in debate, shaping the continuing debate, taking control & action • The number of public art works commissioned each year • Degree to which people 	<ul style="list-style-type: none"> • Level of recycled materials • Land-fill rates attributable to local business and the community • Community, business and individuals awareness & consideration of triple bottom line impact of decisions • Mobilisation of under-utilised resources within a community – through resource sharing mechanisms • Level of renewal energy use locally • Biodiversity indices • Level of restoration / creation of green infrastructure • Level of community access to green spaces. 	<ul style="list-style-type: none"> • Degree of linkage between community and outside • Diversity of actors in the network: action focused, strategic, connectors • Access to knowledge, contacts, and reciprocal networks

	<p>themed businesses moved from concept to investment readiness</p>	<ul style="list-style-type: none"> • Amount of money invested in 'Totnes Bonds' • Percentage the local community spends on locally procured businesses, goods and services • Percentage of major employers that are locally owned • Ratio of local small businesses to the local population • Number of Totnes Pounds in circulation 	<p>who walk at least 10 minutes daily</p> <ul style="list-style-type: none"> • Percentage of children who walk or cycle to school • Percentage of people who walk or cycle to work • Percentage of people who use public transport • Distance driven each year • Overall split of journeys between walking, cycling, public transport and car • Number of second homes let through 'Homes for All' scheme • Number of builders that have undertaken 'Construction in Transition' course • Amount of energy produced by domestic buildings in Totnes and district • The value of community owned assets (land, buildings etc.) • Percentage of people who, when asked, state that they feel confident in a range of skills 		<p>feel adequately included in public consultation processes on major planning decisions that affect the town</p> <ul style="list-style-type: none"> • Degree to which people feel it is hard getting their voice heard by those who make decisions that affect life in Totnes • Degree to which people feel that in the event of a crisis, the community of Totnes would pull together and work together • Degree to which people feel that the sense of community they feel from their neighbours has decreased over the past few years • Degree to which people would describe their outlook as optimistic • Number of children killed or seriously injured on the roads 	<ul style="list-style-type: none"> • <i>Availability and uptake of sustainably sourced goods and services.</i> • <i>Level of investment in ethical funds.</i> • Percentage of food consumed locally which has also been grown locally • Total km of hedgerows • Monitoring of key bat species • Cleanliness of main waterways in the area • Number of people actively involved in nature conservation • Percentage of energy produced from local renewable sources to meet local demand (excluding domestic) • Percentage of buildings with solar hot water collectors • Percentage of homes that have been retrofitted to maximum possible standard • Average depth of roof insulation • Percentage of students who reach 16 with a firm understanding of climate change and other environmental issues, as well as being familiar with practical solutions 	
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Table 7.8. Suggested Resilience Indicators for Totnes and district. (Source: Totnes-generated indicators from Hodgson & Hopkins 2010, overlaid onto Cox (2010), original indicators shown in italics).

Note that the large majority of the Totnes indicators fall into the 'Asset Base Enabling Environment' section and the 'Environmental Sustainability' section. The NEF model offers a useful framework for identifying the elements that a community process such as an EDAP tends to ignore. The areas in which those indicators generated by the community are weakest are those usually more the domain of Council development planning. This perhaps makes the case that a genuinely rounded process of community resilience needs input not just from the community, but also from the local authority. This raises many of the challenges discussed in Chapter 6 in terms of the degree to which a predominantly conservative local authority with a weak position on climate change could meaningfully engage with such a process. It suggests that an EDAP process is effective at engaging communities and generating visions, ideas and practical steps, but has a partial focus, an observation that could help future EDAPs to be more rounded. While both groups could create and monitor such indicators, issues of governance once again emerge as vital.

7.7. Social Enterprise: the key to stepping across from thinking to doing?

"While innovation is seen as being crucial to regional and national success in current policy frameworks, the current discourse on innovation does not sufficiently cover the types of social and community innovations that may form crucial responses to future shocks. Therefore, what is required is neither a re-creation of past approaches to innovation, nor a continuation of the current model, but rather new approaches to communicating innovation that are driven by values, and notions of well being and resilience, rather than seeing innovations as primarily a driver of economic growth".

(Haxeltine & Seyfang 2009:18)

If, as was speculated above, Totnes actually has far more resilience in place at the community level than would have been hypothesised (as well as some key vulnerabilities, see Table 7.9.), it could be argued that a key step is to enable businesses that can make localisation economically viable. This section explores the fifth objective of this thesis, whether social entrepreneurship can be an effective way of achieving relocalisation and resilience, more than traditional activist approaches such as lobbying and campaigning. TTT, in terms of the Transition model, the '12 Steps of Transition' (see Table 2.3), has now completed the Transition process with the publication of its EDAP. The question arises, 'what next'?

- Large majority of food comes from 2 supermarkets with vulnerable just-in-time distribution systems
- Many people have to travel outside of the area to work, mainly Exeter, Plymouth and London
- All electricity needs dependent on the national grid
- Schools have large catchment areas which increase liquid fuel dependency
- High house prices and low average wages
- High levels of second home ownership
- Very little key food processing infrastructure (abattoirs, mills etc.)

Table 7.9. Some key vulnerabilities of Totnes and district (Source: the author).

The Transition Handbook briefly explored what might follow "beyond the twelve steps", offering that "once you reach that stage, your Transition initiative changes and becomes, in effect, a relocalisation agency, whose job it is to implement the EDAP". Since then, more thought has gone into "Step 13". Indeed, much of the thinking on this has emerged from the process of preparing this research. The suggestion (Hopkins 2010b) is that it takes the form of promoting of a culture of

social entrepreneurship as the vehicle for turning ideas into sustainable, viable livelihoods. .

Stepping up from a grassroots organisation to promoting and establishing viable businesses is clearly a big step. Seyfang (2009:1) writes that "little is known about the nature of and success factors for the development and diffusion of 'bottom-up' (often social) innovation for sustainability emerging directly from communities". TTT is clearly a 'grassroots initiative', defined by Seyfang and Smith (2007) as:

"networks of activists and organisations generating novel bottom-up solutions for sustainable development and sustainable consumption: solutions that respond to the local situation and the interests and values of the communities involved. In contrast to mainstream business greening, grassroots initiatives operate in civil society arenas and involve committed activists experimenting with social innovation as well as using greener technologies". (Seyfang & Smith 2007:585)

While such initiatives can generate groundswells of enthusiasm and interest, they also face significant challenges. An initiative like TTT may generate an EDAP, but how to implement its findings? Middlemiss & Parrish (2009:1) observe that "volunteers can face challenges in running grassroots initiatives for sustainability, including hostility from local people, difficulties in securing funding, and 'burn out' as the strain of volunteering with limited support takes its toll". For Seyfang, the challenge is specifically one of ability to scale up. "Their small scale and rootedness makes them difficult to scale up and replicate, and their ideological basis can result in value clashes with mainstream settings, resulting in difficulty

transferring ideas and practices” (Seyfang 2009c:585). Yet their potential as ‘laboratories of change’, or as Leggett (in Hopkins 2008) puts it, “scalable microcosms of hope” is increasingly being recognised, for example, in the Department of Energy and Climate Change (DECC)’s Low Carbon Communities Challenge, in which TTT was one of 20 national finalists. For Middlemiss & Parrish (2009:2), “grassroots initiatives offer an opportunity to experiment with new practices and norms that may then become accepted more generally in society”.

The exact meaning of the term ‘social enterprise’ is contested: Westall (2002:6) writes that “the easiest way out of this conundrum is generally pragmatic – “you know one when you see one”, “it’s actually a way of working rather than a distinct category” and “let’s not spend too much time discussing definitions”. Emerson and Twersky (1996) identify the factor that differentiates it from ordinary enterprise and business culture as its insistence on the ‘double bottom line’, giving equal weight to social return alongside economic return. To this can be added environmental issues and sustainability, for which Elkington (1994) coined the term ‘triple bottom line’. Dart (2004:413) identifies the importance that has become attached to social enterprise, arguing that it is “afforded a status of – if not quite a panacea – then at least a significantly important emergence in the societal management of key social needs”. There is indeed a great deal of interest in the concept, and many organisations are now established to promote it, and the new UK government has made it a key aspect of its ‘Big Society’ programme.

Spreckely (1981) traces the culture of social enterprise, as businesses established with the aim of furthering social or environmental goals, back in English history to Winstanley and the Diggers in 1649, the Co-operative movement of the mid 19th century and the Trades Union movement. One of the more recent definitions is used by Future Builders, an organisation set up to provide financial support to the Third Sector: "a business or service with primarily social objectives whose surpluses are principally reinvested for that purpose in the community, rather than being driven by the need to maximise profit for shareholders and owners". In terms of defining what is distinctive about the concept, Social Enterprise London (2001) set out what they regarded as the three main features of social enterprise:

Social enterprises are businesses that trade in the market in order to fulfil social aims. They have three common characteristics:

Enterprise oriented: *they are directly involved in the production of goods and the provision of services to a market. They seek to be viable, trading concerns, making a surplus from trading*

Social ownership: they are autonomous organisations with governance and ownership structure based on participation by stakeholder groups (users or clients, local community groups, etc.) or by trustees. Profits are distributed as a profit sharing to stakeholders or used for the benefit of the community

Social aims: they have explicit social aims such as job creation, training and provision of local services. They have ethical values including a commitment to local capacity building. They are accountable to their members and the wider community for their social, environmental and economic impact.

To these features, Johanisova (2005:22) added 'economic localisation', which she defines as "local production for local consumption, using local resources and capital". While the concept of social enterprise has a long history, the concept of the 'social entrepreneur' is more recent. It was first used in the 1960s and 70s (i.e. Banks 1972), before being popularised by others, such as Leadbeater (1997) and Drayton (2002). The Skoll Foundation (2009:unpaginated), one of a number of organisations that promote social entrepreneurship, state what they mean by the term:

"Just as entrepreneurs change the face of business, social entrepreneurs act as the change agents for society, seizing opportunities others miss by improving systems, inventing new approaches and creating sustainable solutions to change society for the better. However, unlike business entrepreneurs who are motivated by profits, social entrepreneurs are motivated to improve society. Despite this difference, social entrepreneurs are just as innovative and change oriented as their business counterparts, searching for new and better ways to solve the problems that plague society."

For Leadbeater (1997:13), social entrepreneurs matter for two reasons, firstly because they address the need to tackle a "range of social problems which the welfare state is ill-equipped to tackle", and secondly the economic reason that "the only hope we have of maintaining the quality of welfare while we reduce its costs". Dees (1998:1) believed social entrepreneurship "combines the passion of a social mission with an image of business-like discipline, innovation and determination", seeing them as simply "entrepreneurs with a social mission".

He went on to identify what he saw as the roles played by social entrepreneurs:

- Adopting a mission to create and sustain social value (not just private value)
- Recognising and pursuing new opportunities to serve that mission
- Engaging in a process of continuous innovation, adaptation and learning
- Acting boldly without being limited by resources currently in hand and
- Exhibiting a heightened sense of accountability to the constituencies served and the outcomes created (Dees 1998:4)

Drayton (2002:7), founder of one early organisation to promote social entrepreneurship, Ashoka, distinguished between conventional entrepreneurship and social entrepreneurship: "social entrepreneurship extends beyond the definition of entrepreneurship by its emphasis on ethical integrity and maximising social value rather than private value or profit". Davis (2002:6) focused instead on what the two forms of entrepreneurship have in common: "both types of entrepreneur envisages a systemic change, identifies the jujitsu points that will allow him or her to tip the whole society onto this new path, and then persists and persists until the job is done".

For Drayton (2002:7), what mattered was the wider replicability of the entrepreneur's idea and its potential wider impact: "Is the new idea, once demonstrated in one place, sufficiently new, practical, and attractive for practitioners in the field to want to copy it? And, assuming that it does spread, how big and beneficial will its impact be?" A study by Bygrave & Minniti (2000) concluded that entrepreneurial activity tends to concentrate geographically, and is often linked to the local amount of entrepreneurial activity. Their findings

support the idea that once initiated, a culture of social entrepreneurship can be self-perpetuating. "Cultural traits, in the form of role models and enduring community characteristics, influence new individuals entering the economy and push them towards choosing entrepreneurship rather than other income-producing activities independently of their ex-ante preferences and constraints" (ibid:34).

If it is the case that well managed, financially viable, locally owned social enterprises, dedicated to delivery of the core projects identified in the Totnes EDAP, could be the key to the relocalisation of the area, what might the creation of a culture of social entrepreneurship look like in practice? Davis (2002:27) argued that:

"creating an entrepreneurial culture is a multi-faceted, organic phenomenon. As culture is a highly dynamic, synthetic web of factors and expressions, cultural shifts occur when a tipping point is reached. To move from a culture that undervalues entrepreneurship to one that does, involves shifts in attitudes, expectations and perceptions among people of all ages. One of the most difficult challenges is overcoming widespread skepticism. In the midst of media that is overwhelmingly tragedy and conflict-oriented, it is very rare to showcase constructive people who are optimistic and exuding a positive energy".

In the same paper, she elaborated on what that might look like in practice, putting an emphasis on the role of networks:

"Success breeds success. Role models are important. Learning from other's mistakes is helpful. Knowledge networks are catalytic. Angel investor networks are critical communities can and have created and fostered

entrepreneurial cultures that help to produce greater numbers of business entrepreneurs. The same seems to be true for social entrepreneurs. And when bridges are built between business and social sectors, innovation increases, productivity is enhanced and new hybrids result" (Davis 2002:18)

Totnes is home to a branch of the School for Social Entrepreneurs²³, which trains and supports people with social enterprise ideas. Might one speculate as to the enterprise opportunities that arise from relocalisation? In a piece of work conducted in parallel to this thesis (Hodgson & Hopkins 2010), this researcher attempted to do that (see Table 7.10). This should be fore grounded with the observation that it is speculative and not based on any quantitative analysis. A more rigorous attempt at this would require the setting of boundaries to the area it covers. It does, however, offer a useful indication of what might be possible.

Employment Sector	Industry Type	Opportunities for Economic Development
Food Production/Land Use	Organic Farming	Farm workers, research and innovation, value adding and processing, retail, Community Supported Agriculture initiatives
	Textile Production	Farming, processing, manufacturing
	Organic Food Production	Training, freshwater aquaculture, organic gourmet mushroom production for food and medicines, intensive market gardening, food preservation
	Forestry	Timber for construction and a variety of uses, sawdust for mushroom cultivation, charcoal, wood gasification, coppice products, saps, tannin, bark mulch, education, training, food crops, fibre
	Urban Agriculture	Co-ordination, land access provision, edible landscaping consultancy, online tools for linking growers and consumers, large potential for commercial production, plant nurseries and propagation
	Gleaning	Apple harvesting and pressing, hedgerow drinks and other products, education
	Agroforestry systems	Design consultancy, planting and ongoing

²³ School for Social Entrepreneurs run franchised branches across the UK, one is based on the Dartington Estate. www.sse.org.uk

		management, selling of wide range of produce, long term enhanced timber value, courses, publications, research
	Schools	Edible landscaping, teaching, Education for Sustainable Development, food growing training, apprenticeships, bespoke Transition training programmes
Manufacturing and Processing	Recycling	Salvaging building materials, processing and reclaiming materials (bricks, timber etc), making insulation from waste paper, glass bottles into insulation
	Sustainable Industry	Renewable energy technologies manufacturing and installing, technology systems,
	Repair	Extending the life of machinery, building for durability
	Fabric	Processing of locally produced fabric, hemp, flax etc, making a range of clothing for retail, and repairs
	Scavenging	Materials reuse, refurbishing, resale to low-income families
Services	Healthcare	Holistic healthcare, research into effective herbal medicines, local herb growing and processing, training for doctors, apothecaries, nutritional advice
	Energy	Home insulation advice, energy monitoring, energy efficient devices, investment coordinators, sale of energy to grid or decentralised energy systems, producing wood chip/pellets for boilers, Energy Resilience Analyses for businesses
	Compost Management	Collecting, Managing, Training, Distribution, Education, potential links to urban food production
	Information Technology	Creation of effective software systems for energy management, carbon foot printing and much more
	Hospice services / bereavement	Hospice services, supporting families who keep relatives at home, green burials
	Financial Investment	Credit Unions, local currencies, mechanisms whereby people can invest with confidence into their community, Green Bonds, crowd funding
Government	Councils	Opportunity to organise efforts throughout region, and parishes
	Researchers	Opportunity to gather information from the many projects and enterprises underway.
Education and Design	Educators	Wide range of opportunities for supporting 'The Great Reskilling', developing Distance Learning programmes, training for professionals
	Sustainable Designers	Landscape architects specialising in edible landscaping, zero carbon buildings
	The Arts	Art projects documenting the Transition, installations, exhibitions, public art workshops, local recording studios, storytelling

	Transition Consulting	Working with businesses on energy audits, resilience plans, a range of future-proofing strategies
Personal / Group Support	Counselling	Personal 'Transition Counselling', group support, community processes
	Citizens Advice	Debt advice, housing advice, financial management skills, debt scheduling
	Outplacement/Redundancy Support	Support, retraining, ongoing support and training
Media	Print media	Local newspapers, small print run books on different aspects of the Transition
	Internet	Online retailing systems for local markets
	Film media	Online TV channels documenting inspiring examples of Transition in Action
Construction	Reskilling	Retraining builders to use local materials and green building techniques, improving awareness around energy efficiency in building, setting up local construction companies, rainwater harvesting systems, design and installation
	Materials	Creating local natural building materials, clay plasters, timber, lime, straw, hemp etc. Growing, processing, distribution, retail etc. Locally made wallpaper.
	Architects	Specialists in passivhaus building, local materials, retrofit advice
Transportation	Low energy vehicle fleets	Marketing, maintaining, renting, chauffeuring
	Bicycles	Selling, servicing, maintenance training, rental
	Rickshaws	Importing, servicing, taxi service, weddings etc.
	Biodiesel	Sourcing, processing, selling, training and advice
	Biomethane/Electric vehicles	Fleet management, sales, leasing, car clubs

Table 7.10 Employment Opportunities for a Post-Peak Oil Totnes and District (Source: author, after Chen et al. 2008).

When contemplating these potential new avenues for entrepreneurship, a major challenge emerges. These are businesses, organisations and livelihoods which could be seen as inevitably emergent, as the observable energy constraint of Korowicz's (2010) 'Oscillating Decline' becomes more apparent, but as Hirsch et al. (2005) argue, a post oil infrastructure has a long lead-in time, ideally 20 years, 10 years at the pace of a 'wartime mobilisation' (Brown 2006b), scale of

response. The key question is how to enable the emergence of businesses now that will be appropriate for a different economic and political environment? Rather than waiting for unavoidable crises to prompt relocalisation (as in North's 'Enforced Localisation'), one might conjecture that social enterprise as the vehicle for making real the new infrastructure advocated in an EDAP might be a key element to the successful 'intentional localisation' of communities such as Totnes and district.

7.8. Transition Town Totnes's ability to create parallel public infrastructure

The relocalisation approach set out above, it has been argued, can learn lessons from a past that was, in some ways, more resilient, but is very much about moving forward in ways that address present challenges. The term 'parallel public infrastructure' was coined by the Post Carbon Institute (Darley et al. 2005) to describe the building of new industries, services and livelihoods that a Transitioned world would require.

Several key elements identified in the Totnes and District EDAP stand close to being ready to move into being a reality. Some will now be explored, and in Table 7.11. are evaluated against Seyfang's (2009c:3) key elements of what she calls the 'New Economics' approach, as a checklist for assessing the key elements of any strategies for sustainable consumption. They are:

- Localisation
- Reducing ecological footprints
- Community-building

- Collective action and
- Building new infrastructures of provision.

The EDAP identifies six projects which are seen as key pieces of infrastructure for the Transition process. Firstly, the ATMOS Project²⁴, which aims to bring an 8 acre site adjoining Totnes train station into community ownership to develop it as a mixture of affordable ecological housing and a green business hub, as well as a showcase for radically low carbon techniques and technologies. The second is the Totnes Renewable Energy Society²⁵, which describes itself thus:

“The Totnes Renewable Energy Society, TRESOC, is an Industrial and Provident Society established to enable the community of Totnes and surrounding parishes to take charge of the development of our renewable energy resources and provide maximum benefit to the local economy. The Industrial and Provident Society structure allows for the democratic control of the company by the membership and provides a safeguard from takeover by large commercial interests”.

Shares will be available to residents of Totnes and district, of values between £20 and £20,000.

The Totnes Rickshaw Company²⁶, set up by local businessman Pete Ryland, runs three imported Indian rickshaws on biodiesel made from waste oil collected from local restaurants. The rickshaws are very efficient, doing 80km per litre. The scheme has struggled to get a licence from SHDC, but operates anyway, on a donations basis. It is in the process of setting up as a Community Interest

²⁴ <http://www.atmosproject.com/>

²⁵ www.tresoc.com/

²⁶ www.totnes.transitionnetwork.org/transport/rickshaws

Company (CIC). The Totnes Food Hub is an emergent TTT project, modelled on the Stroudco initiative²⁷ in Stroud. On the TTT website, Food Hubs are described thus:

“A Food Hub is managed and operated by producer and consumer members. Its aim is to provide a practical, friendly supply chain for small scale and family food enterprises, developing a model that enables producers and consumers to work for mutual benefit”.

Emerging from the TTT Building and Housing Group, Transition Homes²⁸ is a development of low-impact, low-cost homes for local people that centres on the close integration of housing and sustainable food production and features high energy efficiency and the use of local natural materials. The development will have a small carbon footprint and be self sufficient in energy and power, which will be generated by the use of renewable energy technologies and locally available fuel sources. It will be a conscious experiment in sustainable living; the lessons learnt and the research data collected will be documented and shared for the benefit of the community at large. A Community Land Trust has been set up in the form of a company limited by guarantee, to provide a benefit to the local community and ensure that the houses remain affordable in perpetuity, along with a not-for-profit development and construction company. Discussions are underway with a number of landowners in the area. Finally, the Totnes Sustainable Construction Company is a not-for-profit company limited by guarantee, whose stated aims are “sustainable design, construction and refurbishment with an emphasis on real affordability”. Emerging from the TTT

²⁷ <http://www.stroudco.org.uk/>

²⁸ www.totnes.transitionnetwork.org/buildingandhousing/home

Building and Housing Group, it aims to provide a service for construction projects with a sustainability focus, whether newbuild or retrofit.

	Localisation	Reducing Ecological Footprints	Community building	Collective Action	Building new infrastructures of provision
The ATMOS Project	Profits generated would be re-invested locally, inward investment options would be enabled, local skills base would be increased	The development would aim to be as low carbon as possible, both in use and during construction	Building methods would be utilised that allow entry into the workforce for unskilled people, there would be a community design process for the site, the development would provide community space for events, exhibitions, training and so on.	The site would be owned by a community interest company, and held as a community asset.	The development would seek to generate as much of its own energy as possible, and, through its focus on local materials, would generate many jobs and new infrastructures and businesses.
Totnes Renewable Energy Society (TRESOC)	TRESOC focuses on one of the key elements of relocalisation, putting in place community-owned, low carbon energy infrastructure.	Low carbon energy systems will reduce the energy-related ecological footprint of the area.	TRESOC will be owned by the community, and it constituted in such a way that at its first AGM, if the shareholders so choose, they can replace the entire board.	As a model for new inward investment, it represents a form of collective action that anyone can get involved with, regardless of time availability.	TRESOC are looking at a range of technologies, including anaerobic digestion, which enables new infrastructures of waste collection and processing.
Totnes Rickshaw Company	The project aims to imaginatively draw more visitors who often get no further into the town than the quayside to venture into the town, in particular to the less-visited Narrows. Rickshaw drivers accept Totnes Pounds, and the scheme provides a closed loop for local waste oil.	The biofuels used in the rickshaws have a very low carbon footprint, although the importation of the rickshaws from India may add to the initial carbon footprint of the scheme.	Local people are trained to work as rickshaw drivers, and the rickshaws are used increasingly by local businesses and events, such as the Ways with Words Festival at Dartington. Profits from the rickshaws will be used for the benefit of the local community, starting with the regeneration of the Rotherfold.	Totnes Rickshaw Company is being set up as a Community Interest Company.	The Totnes Rickshaw Company is starting to build the infrastructure for local biofuels production, working with the Sharpham Estate and starting to grow crops for oil.
Totnes Food Hub	The food hub would support local farmers and incentivise new	By focusing primarily on local food, it will enable people to considerably	The weekly hub days, where members come together to pick up their	The scheme will require input from volunteers, and will have a	The food hub concept, as developed in Stroud, is that a model is need in

	growers, whether commercial growers, or local people with surplus garden produce. It provides a vital link between producer and consumer that enables the creation of a stronger local food infrastructure.	reduce the part of their household's carbon footprint that arises from its food consumption. By sourcing locally and supplying locally it will reduce the need for both producers and consumers to travel.	food will become a social focus point, and the scheme will also connect people to those producing their food.	membership	order to facilitate the transition to greater provision of local food. It is a model designed specifically to enable the creation of a new infrastructure of food provision.
Transition Homes	The project would prioritise local materials and would seek to involve and train local people, as well as utilising local vernacular style in the building design.	The buildings would be built to the highest standards of energy efficiency, designed to minimise ecological impact in terms of materials sourcing, during the lifetime of the <i>building and in its disposal</i> .	Residents would be taken from the housing list, and would be invited to participate in the construction process.	Those living at the development would take a strong role in running it, and it would be designed to encourage community spirit and activities as much as possible.	Like ATMOS, above, Transition Homes would help to create economies of scale to make businesses producing local building materials viable, as well as bringing new people into the building trade.
Totnes Sustainable Construction Company	As with the ATMOS Project above, TSCC will seek to prioritise local materials where possible.	All their construction work will be based around the aim of reducing domestic energy consumption as well as the promotion of low energy building materials.	In the long run, TSCC aims to also offer training and reskilling in natural building techniques.	At this stage, TSCC isn't focusing so much on this, still being at the set-up phase of operation.	TSCC will seek to support the emergence of new industries promoting local building materials.

Table 7.11. Key social enterprises emerging in the Totnes and district, either as a result of the work of TTT or in parallel to it (Source: the author, drawing from Transition Town Totnes's website and Seyfang's (2009:3) 'New Economics' approach).

7.9. Conclusions

Chapter 7 moved beyond the focus of the previous two chapters to look at resilience in the context of individuals and communities. It looked at a particular subset of scenarios for the future, initially explored in 2.4.4, but which were discussed in greater depth with relation to which future scenarios Transition initiatives should be designing for. It concluded that the most likely result of peak oil would be Korowicz's (2010) 'oscillating decline', although the likelihood of a more rapid decline or collapse should also be borne in mind and held as integral to future planning. Can it be argued that Totnes in the past was more resilient than it is today? What lessons could be learnt from the most recent time when historically Totnes had a more localised food system and lived using much less energy than today? This was explored through oral history interviews, which were analysed through the lens of Walker and Salt's (2006) analysis of resilience, which highlighted that although some aspects of life, such as food production, diversity of land use, and the strength of the local economy, could be seen as far more resilient than today, others, such as the inhibition of innovation and the lack of social diversity running directly counter to resilience.

This discussion led to the question as to how to enable individuals to be more resilient, and what personal resilience means. The literature in relation to 'ego resilience' or 'personal resilience' was then explored, which found that the research currently reveals personal resilience as an element of healthy human functioning unless inhibited by psychological damage of some kind. It was then

explored whether the Transition model can be argued to increase personal resilience. Kasser (2010) raised the question whether Transition could also be seen as making people happier and healthier, and insights from the literature revealed that the Transition model, based on positivity, creativity and engagement, links well with the research on personal resilience. The survey conducted for this thesis revealed that Totnes could be seen as being a happier and more optimistic community than many, which gives rise to the question whether Totnes has engaged with the Transition model because it was already a happier place, or whether some of that has arisen from its engagement with Transition? Other factors that may play a significant role are the reported high levels of individual resilience, which is perhaps one of the qualities picked up by those who refer to it as 'unique' (see 4.5). It is also a relatively wealthy community, resulting in an increased 'can do' attitude.

What emerges is that the question of promoting personal resilience is as important an element in the building of overall resilience as the other aspects explored in the previous two chapters. The survey and the focus groups also revealed a far higher level of competence in a range of core skills than had been hypothesised, with, for example, over 66% claiming a good level of competence in food growing, a finding corroborated in the focus group on food. The obstacles to both personal and community resilience therefore emerged not as a lack of skills, optimism or personal resilience, rather a lack of time, the lack of affordable housing and the financial pressures many families currently find themselves under.

The focus then moved to the work of TTT, and what it is doing to conceptualise resilience in the context of Totnes, as well as the practical projects underway to enable the town to increase its resilience. A range of projects were outlined, and these were evaluated using Seyfang's (2009c) 'New Economics' approach to evaluate the extent to which they can be said to enable local sustainable and resilient economies. Tools developed by TTT such as its EDAP, the first community-generated plan for local resilience, as well as the concept of 'Resilience Indicators' were explored. Finally, the concept of social enterprise was explored, and its role in making the EDAP's suggestions a reality. Chapter 7's key conclusion is that community-driven sustainability initiatives must take personal and individual resilience into account and make it a centrepiece of their work. The Transition model, with its aim of modelling what 'engaged optimism' looks like as a mobilising force, would appear to be effective as a way of catalysing and building resilience within Totnes and, by implication, further afield, but it needs to place a greater emphasis on issues of governance and social entrepreneurship if it is to reach its ambitious goals.

Chapter 8. To what extent can lessons learned from the Totnes case study inform similar debates on energy descent pathways in other localities?

8.1. Key Findings

In 2008, when the Transition Handbook was first published, the Transition concept was at a very early stage. The model was presented as the '12 Steps of Transition' (Table 2.3) and the number of case studies was small. It was presented as speculative, offering practical tools and activities, and an invitation to be part of an iterative process. In the two years since then, Transition has evolved into what Seyfang (2009:16) calls "a fascinating social experiment", with thousands of communities involved and sharing their successes and failures as the model continues to evolve. Clearly though, the challenges facing the Transition approach are different at the time of the completion of this thesis than they were when the Handbook was published, as the approach, and the learnings from it, have evolved.

How has this thesis helped to understand where Transition finds itself, and where it might go from here? It was found that TTT has a high level of public profile, a good level of community support (albeit much of it aspirational rather than active engagement), and has evolved greatly as an organisation, from a handful of enthusiastic people in 2005, to a charitable organisation holding a number of projects and seeing social entrepreneurship as its next step forward. It was found that the obstacles to resilience were not an absence of practical skills and community cohesion, as had been hypothesised, rather issues of wider community governance and the ability to create viable social enterprises. It was found that the 'value-action' gap existed in Transition as much as in other

aspects of sustainability, high levels of awareness and concern around climate change and energy security issues failing to translate into widespread action. Although it is still early days for the TTT project, a sense came through this research that the work of TTT, and other related local organisations, has begun to change the way the town thinks about itself. One could argue that the stories it tells about itself have evolved, and that those new stories, in turn, inform the decisions it makes about its next steps. One key element identified for Totnes' recent increasing cohesion as a community (as evidenced by the community response to the Totnes DPD) was identified as the high preponderance of people in the community with a professional background, and time to spare, things more commonplace in wealthier and more 'post-materialist' communities.

A number of people have set out what they see as the challenges facing the Transition movement. Bailey et al. (2010:603) argued that Transition will need to be able to "withstand the shifts in scientific and political debates on peak oil", but this thesis has suggested that its wider focus on resilience rather than merely on peak oil, and on community engagement, in part, could be argued to address this. They also argued that Transition will need to "show identifiable results to avoid the accusation levelled at some other environmental movements of being long on principle but short on realism" (ibid). This research has identified that the Transition model stresses the need for 'Practical Manifestations' from an early stage (see Table 2.3), which TTT has a good number of (see Table 4.1) and also that TTT has started to make firm steps towards larger scale and more meaningful 'identifiable results', in particular with its 'Transition Streets' initiative (TTT 2010), but also in the number of emerging social enterprises described in 7.10.

Bailey et al.'s (2010:603) final suggestion was that Transition will need to "find new ways of influencing major corporations that have, so far, been noticeable absentees from relocalisation partnerships". This thesis has shown that the focus of local Transition initiatives, such as TTT, has so far been on local businesses rather than on corporations. Transition Training and Consulting²⁹ has, however, recently been set up by Transition Network for this purpose, of *aiding organisations and businesses to become less vulnerable and more resilient to oil price vulnerability, developing a number of innovative tools for so doing.*

This thesis has also identified how the Transition movement's understanding of resilience departs, in some ways, from that of the wider literature on resilience. Haxeltine & Seyfang (2009:18) summarised the Transition approach to resilience as "not (merely) one that indicates the capability to return to a previous state after a shock, but rather one that indicates the ability to transform in quite radical ways in the face of shocks and disturbances". For Haxeltine & Seyfang (ibid), whether Transition's take on resilience is exactly consistent with the wider academic literature on the subject was of secondary importance. They argued that:

"Transition has been framed in terms of building (or rebuilding) resilience in local communities. So far, the movement seems to have successfully used resilience as a motivating framing concept. The lack of specificity used in the framing of resilience has probably contributed to resilience being perceived as an appealing goal by the wide range of citizens who have become involved with the movement" (ibid).

²⁹ www.ttandc.org.uk/

They encapsulate what they see as the challenges going forward: "in moving forward to resilience building, what is needed is both an understanding of what resilience is in practice (for each specific case) *and* the ability to make it happen on the ground" (ibid).

This research has offered a number of insights into what resilience looks like in practice. It found that some useful insights can be gained from oral history studies of the 1950s into what resilience looked like then, as well as the ways in which there was a lack of resilience. It also found that a community process of trying to define what resilience is in practice, through the Totnes EDAP process and its development of 'Resilience Indicators', was strong on some aspects of resilience (local infrastructure, economics) but weak on others (governance, social enterprise, interdependence). These insights around resilience indicators will prove useful to the wider Transition movement.

In terms of how to make resilience happen on the ground, this thesis has provided a number of insights as to how TTT is moving this forward, from being based on a 'project support' concept, to strategic 'joined-up' thinking embodied in its EDAP process, emphasising the role of social enterprise. However, it also identified the potential obstacle that an un-engaged local authority can present to such a process, and how vital issues of governance are.

This raises questions of the degree to which Transition can continue to grow and broaden its impact and influence while maintaining an apolitical standpoint? As North (2010c:unpaginated) argued;

"Transition initiatives can therefore be seen either as inspiring, grassroots insurgencies developing new ways of living, or as ultra-liberal, utopian and

naive political practices with an extremely over-optimistic conceptualisation of the possibility of transforming the currently unsustainable economic practices associated with contemporary global capitalism”.

This research identified how TTT is working to alter the political debates in the area through showing what is possible and through taking the lead on a number of projects, rather than by confrontational engagement. The success, or otherwise, of this process of focusing on the *practice* rather than the *politics* of relocalisation will only be seen in the longer term, but early evidence from this research is that TTT has been relatively successful in changing the nature of the discussions and debates in the community, as well as in building the association of the community with these ideas. The acceptance speech of the winning Conservative candidate in the 2010 general election, specifically mentioned TTT (Ali 2010), and the inauguration speech of the new Mayor of Totnes in May 2010 stated that “one of the newest and liveliest community groupings is Transition Town Totnes which has raised the profile of Totnes, in fact made us famous all over the world, for pioneering approaches to climate change and peak oil” (Whitty 2010:unpaginated). TTT also held a well-attended ‘resilience hustings’ event in the run-up to the 2010 General Election. Clearly, TTT’s relationship with local politics still has a long way to go, and large projects such as ATMOS will necessitate engagement with local political processes. This study revealed how those engaged in Totnes politics at the District Council level struggle to represent the town’s perspective being only 4 out of 40 Councillors, often viewed disparagingly, for example their description as ‘fairies’. However, as Seyfang (2009:18) noted, “building resilience is ultimately a political process”, although the

extent to which Transition succeeds in meeting its ends without political engagement remains to be seen.

The Transition movement emerges from this research as having several key challenges if it is to continue growing as it has done thus far. It will need to continue the process of broadening and deepening engagement. This research showed that it has generated little engagement from those under 30, and the in-depth interviews raised concerns that TTT was 'preaching to the converted', appealing to 'the usual suspects'. The issue of diversity of engagement is a live one not just from Transition, but also in the environmental movement generally. Projects like Transition Streets, and the creation of meaningful livelihoods for local people will have a major impact on this, but clearly this is an ongoing priority.

Ultimately, the challenge for Transition will be how it scales from an assortment of niche community groups to having a meaningful impact on the regional and national scale. This research has shown the potential of one Transition initiative, but could a well-networked movement of local organisations could become a potent political force? There is an emergent understanding that the 12 Steps, used to communicate Transition, fail to reflect the depth of what is emerging in Transition. In the most obvious terms, the 12th step is 'Create an Energy Descent Action Plan', which it has now done, yet in many ways, its work has actually only just started. For this reason, the second edition of 'The Transition Handbook' will represent Transition using a very different model, based on Alexander's (1977) 'pattern language' model, which is hoped will better reflect the more interconnected, systems-thinking model into which Transition has evolved.

The findings of this thesis could be seen as supporting the thinking that Transition, in the sense proposed here, can be catalysed by community groups such as TTT, but its successful implementation on the scale discussed here will require these groups finding, through improved governance approaches, ways of working successfully together with local authorities, planning officers, local businesses and Universities/researchers. Through this case study of TTT, Transition initiatives can be observed to act as a dynamic catalyst, raising awareness of peak oil and climate change, and sparking a range of projects and enterprises, taking an element of risk that risk-averse local authorities are institutionally reluctant to do.

8.2. Lessons for Elsewhere

One of the key questions from the findings of this thesis is whether, given the extent to which Totnes can be argued to be 'unique', and clearly has a demographic, cultural, economic and political identity at odds with many other parts of the world, lessons learnt there can, in any sense, inform discussions about Transition in other places. Totnes is a community with a long history of alternative culture, a high 'post-materialist' population, which ranks highly on wellbeing indicators, and suffers relatively low levels of crime and social deprivation (although it has a wide gap between property prices and income, and the highest rates of mental illness of any town in Devon (DCC 2007)). Can any of the insights generated in this research be argued to have a wider relevance?

This might better be explored as two distinct questions:

1. Is Transition a model that could only ever work in rural market towns such as Totnes? Is the Transition model equally applicable in an urban context?
2. Is relocalisation an approach that could be scaled nationally?

These will now be explored in turn.

1. Is Transition a model that could only ever work in rural market towns?

Of the 20 first Transition initiatives, the large majority were in rural market towns. It has since expanded into cities, villages, islands and institutions. What is clear from the Totnes research is that TTT has been a powerful catalyst within the community, acting as a focal point for awareness raising and initiatives. It has brought an element of strategic thinking to what could have been seen previously as an array of unconnected projects, and earned a degree of credibility with local organisations. Scaling Transition to the city-scale presents many challenges. The EDAP process, for example, co-ordinated by one paid project worker supported by volunteers, took 20 months and was an enormous undertaking. On the scale of larger cities, this will become far greater, and perhaps the EDAP model needs to be rethought for larger settlements. This may explain why the approach developed by Transition City Bristol has been, after 3 years in existence, not to start an EDAP, but to work with the local Council to create a Peak Oil Resolution and the Bristol Peak Oil Report. Indeed the depth of the relationship built between Transition groups and their local authorities would appear to be much better in Bristol than Totnes, possibly due to the absence of a controlling Conservative presence on the Council. The role modelled by TTT, of running imaginative and playful awareness-raising events would work just as well in larger settlements, but many urban Transition groups struggle with the scale of their populations, issues of cultural diversity and maintaining momentum

(Seyfang 2009b, Smith:forthcoming). Many Transition city groups exist now, experimenting with applying Transition to the city context. However, these findings could be seen to establish only that Transition is successful at engagement, awareness raising and catalysing in communities with a high degree of 'post materialists' in their population, and, by extension, in places where people are already more resilient and with lower levels of trauma, as in hardships and psychologically damaging factors which impede innate resilience (Masten 2001). Few suggestions emerge from this research for highly deprived and divided communities. It may well be that some hybrid of more top-down approaches and the Transition model will emerge over time.

2. Is relocalisation an approach that could be scaled nationally?

The concept of *localism* featured prominently in the 2010 UK general election campaign (although environmental issues largely dropped off the agenda), but *localisation* is still something that is largely absent from political debates (the distinction between localism and localisation was explored in 6.3.1.). In terms of national politics, one could argue that the Sustainable Communities Act, which became law in 2007 (DCLG 2008) provides useful tools for those seeking to promote localisation, bringing local authorities and communities together to undertake projects that could contribute to localisation. The UK's new Conservative/Liberal Democrat coalition's concept of the 'Big Society' promotes many of the things that Transition encourages, community cooperatives, the community right to buy, increased powers for local authorities and so on. Its focus, however is very much on localism, and not localisation. The concept that *local production for local consumption could become the norm is one in which*

interest is growing. A recent report by ERZ Ltd. for, among others, the Glasgow Centre for Population Health (ERZ 2010), looked at the potential for the city to become a significant producer of food, identifying derelict land that would become home to market gardens, as well as the potential from back gardens and flat spaces on buildings. As discussed, nationally, most of the debates around local economies focus on localism rather than localisation. However, the debate appears to be shifting. The recent Food 2030 report from DEFRA (DEFRA 2010b) discussed the notion of 'food security' in a way more in sympathy with Chapter 5 of this thesis than previous DEFRA documents. The National Trust has made local food one of its four key objectives, and is making land available for local food production as a central part of its work. At the national scale however, while climate change is taken to the heart of policy-making (thanks, in part to the Stern Report's assertion that tackling climate change and economic growth are mutually compatible), peak oil and localisation are not, as national policy-making is still focused on a 'return to growth', rather than, as MP Frank Field recently put it when discussing the UK's debt crisis, "hopefully readjust(ing) to a lower standard of living, which is what this crisis actually means" (BBC 2010a). Localisation runs counter to economic growth. However, if Heinberg (2010) and Korowicz's (2010) analysis is right, and peak oil inevitably means the end of economic growth, then localisation will not be an approach meaningfully embraced as national policy until the end of the growth economy becomes apparent. In that context, the work of initiatives such as TTT must inevitably precede the mainstream political process.

Can relocalisation be scaled up nationally? Might it be that, over the next 20 years, we will see the re-conceiving of the national economy as nested

hierarchies of self-reliant economies, based on the proximity principle, of local production for local needs, where possible? This is unlikely to be a reality legislated into existence, as the concept of creating economic growth is so deeply ingrained in political and economic structures. Transition argues that this needs to be built in parallel to the current system so that when an inevitable contraction in energy availability begins to affect society, it has a fallback position, a safety net. In this context, rather than talking about relocalisation, it may prove to be a more effective approach to focus on resilience, already in the government discourse, albeit interpreted in a different way. Any relationship with national government would be a complex one, given that the vision of society promoted by Transition challenges most aspects of how things are presently done. It is for this reason that it has, until now, focused on community-scale initiatives, but as it grows, it will inevitably begin to rub up against politics nationally.

8.3. My Positionality

As stated earlier in Section 4.8., I have been very mindful of issues of positionality and reflexivity while researching this thesis. My process of evaluating my own reflexivity resonates with that of England (1994:82) who argued that it is:

“self-critical sympathetic introspection and the self-conscious *analytical* scrutiny of the self as the researcher. Indeed, reflexivity is critical to the conduct of fieldwork, it induces self-discovery and can lead to insights and new hypotheses about the research questions”.

The research process took place over a three year period. During that time, I worked mostly for Transition Network, but also part time for TTT, with a particular

focus in its EDAP project. As Cook (1997) argued, being embedded within an organisation, such as TTT, provides a researcher with an understanding from the inside, which is a valuable perspective. All of my research was conducted in and around Totnes, apart from a few interviews that took place with specialists in different fields of relevance to this research (see Table 3.2), most of which were conducted using Skype, but some of which took place at conferences or events.

Being embedded in the town provided trusted access to people that could otherwise have proved difficult (such as the senior planner I interviewed). There was a trade-off here, my reputation and position within TTT ensured access that other researchers might have found harder to obtain, but the price was that I was known to the interviewee, and perhaps seen primarily as a representative of TTT foremost, and secondly as a PhD researcher. This was particularly noticeable in the interview with SP1, which felt more like an official interview with TTT, despite assurances of anonymity.

This research began with oral history interviews, which proved fascinating, and explored aspects of the history of the town which had been little explored by historians or researchers prior to that point, particularly the history of the town's commercial market gardens. As a newcomer to the community (I have only lived here since 2005), conducting these interviews led to my feeling much more connected with Totnes and its history, as well as introductions to 'old Totnesians', rather than the more visible incomer population. The questionnaire was piloted early 2009, and then conducted during April of that year. Finding reliable surveyors proved problematic, hence the total number of completed surveys falling short of the 300 I had aimed for. In the end, it was my then 16 year old

son gathered the most surveys, respondents initially assuming he was doing a school project and taking pity on him!

The in-depth interviews took place during the rest of 2009, and the focus groups that December. None of these presented major difficulties, other than finding reliable transcribers. My high profile both within TTT and within the town made issues of positionality more problematic than would have been the case for more anonymous researchers. Valentine (1997:113) points out that when conducting interview-based research "it is important to reflect on who you are and how your identity will shape the interactions that you have with others". Clearly, while conducting these interviews, my role as a white man, not indigenous to Totnes, and with a public profile associated with TTT, will inevitably have had some influence on the results, despite my efforts to avoid this. This was less of a problem with the oral history interviewees, where very few of them knew me or had heard of me prior to the interviews, and saw me as a local history researcher, rather than as an environmentalist. The in-depth interviews with local political representatives and community figures were arguably more prone to influence, as my profile within TTT was much more known to them. It is quite likely that their responses would have been influenced by the fact that it was me doing the interview, in spite of each interview starting with "please answer the following questions as though I have no connection whatsoever with TTT". Given the interactions between TTT and a range of local organisations, and also all manner of political reasons why some would like TTT and others would have issues with it, unspoken pre-formed opinions about both TTT and myself would have been brought to the interviews. A colleague undertook two of the focus

groups, I only did one (the food focus group), and none of the participants indicated that they knew who I was.

I was very aware, during all of the interviews, that the views put forward during them, as well as the memories collected during the oral history interviews, need to be handled with caution, given that, as Cook and Crang argue (1995:91), there are no:

“pure subjects or perfectly knowledgeable informants. Moreover, there are unlikely to be singular accounts of singular cultures but multiple competing versions, and it is by shuttling between these different versions that ethnographers can begin to perceive the way in which people produce and reproduce the world through their / our lives. The process of analysis is not a matter of developing a definitive account, but of trying to find a means to understand the interrelations of multiple versions of reality – including not least that of the academy – so that it serves to stress the interconnectivities”.

Given the fallibility of single methods, and the potential influence of this researcher on the outcomes of some of them, a multi-method approach was used here to maximise triangulation. I was mindful, when coding the interviews, of the need to back up assertions and memories presented with data from other sources, such as local archive material and parallel research.

I do think however, that the degree of embeddedness I have brought to this research has enabled insights that would be harder for an unembedded researcher to uncover, and also led to the collection of high quality data. Issues of gender were, I think, partly overcome by the fact that the remaining focus groups were conducted on my behalf by a female colleague, and the majority of those delivering the questionnaires were women. Another tension emerged from

the risk, as voiced by one or two more vociferous members of the community, that my work in the community was motivated not by seeking to help improve the community, but rather by my own academic goals. While I think this perception was very limited, it presented challenges to my work with TTT. It remains to be seen whether the publication of this thesis will allay or deepen this perception. Sometimes bringing together my activist work and my academic work was very successful, such as an event presented by TTT called "How We Used to Live", which brought together many of those interviewed to tell their stories, illustrated with slides from the Totnes Image Bank and Rural Archive. It would be fair to say, however, that coming from a background in activism, I found balancing my activist/researcher roles to be difficult, the former feeling far more comfortable, initially at least. That said, the fact that I was also undertaking research was kept relatively quiet, and I suspect that few people in the community other than those active within TTT would have been aware that I was undertaking the research for this thesis. As the founder and perceived figurehead of the Transition movement, I also felt a fair degree of internal pressure to be able to write something glowing which 'proved' the Transition approach to be highly effective, although over the 3 years of this research I have, inevitably, learned a great deal about taking a more detached position.

One key element of the ethos of Transition is the idea of 'Let it go where it wants to go', the idea that what a Transition initiative does is not prescribed, rather it emerges from the process. It is useful to reflect here that when I started TTT, I had no idea what was going to happen, if anyone else would take it seriously, if it would gain any kind of significant traction. This is embodied in the 'Cheerful Disclaimer' (see Section 1.2), and I have tried to bring that sense of initiating a

process with no attachment to the outcome to this research. Therefore, throughout this research, I have tried to cultivate the least possible attachment to its possible outcomes. It is useful also to reflect on how the research I have undertaken affected TTT. It is my observation that it has left TTT stronger, and with some very useful research and self-reflection that will greatly aid where it goes from this point forward. This research certainly brought a depth and rigour to the EDAP, and has also provided some useful data with regards to its progress to date. As a passionate advocate of the Transition approach, undertaking this research has also led me to re-evaluate some of its core hypotheses. Might it be, as the research suggests, that a lack of skills and a lack of belief that Transition is possible are not the key obstacles to change? Might it be that engaging with local government and promoting social enterprise are the key ways forward? If so, they were certainly not what I expected when beginning this research.

Another area which proved fascinating was the value of the innovative public participatory tools, such as World Cafe and Open Space to this research. Prior to the beginning of TTT, I had little experience of them, and thought of them only in the context of community think tank events. However, this research has impressed upon me their role as fascinating research methods. While they are clearly subject to skewing in terms of the data generated (as, by their nature, participants are self-selecting), they offer a fascinating way of distilling ideas, visions and information from a group of people. For me, it has been fascinating to look back through data from Open Space sessions in 2007, and to observe how many of the ideas that were suggested have since become a reality. While Open Space and World Cafe do not offer a replacement for the more conventional research methodologies such as questionnaires and focus groups,

they do bring a very useful extra dimension and depth to research. They provide a fascinating way to gauge a group's thinking on a particular topic, to gather together its collective knowledge on a given subject, and also to invite it to vision, to imagine and to come up with ideas and suggestions. Their inclusion in this methodology has been something that I think has brought great depth and richness to it.

A key question is whether, having undertaken this research, I now feel that Transition, as practiced in Totnes, is a stronger model/approach as a result of having looked at it in this level of detail. My sense is that some aspects of Transition, such as the depth and diversity of engagement emerge disappointingly as not having gone as far as I would have hoped, although this is still a very young initiative. The degree to which it affects thinking in the town of Totnes was a pleasant surprise, as was picking up stories about some of TTT's projects through the focus groups. Putting something I have so much of an emotional vested interest in under the microscope in the way I have here was an uncomfortable process. There was always a concern that I would find I had wasted four years, or that the initiative was widely resented and despised. In the end, that was not the case, although some TTT projects, such as the Totnes Pound, emerged in the survey as having generated limited enthusiasm.

This research also took place in parallel to the development of the Totnes and district EDAP (Hodgson & Hopkins 2010), with some of the research, such as the surveys, the oral history interviews and the 'Can Totnes and district Feed Itself?' paper, contributing to the document. In this regard, I had sought from the outset to do a thesis which not only explored important gaps in the

resilience/relocalisation literature, but also helped to deepen and further the work of TTT and other Transition initiatives. I did not want to do academic research that was purely academic. With the publication of the Totnes EDAP³⁰, I feel that this has been successfully managed, this thesis representing a companion volume to the Totnes EDAP. With the above reflections in mind, I feel confident that I have remained objective and have constantly allowed for my position as a researcher-practitioner, and that this research brings valuable insights to the research literature, as well as offering a new level of depth and insight to the Transition movement, both in Totnes and elsewhere.

8.4. Future research.

As was noted in 2.6.5, to date, little research has been done on the Transition model and its success or lack thereof. This research gap is unsurprising, given the recent emergence of the movement, but this is changing rapidly, with the ESRC's 'Energy and Communities' research funding, and a number of universities and researchers starting to research the subject (e.g. Seyfang 2009b, North 2010a, Bailey et al. 2010). Clearly more general research would bring greater illumination to the model, but here the focus will be specifically on issues that emerge from the findings of this thesis. It has flagged up a number of areas where future research would help to deepen understanding of the issues explored here. These include;

- Skills: why is there a split between different generations in terms of their skills? Where do people acquire skills: from parents, peers, the media, neighbours, their education? Are urban populations more or less skilled than rural ones? With the degree of deskilling that has

³⁰ See Hodgson & Hopkins (2010.)

taken place in agriculture in recent years and the demands that an increase in national food security will present (Food Research Partnership Skills Sub-Group 2010), and the growth in interest in volunteering and rural skills among the urban population, might it be that urban populations are now more skilled than rural ones?

- Health and Wellbeing: does Transition produce healthier communities, or are healthier communities naturally more inclined to Transition?
- How might local authorities, Transition initiatives, local academics/researchers, business promotion bodies, all groups with different ways of communicating and different cultures, build on the EDAP model developed in Totnes, to create settlement-wide development plans which take peak oil, climate change, relocalisation and resilience as their underpinning assumptions?
- It was suggested in the oral history research that the 1950s could be argued to have greater social capital than the present. Was this actually the case?
- It would also be useful to explore in more depth the extent to which people's understanding of peak oil and climate change can be attributed to the work of TTT, so as to be clearer about which aspects of its work could be argued to be more effective.
- The developing of effective and comprehensive 'Resilience Indicators' is something this research has only begun to explore. Would such indicators be highly place-specific, or could more general indicators be developed? To what extent can a community develop its own indicators, and what support would it need with that? How will they be measured, and what can then be done with the findings? How, for example, would the resilience indicators for Totnes differ from those of San Francisco?
- Further research is also needed on whether Klar & Kasser's (2009) connection between activism and happiness/wellbeing would emerge from the Totnes community if a broader set of questions relating to wellbeing had been included in the questionnaire, providing more data with which to search for correlations.

Another area of research would be, over the lifespan of TTT, to longitudinally explore the Resilience Indicators developed during the EDAP process to see if the community has, in fact, become more resilient with time. This research also side-stepped the issue of whether lessons from Transition in the UK can have anything to offer to resilience-building in the developing world, but that is an area that is much discussed. Also vital is the area of engagement, of looking at how Transition can broaden and deepen engagement, increase the diversity, in all senses, of those getting involved. As has been discussed, Totnes is a particular kind of community, how Transition would work in a very disadvantaged community is a huge subject worthy of future research. It might be that some of the ingredients for that would be finding community champions to be local spokespeople for the work, rethinking the language and the media used to present it and other aspects of the Transition model which may not be appropriate for a very different audience.

Final Remarks

One visitor to the TTT office in early 2009 ranted that he had come all the way from Germany to see the legendary Transition Town of Totnes... "and you still have cars!" Transition, both in Totnes and further afield, has clearly set high expectations, so what has this research identified in terms of how successful or otherwise it has been, and what can the wider sustainability movement learn from that?

Transition has emerged as an interesting phenomenon, politically and culturally. Although its scope and ambition are extensive, it aims to do so by working at the local level. It aims to create a globalised network of localised economies, a fascinating manifestation of Swyndegouw's (1997) concept of 'glocalisation'. Arguably, it is something that could only have emerged in a globalised and hyper-linked world, yet it looks beyond that, seeing these tools as a means to an end. Such a shift in economic and cultural focus, provided it is in the form of a 'reflexive' rather than 'unreflexive' localization, could indeed be argued to be revolutionary, but not in the traditional sense of the word. As Graeber (2004:45) argued, the concept of revolution needs to move beyond being seen as "the revolution", the great cataclysmic break". Instead, he described an approach which sounds very much like the Transition approach:

"revolutionary action is any collective action which rejects, and therefore confronts, some form of power or domination and in doing so, reconstitutes social relations—even within the collectivity—in that light. Revolutionary action does not necessarily have to aim to topple governments .. history shows us that the continual accumulation of such acts can change (almost) everything" (ibid).

In other words, the Transition response of focusing on the role of thousands of small projects and activities which is held within a wider strategic context, bypassing conventional campaigning and activism routes, may indeed prove to be a valid route to change.

Although Totnes is, in many ways, not an especially representative community in the national context, this research has revealed a number of findings with a wider

relevance. It has been shown that levels of the kinds of skills that a more localised society would need are far higher than one might hypothesise, and that those skills predominantly lie with the younger, rather than the older, population (see 7.4.3). It has shown that when invited, through a creative process of community visioning and brainstorming, a community can develop its own 'resilience indicators', although they tend to be skewed towards positive local money and resource flows and environmental sustainability and away from interdependence, enterprise and governance. It has also highlighted the potential of less conventional public participatory tools, such as World Cafe and Open Space, showing them to be exciting methods which add a richness and depth to more conventional research methods. While they cannot claim objectivity this, provided they form part of a multi-method approach, has much to recommend it, and it has contributed greatly to this thesis. I would argue that they offer the researcher a way in to a community's thinking, its knowledge, and its hopes, fears and dreams that focus groups can touch on to some extent, but that these tools are able to do in a much richer way.

A key question that has been explored here is whether Totnes is more, or less, resilient, at the end of 4 years of the existence of TTT? My conclusion would be that while much that makes Totnes resilient cannot be directly attributed to the work of TTT, what TTT has done has been, as much as anything, to change the story that the town now tells about itself. Projects like Transition Streets enable that story to be told more widely in the community, and create a greater sense of ownership of the initiative. In terms of skills and community cohesion, Totnes certainly emerges from this research as being relatively resilient, and some of

that resilience, in particular in terms of awareness, previously unmade connections, a number of practical projects and also a uniting narrative, can be traced directly to the work of TTT. In terms of other aspects of resilience, such as the economic life of the community, and the precarious existence of many of its small businesses, TTT has yet to contribute much of any impact, although as has been identified, this will form a major part of the next phase of its work.

So what has been the contribution of this PhD thesis to knowledge, to the wider literature? It has provided a detailed case study of a 'flagship' Transition initiative, identifying the challenges it faces as well as its successes. It has brought the concepts of localisation and resilience together in a way that is little-explored in the literature, and argued clearly for a very practical connection between the two. It has drawn together previously disparate literatures on the many different interpretations of the concept of resilience, and has set out a detailed grounding for the Transition concept. It has shown that participatory research tools such as Open Space and World Cafe can be dynamic and can offer rich insights into community processes such as Transition. Finally it has suggested that the future of the low carbon agenda might revolve more around social enterprise and governance than around other, more accepted, approaches.

In spite of its initial focus on catalysing small, grassroots, community-led projects, this research leads to the conclusion that the next phase of the Transition movement, and perhaps, by extension, the wider climate change/sustainability movement, is to shift the focus to governance and social enterprise. At a point in

time of great economic uncertainty, with government promoting the rather unformed notion of the 'Big Society', and with tension between the desire to restimulate economic growth and the urgent need to decouple such growth from the inevitable increase in carbon emissions, the findings of this thesis could have come at a very opportune moment.

Appendix 1. Survey Questionnaire.

INTRODUCTION:

Good afternoon/evening. We are doing some research into issues around energy and community development, and wonder if you might be kind enough to spare us 10 minutes of your time? Your answers will be treated in complete confidence and it will not be possible to identify your responses in any published materials. You are under no obligation to answer any question here, although it would be great if you felt able to complete it. Many thanks for your participation.



SECTION ONE: ENERGY

To start off with, this first section asks about your thinking on a number of issues that relate to energy (please circle your chosen response).

	Very concerned	Concerned	Unconcerned	Completely disinterested
	1	2	3	4
1. How concerned would you say you are by last summer's rises in the cost of energy?				
2. How concerned would you say you are about climate change?				
• Globally	1	2	3	4
• Locally	1	2	3	4
3. How concerned would you say you are about the security of the UK's energy supplies?	1	2	3	4

	Very informed	Informed	Uninformed	Completely uninformed
	1	2	3	4
4. Do you feel well informed about energy issues?				
5. How many light bulbs in your home are low energy bulbs?				<input type="checkbox"/> None <input type="checkbox"/> A few <input type="checkbox"/> Some <input type="checkbox"/> Most <input type="checkbox"/> All of them
6. Would you say that, compared to the national average, the carbon dioxide emissions per person in the South Hams are;				<input type="checkbox"/> High <input type="checkbox"/> Medium <input type="checkbox"/> Low

7. Would you know, without looking, the depth of your loft insulation? Yes No
8. If yes, what is it (in centimetres)?

SECTION TWO: FOOD

This section discusses food, what you cook and how you buy or grow it.

	Always	Mostly	Seldom	Never
9. Are the meals you eat cooked at your home using fresh produce?	1	2	3	4
10. Does a member of your household grow some of the food you eat? (if 'no', please go on to Question 14).				
			<input type="checkbox"/> Yes	<input type="checkbox"/> No
11. How would you rate your skills in growing fruit and vegetables?			<input type="checkbox"/> Excellent	<input type="checkbox"/> Good
			<input type="checkbox"/> Poor	<input type="checkbox"/> Very poor
12. Do you have an allotment?			<input type="checkbox"/> Yes	<input type="checkbox"/> No
13. Which local or national organisations do you get support from with skills, seeds or gardening advice? (please specify)			
14. Within what distance of Totnes would meat or vegetables need to have been grown/produced for you to consider them 'local'.			<input type="checkbox"/> Immediately adjoining the town	<input type="checkbox"/> As far as 10 miles
			<input type="checkbox"/> As far as 30 miles	<input type="checkbox"/> As far as Plymouth
			<input type="checkbox"/> Within the South West	<input type="checkbox"/> British produce
			<input type="checkbox"/> Don't know.	

SECTION THREE: TRANSPORT

This section explores your travel behaviour and mobility.

15. Do you have regular use of a car? (If no, please go to Question 20)

Yes

No

16. Roughly how many miles do you estimate that you travel each year by car?

..... miles

Work%

Leisure.....%

Taking children to school

.....%

18. If you had no car, which of the following do you think you would find difficult to do? (please tick as many boxes as appropriate)

Essential shopping

Non-essential shopping

School runs

Leisure activities

Recycling

Socialising

Getting to work

Transporting bulky goods

Going on holiday

Visiting family

Other (please define)

19. If you are in employment, how difficult would it be for you to do some or all of your job from home?

The nature of my work makes it impossible

Very difficult

Difficult

Possible

Straightforward

I am not in employment

20. If employed, have you discussed the possibility of doing some or all of your work from home with your employer?

Yes

21. When you go shopping in Totnes, which mode of transport do you usually use to get to and from the shops? (you can tick more than one if appropriate)

22. (This question is only for those who answered 'No' to Question 16). Do you find living where you live without a car to be;

- No
- Not a relevant question

- Private car
- Lift share with friend/neighbour
- Taxi
- Bus
- Cycle
- Walk
- Rickshaw
- Other (please describe)
- I never go shopping in Totnes

- Easy
- Awkward but manageable
- Difficult
- Almost impossible

SECTION FOUR. THE LOCAL ECONOMY

We'd like to move on now to look at money and the local economy.

23. Do you consciously tend to use local shops in preference to national chain shops? (by local shops we mean shops that are not part of a national chain, i.e. Morrisons, Somerfield, WHSmith and Boots)
24. Could you say roughly how much, in monetary terms, of your weekly shop is from non-chain shops?
25. How would you feel about a new national supermarket chain store opening in Totnes?

- Always
- Often
- Occasionally
- Never

- None at all
- A little
- Some
- Most
- All

- Delighted

26. Why?
- Don't mind either way
 - Wouldn't be a good thing
 - It would be dreadful
27. When you go shopping, which of the following choices do you look for? (Please number in order of priority, with 1 as most important).
- Local
 - Organic
 - Fair Trade
 - Good Quality
 - Low price
 - Brand
28. Have you ever heard of the Totnes Pound? (if no, please go forward to 'Community Life' below)
- Yes
 - No
29. If yes, do you ever use the Totnes Pound?
- Regularly
 - Occasional
 - Rarely
 - Never
30. What do you see as the purpose of it?

SECTION FIVE. COMMUNITY LIFE

These questions explore the extent to which you feel an active part of your community, and how much you feel that your involvement in community activities makes a difference.

	Strongly agree	Agree	Disagree	Strongly Disagree
I feel adequately included in public consultation processes on major planning decisions that affect the town	1	2	3	4
It is hard getting my voice heard by those who make decisions that affect Totnes	1	2	3	4
I feel that in the event of a crisis, the community of Totnes would pull together and work together	1	2	3	4
The sense of community I feel from my neighbours has decreased over the past few years	1	2	3	4

I would describe my outlook on the future of this community as 'optimistic' 1 2 3 4

31. Have you ever heard of the organisation Transition Town Totnes? (if no, please go forward to **Question 34**).

- Yes
- No

32. Do you ever participate in any of its events/projects?

- Never
- Occasionally
- Regularly
- Often

33. If so, which? (Please tick as many as appropriate)

- A talk or workshop
- The Garden Share Scheme
- The Totnes Pound
- One of the working groups
- Transition Tales
- Tree Plantings
- Energy Descent Plan process
- Other

34. Do you feel that the work Transition Town Totnes is doing is relevant to your life and to your concerns?

- Highly relevant
- Relevant
- Irrelevant
- Completely irrelevant

SECTION SIX. ABOUT YOU

These final few questions (nearly there!) give a bit of information about yourself. It is very useful for us to be able to put your previous answers in a context.

35. May I ask your age?

- Under 18
- 18-30
- 31-45
- 46-60
- Over 61

36. Please circle whichever of the following statements most closely reflect your views.

(Please circle the answer that most closely reflects your thoughts)	Strongly agree	Agree	Disagree	Strongly disagree
I consider myself a person with strong religious/spiritual beliefs	1	2	3	4
The things I own say a lot about me and how I'm doing in life	1	2	3	4
Buying things gives me a lot of pleasure	1	2	3	4
My life would be better if I owned certain things I don't have	1	2	3	4
I consider myself to be a frugal person	1	2	3	4
Spending time with family and friends is of great importance to me	1	2	3	4
It is important to keep up with fashions in clothing and hairstyles	1	2	3	4
I am adaptable and can turn my hand to new skills fairly easily	1	2	3	4
In general, I would say that I am satisfied with my life.	1	2	3	4

37. In which of the following skills would you say you feel reasonably competent?

- Keeping small livestock
- Making basic house repairs
- Growing food
- Repairing clothes
- Cooking
- Painting and decorating
- Storing garden produce (i.e. food crops)

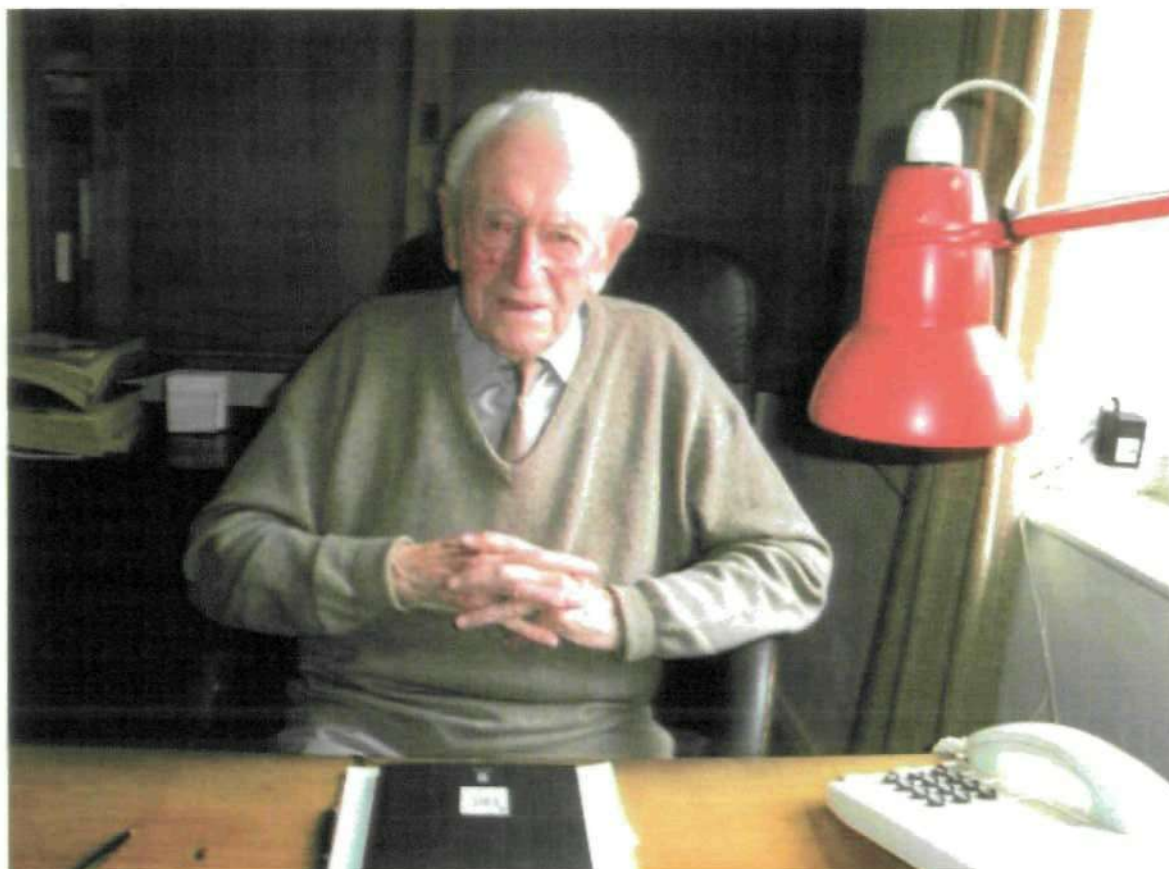
38. Finally, how many hours of television would you say you watch a week?

- 0-5
- 6-10
- 11-20
- 21+
- I don't have a television

Thank you so much for your time in completing this questionnaire. We are extremely grateful. As a follow up, we would like to do more in depth interviews with some of those who completed this form. If you would be happy to be followed up for a longer interview at a later date, please tick the box below.

If you ticked this box, please give us a name and a phone number we can contact you on.

Appendix 2. A Sample Transcribed Oral History Interview: with Douglas Matthews from Staverton.



This is a church commissioners' property. The church commissioners connected 5 farms together and built this set of buildings, and my grandfather came here with his two sons and his wife. The two sons were Alfred and Richard, one was never married but Alfred married and they produced me on January 5th 1908, in this house in the room I'm sleeping in actually, which is interesting that I have gone back there!

I had a Governess to begin with, I was a precious little boy, and then I went to Totnes Grammar School and then I went away to Taunton to boarding school, and came home and I didn't really know what I was going to do, but automatically slipped into farming. That was about 1926. In 1934 I got married and my parents moved to the house down the road which is now called Staverton House and I moved in here with my wife when farming was at a very low ebb.

I remember that I had started, it was Schedule D in the old days, the income tax was based on the rent, it was twice the rent, and then there came the day when income tax was to be based on a balance sheet done by an accountant, so before I took over the farm I took over doing the accounts for the farm, for the year before I took over, and the first year I took over we made a loss of £500, and

the next year, I took over and I made a profit of £450, the year after that I made a loss of £400! (laughs)

But I farmed the place for 54 years, 250 acres when I started, and I added bits and it was 300 acres by the time I had finished in 1989. The farm has all been sold off, the buildings are all dwellings, and I've got the farm house, that's the basic story. We were all working horses until 1934.

What are your memories of agriculture when you came into it?

When I came into it I think a farm worker got about £10 a week or something like that. There were no holidays, no Saturday afternoons even. I think they had about 5 or 6 men on this place.

People worked 6 days a week?

Yes. We had 20 or 30 cows, 40 acres of cereals and about 50 breeding ewes or something, when I took over. I developed this as a dairy place. When I finished in '89 there were 75 cows, a big herd in those days. Nowadays if you haven't got 400 you are not in the line at all. A complete change of everything. And that bloody woman, Margaret Beckett, she's completely upset everything, if that gets recorded I don't mind if she hears it!

I'll pass it on!

See we've got an urban Government, they aren't interested in the countryside, there is nobody in there that is interested, Tony Blair isn't interested, Margaret Beckett I suppose he didn't know what to do with her, gave her a pair of green wellies and sent her to the country, and now, when she has made a mess of that she got promotion! But that's not what you want to know!

So it was all run with working horses when you came in?

Yes. We had 5 working horses. A head horseman who had 3 and the second horseman who had 2.

What kind of horses were they?

They were, you know, fluffy things, Shire horses, fluffy feet. We had a cob which my uncle used to ride around checking the cattle, then I took over that job. The cob also ran the two traps, one had hard rubber, that was for Sundays and Bank Holidays, and the other one had iron band, that was the only transport we had. We'd go to Totnes with the butter, my wife's grandmother and mother used to make butter, it was all hand work.

Then you used to sell the butter in Totnes?

Yes, usually a shopkeeper or someone from Brixham or somebody who ran a dairy shop, you had a contract with them that they would take all your butter and

that's where they used to meet in Totnes, and we used to do the shopping for the household. We used to have a lot more deliveries, we'd have bread delivered, not milk because we didn't need it, the post of course was delivered, butchers used to deliver, and this was all horse transport, and this gradually changed. You see two wars have made such a difference. Any thing that would help the war had money added to it in, and the techniques developed in the war were developed into other implements. This is your oil business coming in, fertilisers and pesticides. My first tractor was a second hand Folson in 1934, then I had a Ferguson, when I left farming I had 4 David Browns, just processed through, they had spade lugs on the tractor wheels, then rubber tyres came in, all these developments have been so interesting, I have been so fortunate to live through 2 wars. You see I registered for joining up but they wouldn't take me because it was a reserved occupation. My parents weren't in it then 1934, I married, and war didn't start until 1939, then I was an air raid warden in 1939, and then as far as I'm concerned there were all sorts of agricultural development committees, the technological development committee, the feeding stuffs committee, I was going to Exeter one day week, and this is what you felt. You weren't fighting so this was the thing you could help with. Of course there was a complete fear of starvation from U boats.

The whole Dig For Victory thing of trying to increase production from gardens and allotments, how did that manifest, what was the process that encouraged people...

I was on these committees to try and make farmers produce from every acre of land they could, things like big acres of potatoes that were grown, and we were all rationed as regards meat and all that sort of thing. It seems funny to meet people who haven't had this sort of thing, you had to do it and that's it.

What else? Farming became very prosperous. The subsidies that were put on various things we produced in order to get as much produced as possible, no Government had the guts to actually cut them after the war, because agriculture meant something. That is partly what has happened now, there has been a big blitz, an arrogant Government in power, and producing things we don't want that are subsidised. It has all happened at once. You can't altogether blame this Government because they have tackled it, but if each Government since the war had gradually reduced it it'd have been alright, but now it is such a shock to agriculture.

What are your memories of Totnes in the 1930s.

Traps, horses and carts, once or twice a year they had a horse sale on the Plains, it's a completely changed place. Dartington Hall of course has changed Totnes more than the War I think. We've still got relics of Dartington Hall, and the type of people who came in 1923-25 when the Elmhirsts bought Dartington Hall, millions of American money you see. Dartington Hall was just a relic, the roof was falling in of the Great Hall, and I used to know the manager very well of DH Limited, and he said that the Elmhirsts put in £13 million in one fell swoop into the kitty, so that was very helpful. £13 million meant a hell of a lot, my God!

Did you know the Elmhirsts?

Yes I did. It was a big shock to the area, everything changed. My two daughters went to Dartington School, because one was born in 1942, and the other in 1937, and my wife went over and looked at Dartington hall and said "my God they've got a marvellous place here, there's little wash places for them and everything miniature in the primary school and its in the country and, because normally they'd have gone away to boarding school, and of course with bombing as it was we couldn't face that, so they both went to Dartington, and then the war finished and we never took them away.

They never did any academic things at Dartington, one of them was games, the other one was dyslexic and they never seemed to pass anything at school, but they never failed anything after they left school, and I think Dartington just developed their personalities you know. They both went nursing and they got their degrees in nursing in London hospitals, and one is now living in Australia, got married there 40 years ago, the other one lives in Scotland, so that's what happened to them.

I don't know if Dartington is to blame for that, but it gave them a different outlook. It was very helpful for children of that sort, you see the whole thing was free love, nude bathing, all the sort of thing that was very foreign to this part of the country.

Everyone I have spoke to who went there said they had a fantastic time!

(laughs). I was a church warden when I was 21, and Greg Botman (?) was the vicar. His personal relationships with people were hopeless. He got friendly with Leonard Elmhirst, and they had a group of actors there who wanted to do a Nativity Play, and they asked if they could use Staverton Church. I was dead against this, because with the Elmhirsts, the whole thing being as it was, using this church was desecration.

I did a bit of lobbying, I got all the Parish Council on it, and they agreed with me, then we had a meeting of the Parochial Church Council and they all dropped out and he had these people in. So I resigned, there was no church warden for 6 months. It's the sort of thing, you can you can see that sort of reaction afterwards. I was mixed with agricultural things at Dartington, I knew the Elmhirsts, I knew Jock Curry who was the economist there, but this is showing you the impact. It was a thing if you think, we were all church goers, the church meant everything, the central thing, everyone went to church on Sunday morning, the chats outside the church door, we used to walk to church....

So Dartington was considered very scandalous?

Yes. But they have left their stamp on the countryside, but of course now it has changed and gone back to a commercial thing once more, they used up the money. In 1944 we started the insemination centre here, we travelled all over the place looking at cattle and looking at places that had started, only 2 or 3 had

started, and we were one of the 5 agricultural insemination stations around the country. We had a private centres group (?). That was one of the things we used to go to London for, you know, most interesting this development, one of the things they did, and the Agricultural Discussion Society, we had all the top range agriculturists down to give lectures etc. because of the connection with Dartington Hall! That was a great help.

Would you say with hindsight that the Dartington experiment was a good thing to have happened?

Yes. The Agricultural Discussion Society was all in keeping with what the War Executive Committee was doing. It was implanting some new ideas that would give better production. Another thing was it was all South Devon cattle down here, by the time we had finished it was a big proportion of Holstein Fresian. All these things developed from South Devon cattle milked by hand to sort of circular milking parlours, you see in those days in my early day, the buckets and pans and things that we used for milking were brought into the house, the women had to deal with that, the women that worked in the house etc, that's been a complete changeover.

I was saying the other day that when I was farming, I had 5 men here, working, but now I would not be able to employ more than 1, and the main machinery work would be done by contractors. You see, when we all had tractors and all the implements it was too much cost of implements to be justified on a small farm. I think there is a big future for agricultural contractors, and quite a big future for farmers, but I don't think this small farming thing is....

You see Staverton was church commissioner owned, except for a few farms in between, about 4000 acres in a ring fence more or less, and it was sacrosanct, the Commissioners wouldn't think of selling any land for building, but they sold all the family silver, the Church Commissioners made a hell of a mess of their financial side and they had to sell land. There's only about 3 farms in Staverton that are still Church Commissioners, they sold the lot. That's a big change. It was absolutely sacrosanct.

Peter Trumper was down here from Trotters, Trotters were the agents for the Church Commissioners, and Peter Trumper was the big mouth in the, they thought a lot of him because he was brilliant. He came here one day and, recently then the Commissioners had sold a farm in Tavistock, to the Western Morning News, they wanted to be able to have a farm to show what they could do, and I said to Peter "you've sold a farm in Tavistock", "oh yes, that's just a one off..". Now what about Fursdon, would you consider selling Fursdon? "Oh no, we'd never think of selling Fursdon". And just a hypothetical question, what would you think of asking for Fursdon? Well it wouldn't be less than £16,000. £16,000! This was 5 cottages, a farmhouse and 300 acres of land! So I could have been a millionaire now! (laughs)

Actually any savings I had then I had invested, and I thought I'm not so sure about this thing, I'm not going to sell my investments.

So it's still owned by the Church Commissioners?

It is.

You have talked about how in the 1930s on the farm the energy mostly came from horses, but what about in the house? Was there electricity then?

We had electricity in 1932.

So before that you would have had paraffin lamps?

We had paraffin lamps, log fires and log stoves. But they had a mains supply to the village from Totnes I think it was, because they didn't have a distribution place here then, and I tried to get them to bring a line up to Furzedon. In the end they agreed to but on the condition that I would spend at least £30 a year on electricity. I agreed and that's when we had it. That was just ordinary domestic electrics, but as I got more mechanisation I had a 3 phase supply brought in.

So in 1932 when the electricity came in, apart from lights, what would you have had to run on it?

Lights was the main thing. We gradually went over to electric stoves, television, radio, radio of course came in I used to make radio sets with my pocket money, made one for an old aunt, a 5 valve set, I used to make a useful bit of pocket money with it. A loudspeaker with a big horn, Browns something.. and see when I was away at school I had a crystal set there, I used to hang the aerial out of the window. This was in 1922. Then electric irons I suppose. We had several kinds of iron before that. One was the plain kind I have there against the door as a door stopper, which you put on the stove. Another had an outside case into which you would put a hot iron, which you heated up on the stove. What else did we have? I don't think we had electric heaters for quite a while. On the farm, when we got the 3 phase supply, as it developed we got a milking machine, a corn dryer, various things.

When you had the horses in the 30s how much of the land would have been required to feed the horses?

No. They were just on fields where there was grass. The horseman would come back in the winter in the evenings to feed them.

So there was a whole local industry that supported the horses?

There was a blacksmith we used to take them to in Broadhempston. A vet, a chap called Sanders from Buckfastleigh, and a chap who used to come from Chudleigh to castrate the lambs. They used to have fire in the corner of the field

and the male lambs were brought into the enclosure, and he would sit on a plank that was on something to keep it off the ground he was about the same height as I am, a longish plank and the chap would sit on one end, and the chap who did the castrating would sit on the other, and the one at the far end would hold the lamb by the front legs on their backs, and this chap would sit with his legs apart and the lamb hind legs under his legs cut out the testicles, he'd put a clamp on the testicle bag first of all, then he would cut out the testicles and then with a hot iron he would cauterise it...

Ouch.

He has verigris... I don't know how he got the verigris but he put verigris on, I remember the smell of it, and that was how we kept the ram population down. The vets, you see we didn't have tubercular tests in those days but then we had tubercular testing, and I remember I had a pet cow here that Bumpston ? and she failed the test. There was a little chap called Triggs down the road who had a small holding and I said to him "I've got a cow here that's producing a good amount of milk, she's failed the test, are you prepared to take her for 12 months, I could understand if you didn't want to but its up to you". He said "oh yes I'll take her". I said that at the end of 12 months I'll have her back. So I did, I got the back and she passed the test! Extraordinary that. The test was not infallible by any means.

You were asking about other services. It was only really the vet and the blacksmith, they were the main people

In peoples daily lives people were more skilled in a range of practical skills. What could people do?

Like pottery and that kind of thing? The men used to do their gardening on good Friday, they had a day off and they would work overtime to do the farm garden and make a little bit of money that way, and cut the grass and everything... There was the Mother's Union and my uncle was in the Farmers' Union. I took a postal course in agriculture from Bristol to learn the technical side of farming, I wanted to acquire as much knowledge as possible. Staverton used to have a cricket team and a football team, I used to play rugby for Totnes, until I got married and decided that life was worth living! Rugby has changed a great deal, it used to be a great game, but money has changed it.

During World War Two, where did the training for Dig For Victory come from?

I think it used to be via the Agricultural Discussion Societies. There was one in Kingsbridge which was more go-ahead than here. They used to get some really good speakers. I used to go after cars came in, before that it was too far to go in the trap. Once Dartington Hall started up we had much better speakers here.

What local industries were there?

Well there's Riverford. John Watson arrived just after World War 2. He took over Riverford Farm, and he was a friend of Pete Trumper who was the one that made the connection between the two of us. John used to ask a lot of questions. We had lots of long chats, and we'd come up with a brilliant idea, we'd discuss it, and then two weeks later I'd see John and I'd ask him "how did that idea go that we'd been talking about", and he'd say "which idea was that Douglas?" Riverford wasn't organic then, he developed the organic side with his sons. Now their vegetable boxes go a long way, my daughter in Bristol gets one.

What are your memories of Totnes after WW2?

Well Dartington Hall had a lot of influence of course. Totnes had a market, there is no real market anymore. The old one used to be at the top of town. It was every second Tuesday and sold cattle, pigs, and sheep. In the middle of the High Street was the pannier market, which nowadays is out in the open, then it was all covered, with old stalls with top and bottom doors and a separate bit in the middle. Anyone could sell anything, rabbits, and so on.

Then the supermarkets came in, but in fairness the markets were more or less stopped by the time they arrived. I used to take produce to Totnes, then to Newton Abbott, and eventually to Exeter, as transport became cheaper. You talk about cheap oil, but it costs me £600 for oil to heat this house for 3 months!

Where did your food come from?

Looking way back it practically all came from this area. We had a couple of house pigs that are the rubbish. A local chap would come by, cut their throats and cut them up, and make bacon and hams. We used to preserve it in saltpetre, the wives would make a salt solution and baste it every 2 days, then it was put up on hooks in the dairy to dry. I still have the hooks out there now. I suppose we might have had an orange on very special occasions. There are no seasons now. They just go to a part of the world where they can get it. In those days strawberries were strawberries.

What would your normal supper have been?

The main meal was lunch, not supper, if the husband worked at home. Evening meals were a professionals thing. Lunch was normally roast beef, lamb or mutton, hot or cold, hot or cold chicken, stews, potatoes and veg, peas and beans, potatoes baked or boiled. We had meat every day, hot or cold depending on how the husband and wife were getting on! For tea we had bread and butter, jam and cream. For breakfast it was bacon and eggs. Supper was just a snack meal, bits and pieces of what you liked.

Fruit?

Apples, pears and plums. Apples could be kept all year round. They were kept in a cellar under the house. Certain kinds of pears could be kept. We had plums, greengages, and Victoria plums, we usually made those into jams.

What other things happened on the farm?

We did haymaking, and silage making, we were the first farm around here to make silage. We used to make it in wooden towers. The Saxons used to build these to the height of about 20 feet. In the early days we used to make hayricks, we'd load the hay in the wagon and bring it onto the rick. Then we had sweeps, pulled by horses. The tines would go under the grass, and be picked up by a metal pole and a pulley on top with a wire led down to grabs. A chap would stand at one end with the grabs, at the other end another chap with the horse, he would back the horse up to load up, then go forwards and tell him when to stop, and then the control rope would release the hay. Then I had a Buick car with a sweep on the front, I could *rive* around the field sweeping up the hay at 30mph! Then we made silage, self-feed silage, using an electric bar that we moved forward each day.

Did you mourn the passing of working horses?

It depends very much on the individual. If economics was 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, I just stopped replacing them as they died out. The horsemen just became tractor drivers.

Tell me about orchards in the area.

Fursedon Farm used to have 26 acres of orchards, growing cider apples. Now we have none. Whiteways, the cider people, had a place next to the farm, and we used to take our apples to them. Hills, was another one. Now it is all sold, buildings and everything. The countryside has become a commuter area. Staverton used to be all houses for railway workers or farm labourers. There are none of them now, it is all commuters.

(We then got onto talking about PhDs....)

We used to have 21 inseminators round here. One of them was Bert Pitman, who had a son at University. We used to call Bert 'The Bull with the Bowler Hat'! I said to him "how's the son?". "He's doing a PhD" he said. I asked him what was the subject and he said "the nervous system of a cockroach"! (laughs).

What are your memories of George Heath?

He had a miserable manner. If you took anything to him to see, I used to take Bramley apples, he would plead poverty "I can't pay you what I paid you last week Mr Matthews, business is very bad". I used to say "George you're talking rubbish". He was a good businessman, and he did no-one any harm. There was also Mrs Gills, but Heaths was the main market garden. He was very go-ahead and he worked hard. *It was in the back of the village hall.*

When did he close?

I find when I look back over time I make the most idiotic statements! I have nothing to remember it by At a guess I'd say about 20 years ago.

How affected would you say your life has been by cheap oil?

Completely affected by it. Compare driving 3 horses to driving a tractor! It is a viable product so to speak. Horses, if you start them at 8am, you have to bring them in by 5pm they are tired out. With tractors on long summer evenings you can just go on, you can continue working after your tea.

Well I guess there is some research going on about growing oil but it won't really affect me. I shan't be here to deal with it! For a long time I have thought that we are using up the storage of supply, we just keep on using it, but we have to stop. It'll be a slow change but a colossal one. Green fuels may be a part of it but there are so many vehicles now! We buy a lot of new cars, but we don't get rid of enough, so there are more and more.

Would you say that cheap oil has been a blessing or a curse?

A blessing. But it was also a blessing for the type of war we were able to fight. Is it a blessing if you put the two together? I don't know. I am very glad though to have lived through the period that I have lived through.

Appendix 3: Transcriptions from notes taken at World Cafe session, 'Can Totnes Feed Itself?' event, Methodist Hall, Totnes.

What ingredients of a local food system are already in place in Totnes?

- willing consumers
- land (accessible/fertile)
- garden share scheme
- retail network
- internet access
- transport network
- totnes pounds
- skills
- benign landowners

- land
- manure from livestock & humans
- local shops
- commitment
- rainfall
- seeds & knowledge
- rivers
- Martin Crawford
- Experience in growing (farming in older generation)
- Knowledge of cheese making / processing
- Box schemes

- market
- agricultural land
- skills / knowledge
- seed products (tuckers, Suttons)
- seeds of change people
- riverford et al
- allotments/gardens
- walled garden (kevics)
- alternative transport infrastructure
- river / fish farming

- Riverford
- apple orchards
- CSF – 14 sites
- Small farms, sheep, chickens
- Market stalls
- Sharpam
- Nut trees

- Garden share
 - Allotments
 - Water
 - Good soil
 - Older farmers
 - Sea weed
 - Shellfish
 - Hedgerows
 - Seed exchange days
 - WI
 - Dairy farms / cheesemakers
 - Veg shops
 - Fish
 - Vineyards
 - Woodland / dartington
 - Sprouts
 - Velwell farm
 - Landmatters
 - Agroforestry
 - Willow bed / rushes
 - Hemp potential
 - Kierran's wood
 - Moor trees
-
- primary producers
 - supermarket sites
 - good road system
 - skills base
 - growing awareness of the need
 - Steiner school, and educational possibilities
 - Soil & climate

How do we create more demand for local food?

- education (including about health, social, environmental benefits, & spiritual)
 - green taxation
 - legislating supermarkets with requirements to stock local food
-
- food hubs
 - make it cheap and accessible
 - direct marketing
 - raise awareness of the benefits of local food
 - local food festival 'the really super market'
 - share recipes, cooking, preserving skills
 - procurement of local foods by all local authorities (schools, prisons, hospitals)

- pricing policy
 - raffle prizes
 - education / demonstrations
 - social eating to show the benefits 'chain cooking'
 - involvement in growing / whole process
 - convenience
 - food miles/energy ratings on food
 - shared / cooperative shopping

- burn supermarkets
- buying below retail price – food hub
- education / tasting
- open days on farms/free samples
- unemployment
- social events, arts activities
- leaflets with veg boxes
- lobby schools to buy locally
- better for farmer / enviro health

- education – how to cook, preserve, use seasonal veg, do better school meals
- price – undercut supermarkets
- food hub, food fair
- get the public involved in production of food

What new elements could help?

- branding
- change in planning laws to allow people to live/stay on growing land
- vegetable growing pride / recognition
- training / community support
- 'celebrity' endorsement / role model

- a local food linking person – a broker
- a 'really super market' festival
- co-operative market
- consumer lock-in to guarantee prices for growers
- tariffs on imported goods we can provide in the UK
- training & colleges
- national policies that support local food, instead of subsidies for agribusiness
- controls placed on supermarkets monopolies

- teachers / trainers
- learn from past, local history, elders
- csa/food hubs
- low energy delivery
- varied food distribution and collection

- change legislation re food in schools / hospitals
- economic hardship
- polluter pays taxes
- paid organisers (burnt out volunteers!)
- key workers
- composting schemes

- food hub
- more people on land
- appropriate diversity / less meat & dairy, more fruit / nut
- food fairs
- encouragement – money ? social

Headlines in the future!

- vegetable growing on NC
- celeb loves allotment
- car parks now community gardens
- weeding the M5
- totnes energy needs satisfied
- upsurge in vegetarianism
- Sir Rob Hopkins
- George Monibot PM

- public toilet opened in totnes town centre by local farmer 'to catch passing trade'
- 2013 - 70% of schools, hospitals, councils, prisons procuring local food
- prisoners escape from Dartmoor jail through forest garden
- transition prisons across Devon
- 2012 – local boy wins national bean growing competition – country's tallest bean!
- Tesco goes bust as international food systems fail
- Planning policy agreed for hinterland market gardeners permitted to build homes on their land
- Cider harvest festival lasts 7 days!

- 2014 – dartington art college opens
- 2015 – school certificate for all in food/gardening/cooking
- 2016 – marrisons becomes food hub and seed library
- 2020 – slugs in totnes extinct!
- 2025 – totnes self sufficient (this was disputed in the group!)
- 2020 – garden food production soars
- 2025 – population healthier now than since WW2
- 2030 – bananas harvested on vire island

- 2011 – welly boot marriage of composters
- 2010 – homeless self build and self producers on dartington estate
- 2105 – first body buried in burial site cum orchard

- 2020 – voluntary cannibalism – 1st OAP in town stew
 - 2020 – 1000 recipes for leeks and cabbage to blow your mind – get high on local veg!
 - 2010 – car park dug up for forest garden
 - 2015 – environmental arts college landscape mandala gardens
 - 2009 – first TTT summer camp school
 - 200? – fence to keep Torbay out
-
- 500ha of forest garden planted
 - riverford training courses for growers
 - school curricular includes ag/horticulture training in its core
 - allotments for all!
 - Organisation of land owners meets to find land for allotments

Appendix 4. Powering Totnes Beyond Cheap Oil. Notes from an Open Space Day on Energy. Saturday 14th October 2006/

Changing Attitudes

- Talking to as many people as possible – “Do you know oil production is going to go into decline?”
- People not knowing about “Peak Oil”
- Village in Dartmoor – People not open to change. Perceive information and events as an intrusion into their lives – How do we change this?
- £5mn campaign in Hampshire to increase recycling – they issued a questionnaire to find out what people wanted, offered information (what, how, where it goes), and made it easy to do, checking what people put into bins before and after information was issued
- Information to assist change (winning hearts and minds)
- Legislation and enforcement
- Facilities (public transport) and products
- Personal example (genuinely respected people – not just politicians – trusted community figures)
- Children – able to embrace change – school project - Pester power – plays within schools project
- Working with young people – Sixth form colleges – projects that leave the 'energy campaigns behind at schools – Vision for Future competition a multi-media project in conjunction with local council done in Hampshire with an exhibition of local projects
- Community movers and shakers to lead the way – Councillors, Planners, Mayor (phone number is readily available), Shops. Can have personal audience with these people
- Local government have policy and legislation – but need money to support it
- Growing consciousness (100 monkey – when 100th monkey changes, collective consciousness changes)
- Small changes – turning down the thermostat, not having appliances on standby – Benefits the individual saving £'s – People 'ripe' to save energy – Cost of fuel shooting up – Affordable meters to show how much energy appliances are using - Technological changes – thermostats which turn themselves off etc. Needs to be more financially accessible loans/grants.
- Local newspaper story 'Small changes, Big difference' – Getting community leaders and members of public to come forward and pledge to make 5 small changes – Responsibility to take forward with small groups as done in Hampshire project
- Relationship to Earth – Earth and elements are living beings – people need to feel connected to mother earth, water, air, sun, fire
- Having fun – low energy ways e.g. Bonfire parties
- Show as part of TTT “Ancient Futures” by Helena Norberg-Hodge about Ladakh and its changes

- Link ups with organisations/groups/individuals already working and campaigning for energy efficiency 'Get into bed with someone and save energy!'
- More responsibility towards local energy
- Moving away from the idea that energy reduction is 'hard slog'
- Learn from others – Woking is an amazing example of best practise in renewable town – Visit from Woking rep to come and talk to TTT
- Difficult to engage existing systems (e.g. health, education) before people overwhelmed and working to absolute capacity. Therefore we need paid employees to raise awareness e.g. Pay teenagers to talk to other teenagers...
- Tap resources within community – people with money, time, energy
- Focus resources on couple of ideas which will make a big impact – Road show – Enforced/voluntary 12 hour power cut – Newspaper campaign – Energy saving Christmas decorations – Night sky initiative (street lights off)
- ASK people what they want – questionnaires, local forums, meetings – taking the community along
- Wealthy people most prolific users of energy
- Working with schools and community groups to produce TTT play with key messages – To be performed around the district

Water Power for Totnes

Local sites of water wheels we know of that have some infrastructure available and seem obvious choices to reassess, they probably won't generate a lot of power and may be costly to develop. It would be useful to have studies done perhaps a local college or school may be interested in assessing the possibilities.

- Town Mill
- Dartington site on cycle path

We identified 3 possible technologies which could be used once the sites have been assessed for their sustainability

- Traditional water wheel using buckets or blades
- Water turbine
- Archimedes screw

Sources of information and experience

- Finch foundry in Okehampton are sometimes able to use a water wheel to power their foundry
- Micro-hydro company in Somerset have a composite flow turbine for sale and other off-the shelf water power systems
- Intermediate Technology Development Group (I.T.D.G.) concentrate on developing world development but have a lot of infrastructure on small scale renewable technologies particularly micro-hydro

Sharpham estate is interested in repairing the dyke around the salt marsh on the River Dart near Longmarsh which could generate 45kw of energy. Dept of Environment have recently withdrawn funding

What people are doing already?

- Local directory of what local people are doing – could be on TTT website
To generate – their own energy – community schemes
To reduce their use of energy
People who would like to get together to do either of the above
- Monitoring our existing energy consumption. Proposal is to have plug in power and energy monitors available to borrow e.g. from the library
- Tidal turbine that is planned for the Dart – See that this valuable opportunity for learning and disseminating knowledge does not founder for lack of funding

Harnessing the Suns Energy

- Solar collectors for hot water
- Photovoltaic roof tiles, etc
- Streamlining and liberalising (Planning law including consideration for removal)
- Except for listed buildings, AOB and conservation areas – planning permission to be NOT necessary for removable solar energy devices
- Grow bio diverse biomass as fuel
- EVERY new building to implement passive heat solar heat gain
- EVERY building renovation to maximise solar potential
- Legislation for solar (as above) – Education literature to be sent to all people
- Get TV channels to do solar/eco house make over programmes (and highlight financial benefits)
- To include in Home Inspection Packs (H.I.P.'s) a section on education (solar) and how to raise the energy efficiency standard by improvements
- Community bulk buying of solar equipment
- Annual 'Solar Day' to walk around demonstration and exemplar solar houses and buildings

How can we sustain interest in the transition process locally?

- It would help TTT to know of other people who could put up posters, talk to shopkeepers etc
- A large sign to publicise our progress
- Get on local TV and talk about it, go national

- Talking to friends and going to Schilling Up for Power Down evening class on Monday night
- Give an example by the way you live
- Bring new money into this project. Invite people to contribute financially so that those who have time can give their time to make the process happen
- If we make it happen there are lots of people interested in this project further a field who might fund us to get this transition working
- We need money and time
- We need people with time to be supported to do the work
- We need an inside network of people
- Support structure needed
- Vested interest parties which want to stop this process need to be acknowledged and 'taken on'
- Consumers have more power than voters to achieve change
- Should approach vested interests in a way that is positive and encourages them to get involved because it coincides with their own self interest
- We can remind local political representatives and middle managers of large companies of the policy statements of their leaders which are often more in tune with our ideas than they realise
- Need central coordination of ideas – contribute ideas and get information
- Need an effective feedback loop
- Choose identifiable achievable targets that we could work towards

Process for Engaging Local Councils

- As local council tax payers we could instruct our employees at the council that we want them to fund the process
- How can we include all 7000-10,000 residents of Totnes and the people who are vulnerable
- We need to engage in the political process to ensure our council representatives do what we want
- We need to talk to the planners particularly those who will be most likely to obstruct the process
- It would be helpful to have councillors at the Open Space meetings
- Sub group outlines target scheme and list of suggested indicators to monitor and measure
- TTT group refine and adapt scheme
- Contact the mayor to get backing
- Mayor etc ask South Hams District Council (S.H.D.C.) environment group to evaluate scheme and suggest any improvements and alterations
- Get SHDC to adopt and implement scheme

Decentralised Energy Systems

- Encourage council to put renewable on its own buildings
- Needs one community to come forward with an initiative. Focus on a particular area (a local eco-village)

- Planning must lead to maximum standards not minimum i.e. David Gales development in South Morton
- Somerset Council is moving towards local energy company
- Local currency – Kilowatt Dollar
- Communal bath house and laundry, first thing to do!
- Read – Decentralising Power report by Green peace www.greenpeace.org.uk
- Read- Mirage and Oasis report by New Economics Foundation (On N.E.F. website)

Energy efficiency comes first

- Easier to do decentralised energy in newer houses as they are more efficient – in Totnes they are on the outside of town
- First steps could be bath house, laundry, gym, sauna, café, cinema i.e. communal use – Gardens – to encourage interest and easier to implement

Learn from Best Practise

- Learn from best practise – Woking
- Allan Jones inspiring person – Rethought the economics
- PV's and wind - Neighbourhood clusters all linked together

Needs to be taken on board in the national culture

What would be the ideal to power Totnes?

- Energy Descent Plan – A complete design
- Needs planning, permission, legislation, money
- Electrolysis/Hydrogen fuel cells, Solar PV, Wind
- Pump storage for water
- Managing intermittency

Totnes Industrial Estate

- Envision
- Renewable Energy 4 Devon (R.E.4.D.) recently established, things are happening

An Energy Watch Sign

A centrally located sign loosely based on the old church barometer roof fund type signs.

- Purpose - To record and display current and decreasing energy use in Totnes thereby creating an on going feedback loop to the community. This would act as a constant reminder and encouragement
- Type - Digital electronic remote computer updateable

- Positioning - On the side of the civic hall would be ideal. If not somewhere else in town with similar public impact. n.b. Carbon offset (such as tree planting) would be a good idea and could possibly serve as a public symbolic event
- Information Sources - There would need to be an encouragement to report all and every energy saving event which occurs within the local community – ranging from buying a new energy saving light bulb to major council and commercial projects. A potential route for this data flow would be the local primary and secondary schools. There would need to be discussions with the schools to invite their participation and give point to the value of such an exercise *i.e. things that fall within the national curriculum plus community involvement/schools*
- Staffing - There would need to be an individual or group willing to commit time to collation and input of data
- Funding - Local Council
- Name - Energy watch, The Greening of Totnes, Totnes in Transition
- Further Thoughts - Possible issues and considerations are political implications, vested interests, hidden agendas, geographical extent etc
- Future - Idea is scalable and exportable *i.e.* ranging from a few lines in a local news letter to as outlined above and from Totnes to Tunbridge Wells

Community Owned Windmills

- 1.3 – 1.8 MW windmills are certainly now viable
- All cost factors are known – cost of turbine, installation etc – except planning costs (which is the risk, developers have to put up £200k to £250k to get planning)
- So community owned windmills are very interesting to developers
- They will be happy to do a deal on local ownership –
 - community owns turbine and electricity
 - or developer will own windmills or energy generated and pay a fee to community
- These projects are economically viable and will happen, there is no question because they are profitable! Opposing windfarms is now a losing battle, you can stall them but stopping a properly researched scheme is almost impossible.– the issue is who is going to own them
- Farmers are of course interested in anaerobic digesters and also biomass crops
- Savilles have partnered a with consultancy and offer a wind generation and also anaerobic digester service to their customers- large land owners.

- How do benefits go to communities?
- County owned land – management of the resource will take money and expertise – need an entity to raise money

Models of community ownership

- Welsh model – small hill farmers form co-op
- Orkney model – person owns land but turbine and electricity generated is owned by everyone

How to make community windmill – Council owned land and people put money in. Make the windmill into a tourist attraction, use the arts to decorate it, celebrate it, light it up, have viewing platform, and make it an Eden project. Make it purely Totnes

How to identify site

- Wind speed
- Microwave transmitters to check interference.
- Proximity to houses (400 x 600 m from each dwelling)
- Visual amenity – there is now an accepted methodology for establishing this– ask Ian Bright (Somerset District Council) – issues like Landscape character – how many houses, Migration routes of birds, have to be considered.

If you have lots of people doing it you need prospectus – due diligence

Community ownership – will get grants – by owning shares or give everyone a share

First step

- How to set it up – community grows
- Outline commercial vehicle go to Triodos Bank
- Not for Profit community vehicle

Renewable Obligation Certificate – a market in this, power companies will need these as they have an obligation

Community has to define itself – What is it – What it wants

Not for Profit company that will use money to seed other technologies

Models of Ownership – Social enterprise models

Distribution of Energy – ESCO's – Working farm model

Westray Development Trust – Orkney Islands – Sam Harcus, Colin Risbridgen

Wood as Energy

- Landmatters Co-operative (42 Acre Permaculture holding) to host re-skilling course in association with TTT to build a rocket stove (see below about Rocket Stoves)
- Coppice woodland – re-skilling in creating and managing them as a source of firewood
- Find Large scale areas of land to grow firewood such as set-a-side land
- Farmers are a key element in access to land to grow wood as energy
- Awareness needed concerning the efficiency of burning wood (open fireplaces are 15% efficient compared to rocket stoves which are 95% efficient)

Hedge Laying – Devon has more hedges than all the other counties put together a huge amount of firewood is created when a hedge is layed. Farmers could be approached with the possibility of laying their hedges to supply firewood to rural homes or surrounding towns, the firewood would be burnt in efficient ways such as a Rocket Stove (which has no smoke) to heat homes. In addition to this it helps the farmers by making the hedges live stock proof and improves biodiversity.

- Traditional form or managing land
- Re-skilling – massive amount needed to teach hedge laying (Devon Rural Skills teach it)
- Funding (Supplied by DEFRA Dept for Environment, Fisheries and Rural Affairs)
- Community group to approach farms to manage hedges and supply firewood such as Community Supported Farming
- Creates rural employment

Carbon Off-setting

- Moor trees – raise capital by offsetting, trees planted to offset peoples use of carbon
- Raise awareness
- Only used as transition
- Efficiency vs less

Indicators that can help us identify how well we are doing in reducing our energy use in Totnes

- Number of energy efficient homes in Totnes – judged by defined standard
- Do sampling around the town to find out how much fun people are having reducing their energy use – do they feel coerced or are they finding the process rewarding. Specific examples to be sought as to how it is rewarding e.g. Less stress driving to work, talking to neighbours more
- How many conversations with your neighbour
- How many miles less are you driving
- Are you reducing your household budget
- Increased sightings of bicycles
- Number of road accidents

- Number of sales of insulation materials of Travis Perkins
- Number of applications for insulation grants
- How many hours gardening done in local schools
- Renewable energy science
- How many carrier bags are given out in the town – a Totnes resident is doing a survey
- Weight of rubbish sent to landfill and recycling centre
- Quantity of pollution especially big road junctions
- Reduction of energy bills for schools, hospitals, streets, all public buildings
- TTT how many local schools include it in the curriculum planning

Important Considerations

- We need to think about how we maintain the towns income while were reducing our energy use
- Mutual respect and awareness of our interdependency are indicators that this process is working i.e. you can encourage someone more effectively by being the kind of person they would like to be, thus encouraging them to take the same action, rather than telling them what actions to take
- Reward system – smiley face or something that indicated how much energy you have saved, how much you have reduced your household budget to display on house, business, car, school, bicycle etc
- Ask schools to do a survey of how many bicycles, how many cars with more than one occupant, how many pedestrians etc
- Ask Princes Trust projects to do surveys etc

Working Group on Sustaining the Momentum of TTT

- Provide a large in your face Church restoration Fund barometer type display in a prominent position in the town, to keep the consumption of energy by the whole town in the forefront of every residents mind
- Provide a display associated with the above to give more comprehensive information, to give examples of what residents have just done to reduce their energy use – ‘This weeks 10 tweaks’ and what moves people have actually done to install renewables. This should involve all schools in gathering information and act as a positive feedback loop to sustain and increase the momentum of TTT

Totnes Renewable Energy Supply Co (T.R.E.S.C.O.)

- There are real commercial opportunities for renewable energy generation on a meaningful scale at a community level. A community organisation adds value to the process of implementing these new technologies. In addition a community organisation can ensure optimisation of the socio-economic benefits from renewable energy to the local community.

- Realisation of these opportunities requires a constituted organisation that can give clear direction to a commercial vehicle with responsibility for implementation of renewable energy projects.
- There are many community renewable energy models in existence and further work needs to be done to determine which model works best within the context of the Totnes community.
- Establishment of T.R.E.S.C.O. requires a viable commercial project to generate income to sustain the company and the easiest one to start with is a commercial wind turbine project which is being further investigated for technical viability
- 90% of public are aware of global warming but people feel dis-empowered participation in TRESKO enables people to make a meaningful contribution

What can I do – Personal Plan

- Energy saving light bulbs
- Loft insulation
- Cavity wall
- Draft excludors
- Energy efficient appliances
- Timers and thermostats
- Turn things off
- Cut down on use
- Just fill kettle for your use
- Pressure cookers
- Streamers
- Lid on pans
- Good controls on appliances
- Solar
- Put a jumper on
- Write a plan for ourselves or with friends/collegues
- Car share
- Support
- Sign up to Global Action Plans
- Turn lights off
- Neighbourhood plan
- Grow own food and wild food
- Tell people and celebrate
- Hitch hiking
- Corn starch bags
- Register stories in local press of peoples achievements
- 5 small pledges
- Use Less
- Use park and rid or car share organisations
- What do I need to put my personal plan in action

- Guidebooks
- Being local based
- Urge council to be more green itself like others are
- Find a 'champion' in the council orgs
- 2 way information exchange – Whats available and what folk want
- What support from council?
- Travel – Legislate with incentives and penalties and permits
- Travel – Facilitate flexible hours and working systems (remote home workers use telephone and webcam
- Travel – Leisure – air efficiency – tweaking what is

Appendix 5. A Condensed History of Totnes

The beginnings of Totnes can be traced back to the 10th century and the establishing of the town as a fortress town. The name, Totnes, arises from two Saxon words, *tot*, meaning look-out, and *nais*, meaning nose, reflecting its early geography as a 'nose' of land projecting into a flooded valley (Clifton-Taylor 1978). Its position on the River Dart and its good quality land made it a strategically important site. Shortly afterwards, Totnes Castle was built, initially in wood and earth, and later in stone, which is still one of the town's distinctive landmarks. Also built was a Priory, which lasted until the Dissolution, and upon which the town's Guildhall was subsequently built.

During the Medieval period, Totnes became a very prosperous market town. Its period as a wealthy town peaked during the reign of Queen Elizabeth 1st, due in part to the wool trade and to extensive trading with Spain, Portugal and France. It was especially attractive to traders given its river-based transport links and also the fact that it was a safe town, guarded by soldiers (Saunders 2000). This period of wealth led to many of the fine merchants' houses which are a significant part of the town's architectural appeal, many of which still exist and are why it is seen as a place of national importance by organisations such as English Heritage and the Civic Trust.

The 18th century saw the beginning of what turned out to be 200 years of calm and stability (Russell 1964). The cloth industry was replaced, first by tin, and later by pilchards, which were both landed and processed (salted and barrelled) in Totnes. The cloth industry had all but dwindled, not just in Totnes but in Devon

as a whole (Totnes Museum Society 2003), and farming was by now a far more significant employer with half the male population employed in farming (Clifton-Taylor 1978). With the establishment of the Bank of England and the nation as a whole becoming far more economically stable, Totnes became a town populated by the middle class and the gentry, who lived from savings earned elsewhere. Daniel Defoe, writing of his visit to Totnes, wrote that "Totnes has more gentlemen in it than traders of note" (Saunders 2000).

By the early 19th century however, due to long-running legal action with a local landowner, the town was virtually bankrupt and had huge problems with corruption. A Royal Commission which investigated Totnes at the time concluded that the Borough had "disregarded its municipal duties and neglected the management of its affairs" (Saunders 2000:22). The town found itself in the economic doldrums, seemingly neglected by the entrepreneurial spirit which had so defined the preceding century.

In the 19th century the town's fortunes began to revive with the introduction of turnpike roads, which while not popular, raised money for much needed road improvements. This improved the town's accessibility, which was then greatly improved again in 1847 with the arrival of the railways. However, according to Clifton-Taylor (1978), the railways brought little else. He writes "to many towns, the railways brought new industry, wealth and, all too often, ugliness. To Totnes it brought none of these. It led to the disappearance of the town's centuries-old river traffic without providing any fresh trade in its place" Clifton-Taylor 1978:141).

In spite of the new rail links, commercially speaking, as Saunders (2000:30) puts it, "the river remained the main artery of commerce", the town exporting copper and cider among other things. Other improvements arrived during the 19th century, such as the gasometres (which turned coal from South Wales into 'town gas') which allowed the erection of 43 street lamps in 1836. Even so, population fell in the town, and between 1840 and 1914, the population declined and very few new houses were built (Clifton-Taylor 1978). The 20th century, economically, has seen businesses rise and fall. Reeves Timber importers, which ran from 1891, closed in 1995 (Lavine 2009). Symonds Cider, Harris Bacon factory, Dawes Creamery (later Dairy Crest) and Tuckers Toffee, and more recently the nearby Dartington College of Arts, have all come and gone (King 2008).

One of the key elements in the town's recent history was the creation in 1923 of the Dartington Hall Trust. Dorothy and Leonard Elmhirst purchased the 1000 acre estate which had fallen into considerable disrepair, with the intention of creation an experiment in arts, culture, land use and social regeneration (Young 1996, Cox 2005). Some interesting insights into the early days of Dartington emerge from the oral histories conducted for this research. In an oral history interview, Douglas Matthews recalls the impact that the arrival of the Elmhirsts had. "Dartington Hall was just a relic, the roof of the Great Hall was falling in, and I used to know the manager of DH Limited (the initial company set up to oversee the development) very well, and he told me that the Elmhirsts put £13 million, in one fell swoop, into the kitty, so that was very helpful! £13 million meant a hell of a lot in those days, my God!"

Dartington grew to create many businesses and was at the forefront of research into new forms of agriculture. It was also home to Dartington School, based at Foxhole, which was started originally to provide a school for the Elmhirst's children. Although nationally the school developed a reputation for being a leading centre of educational experimentation, locally it was viewed with a fair degree of suspicion. Many of those interviewed talk of the scandal felt about Dartington in the 20s and 30s, because the perception was, as one interviewee put it, "it was all stripping off and bathing in the river and all that". It does prove harder to pin down anyone who actually witnessed this, but Andy Langford recalls many of his male schoolmates who lived in Dartington village making regular trips to the river on the off-chance of catching sight of such a thing.

Other people also found their initial suspicion and scepticism about Dartington tempering over time. Marion Adams recalls that growing up in a working class family in Totnes, they didn't have much to do with Dartington. "It was very much them and us, but I think because Dad was a journalist with the Totnes Times I got to go up there an awful lot. Dartington was very much the arty-farty set, it became more 'alternative' in later years, but at the time don't forget it was Dartington Hall School. They had some very madcap ideas at the time, but when you look back now and think, it is nothing these days!"

Section 7.3 of this research will explore in depth lessons that can be learnt in terms of resilience from the town's recent past, through oral history interviews exploring the period immediately following World War 2. Interviewees were asked to describe, in brief, the town in the 1950s and early 1960s. It is fascinating to note how their recollections vary. Alan Langmaid (now Museum

Administrator of Totnes Museum) offered his description of the town at that time. "The whole of Britain was a tired, weary, drab place. Totnes was empty. It was dirty, and like everything else it was tired. Nobody could afford anything, very few people had cars. We had no car; we didn't even have a telephone or a television". This is, however, at some variance with Ken Gill's recollection of Totnes as having "the feel of a prosperous town", and also David Heath, who told me "when I was growing up in Totnes in the late 40's and 50's it was a thriving market town well served with a wide range of shops of that time. Large numbers of people came in to shop from the surrounding villages on market day and generally the town had a feel of prosperity about it".

Totnes, 60 years on, finds itself an economy based on tourism, a number of small and medium enterprises, and not much else. Many people now travel to Exeter and Plymouth, or even to London, for work. The use of the river for importing goods has all but ceased, being used more for recreation and tourism than for commerce. As King (2008) puts it, "the problem is not that old industries are fading, but that nothing of substance has been put in their place".

Appendix 6. Processed data from the survey.

Data preparation

On receipt, the database had 223 rows, but 4 rows were completely blank (row 23 and rows 58 to 60). These 4 rows were deleted giving 219 respondents to the questionnaire. Most variables had some cases where no answer was given - these had been coded as "98". These codes were generally recoded as "missing" within SPSS. Some variables had a small number of cases which had been miscoded. These miscodings were recoded as "missing" within SPSS. Some variable names were changed to be more memorable.

Analysis

SECTION ONE. ENERGY

q1. How concerned would you say you are by last summer's rises in the cost of energy?

	Number (%)
Very concerned	86 (41)
Concerned	117 (55)
Unconcerned	7 (3)
Completely disinterested	2 (1)
Total	219 (100)

No answer given: 7

q2. How concerned would you say you are about climate change:

- Globally

	Number (%)
Very concerned	113 (53)
Concerned	80 (37)
Unconcerned	15 (7)
Completely disinterested	6 (3)
Total	219 (100)

No answer given: 5

• Locally

	Number (%)
Very concerned	77 (38)
Concerned	98 (48)
Unconcerned	23 (11)
Completely disinterested	6 (3)
Total	219 (100)
No answer given: 15	

q3. How concerned would you say you are about the security of the UK's energy supplies?

	Number (%)
Very concerned	71 (35)
Concerned	107 (52)
Unconcerned	23 (11)
Completely disinterested	3 (1)
Total	204 (100)
No answer given: 15	

q1.- q3. combined.

	Number (%)				Total	No answer given
	Very concerned	Concerned	Unconcerned	Completely disinterested		
How concerned would you say you are by last summer's rises in the cost of energy?	86 (41)	117 (55)	7 (3)	2 (1)	219 (100)	7
How concerned would you say you are about climate change - Globally	113 (53)	80 (37)	15 (7)	6 (3)	219 (100)	5
Ditto - Locally	77 (38)	98 (48)	23 (11)	6 (3)	219 (100)	15

How concerned would you say you are about the security of the UK's energy supplies?	71 (35)	107 (52)	23 (11)	3 (1)	204 (100)	15
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q4. Do you feel well informed about energy issues?

	Number (%)
Very informed	33 (16)
Informed	136 (64)
Uninformed	37 (17)
Completely uninformed	6 (3)
Total	212 (100)
No answer given:	7

q5. How many light bulbs in your home are low energy bulbs?

	Number (%)
None	12 (6)
A few	25 (12)
Some	51 (24)
Most	80 (37)
All of them	49 (23)
Total	217 (100)
No answer given:	2

q6. Would you say that, compared to the national average, the carbon dioxide emissions per person in the South Hams are:

	Number (%)
High	26 (13)
Medium	140 (68)
Low	39 (19)
Total	205 (100)
No answer given:	14

q7. Would you know, without looking, the depth of your loft insulation?

	Number (%)
Yes	85 (42)
No	117 (58)
Total	202 (100)

No answer given: 17

q8. If yes, what is it (in centimetres)?

	Number (%)
0 - 5	10 (14)
6 - 10	27 (37)
11 - 15	13 (18)
16 - 20	9 (12)
21 - 25	4 (5)
26 - 30	4 (5)
over 30	6 (8)
Total	73 (100)

No answer given: 146

SECTION TWO. FOOD

q9. Are the meals you eat cooked at your home using fresh produce?

	Number (%)
Always	49 (23)
Mostly	157 (74)
Seldom	7 (3)
Never	0
Total	213 (100)

No answer given: 6

q10. Does a member of your household grow some of the food you eat? (If "no", please go on to question 14.)

	Number (%)
Yes	90 (43)
No	119 (57)
Total	209 (100)

No answer given: 10

q11. How would you rate your skills in growing fruit and vegetables?

	Number (%)
Excellent	14 (11)
Good	71 (55)
Poor	36 (28)
Very poor	7 (5)
Total	128 (100)

No answer given: 91

q12. Do you have an allotment?

	Number (%)
Yes	10 (8)
No	119 (92)
Total	129 (100)

No answer given: 90

q13. Which local or national organisations do you get support from with skills, seeds or gardening advice?

(listed...)

q14. Within what distance of Totnes would meat or vegetables need to have been grown/produced for you to consider them "local"?

	Number (%)
Immediately adjoining the town	9 (4)
As far as 10 miles	83 (40)
As far as 30 miles	42 (20)
As far as Plymouth	17 (8)
Within the South West	45 (22)
British produce	7 (3)
Dont know	5 (2)
Total	208 (100)

No answer given: 11

Comment: The median answer was "As far as 30 miles".

SECTION THREE. TRANSPORT

q15. Do you have regular use of a car? (If no, please go to Question 20)

	Number (%)
Yes	181 (85)
No	33 (15)
Total	214 (100)
No answer given: 5	

q16. Roughly how many miles do you estimate that you travel each year by car?

	Number (%)
0-1000	22 (13)
1001-2500	18 (10)
2501-5000	41 (23)
5001-10000	69 (39)
10001-15000	22 (13)
15001-20000	2 (1)
20001-25000	2 (1)
Total	176 (100)
No answer given: 43	

q17. Of that, what percentage would you say is related to WORK?

	Number (%)
0-20%	64 (38)
21-40%	27 (16)
41-60%	22 (13)
61-80%	36 (21)
81-100%	19 (11)
Total	168 (100)
No answer given: 51	

Of that, what percentate would you say is related to LEISURE?

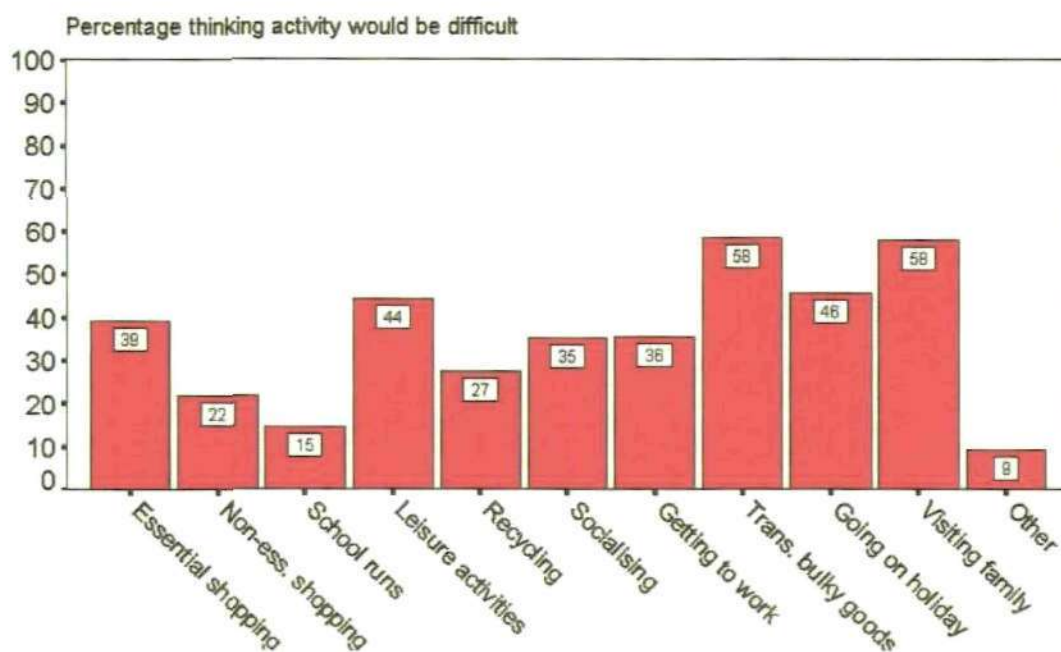
	Number (%)
0-20%	45 (26)
21-40%	34 (19)
41-60%	34 (19)

61-80%	11 (6)
81-100%	52 (30)
Total	176 (100)
No answer given: 43	

Of that, what percentage would you say is related to TAKING CHILDREN TO SCHOOL?

	Number (%)
None	130 (75)
0-20%	21 (12)
21-40%	12 (7)
41-60%	7 (4)
61-80%	3 (2)
Total	173 (100)
No answer given: 46	

q18.If you had no car, which of the following do you think you would find difficult to do? (please tick as many boxes as appropriate)



q19. If you are in employment, how difficult would it be for you to do some or all of your job from home?

	Number (%)
The nature of my work makes it impossible	72 (44)
Very difficult	8 (5)
Difficult	7 (4)
Possible	7 (4)
Straightforward	26 (16)
I am not in employment	45 (27)
Total	165 (100)
No answer given: 54	

20. If employed, have you discussed the possibility of doing some or all of your work from home with your employer?

	Number (%)
Yes	19 (11)
No	21 (12)
Not a relevant question	133 (77)
Total	173 (100)
No answer given: 46	

q21. When you go shopping in Totnes, which mode of transport do you usually use to get to and from the shops? (you can tick more than one if appropriate)

	Number (%)
Private car	135 (62)
Lift share	9 (4)
Taxi	8 (4)
Bus	27 (12)
Cycle	26 (12)
Walk	144 (66)
Rickshaw	1 (0.5)
Other	1 (0.5)
I never go shopping in Totnes	2 (1)
Total responses	353

q22. (This question is only for those who answered No to Question 16). Do you find living where you live without a car to be;

	Number (%)
Easy	19 (45)
Awkward but manageable	9 (21)
Difficult	10 (24)
Almost impossible	4 (10)
Total	42 (100)

No answer given: 177

SECTION FOUR. THE LOCAL ECONOMY

q23. Do you consciously tend to use local shops in preference to national chain shops? (by local shops we mean shops that are not part of a national chain, i.e. Morrisons, Somerfield, WHSmith and Boots)

	Number (%)
Always	30 (14)
Often	105 (49)
Occasionally	76 (35)
Never	5 (2)
Total	216 (100)

No answer given: 3

q24. Could you say roughly how much, in monetary terms, of your weekly shop is from non-chain shops?

	Number (%)
None at all	5 (2)
A little	64 (30)
Some	96 (45)
Most	41 (19)
All	7 (3)
Total	213 (100)

No answer given: 6

q25. How would you feel about a new national supermarket chain store opening in Totnes?

	Number (%)
Delighted	24 (11)
Dont mind either way	57 (27)
Wouldnt be a good thing	64 (30)
It would be dreadful	65 (31)
Total	210 (100)
No answer given:	9

q27. When you go shopping, which of the following choices do you look for? (Please number in order of priority, with 1 as most important):

	Number (%)					
Rank	Local	Organic	Fair Trade	Good Quality	Low price	Brand
1	30 (21)	19 (15)	14 (11)	70 (47)	28 (20)	2 (2)
2	31 (21)	19 (15)	13 (10)	38 (26)	41 (30)	13 (10)
3	38 (26)	28 (21)	39 (29)	13 (9)	11 (8)	16 (12)
4	28 (19)	25 (19)	33 (25)	19 (13)	11 (8)	11 (9)
5	16 (11)	26 (20)	25 (19)	9 (6)	36 (26)	11 (9)
6	2 (1)	14 (11)	9 (7)	0 (0)	10 (7)	76 (59)
Total	145 (100)	131 (100)	133 (100)	149 (100)	137 (100)	129 (100)
Mean rank:	2.83	3.47	3.52	2.05	3.12	4.89
No answer given:	74	88	86	70	82	90

Comment: There was a large proportion of non-reponders (about one third). The average ranking in the reponders was in the order: Good Quality, Local, Low price, Organic, Fair Trade, Brand.

q28. Have you ever heard of the Totnes Pound? (if no, please go forward to Community Life below)

	Number (%)
Yes	188 (88)
No	25 (12)
Total	213 (100)
No answer given:	6

q29. If yes, do you ever use the Totnes Pound?

	Number (%)
Regularly	4 (2)
Occasionally	26 (13)
Rarely	22 (11)
Never	150 (74)
Total	202 (100)
No answer given: 17	

q30. What do you see as the purpose of it?

(Various answers given)

SECTION FIVE. COMMUNITY LIFE

These questions explore the extent to which you feel an active part of your community, and how much you feel that your involvement in community activities makes a difference.

	Number (%)				Total	No answer given
	Strongly agree	Agree	Disagree	Strongly Disagree		
I feel adequately included in public consultation processes on major planning decisions that affect the town	7 (4)	94 (47)	77 (39)	21 (11)	199 (100)	20
It is hard getting my voice heard by those who make decisions that affect Totnes	24 (12)	92 (47)	75 (38)	5 (3)	196 (100)	23
I feel that in the event of a crisis, the community of Totnes would pull together and work together	45 (22)	128 (62)	30 (14)	5 (2)	208 (100)	11
The sense of community I feel from my neighbours has decreased over the past few years	17 (8)	52 (25)	103 (50)	32 (16)	204 (100)	15
I would describe my outlook on the future of this community as optimistic	26 (13)	133 (67)	40 (20)	1 (.5)	200 (100)	19

q31. Have you ever heard of the organisation Transition Town Totnes? (if no, please go forward to Question 34)

	Number (%)
Yes	158 (75)
No	53 (25)
Total	211 (100)
No answer given: 8	

q32. Do you ever participate in any of its events/projects?
If 'Yes' to q31:

	Number (%)
Never	93 (59)
Occasionally	56 (35)
Regularly	6 (4)
Often	3 (2)
Total	158 (100)

q33. If so, which? (Please tick as many as appropriate)
If participating in TTT events, i.e. 'Occasionally', 'Regularly' or 'Often' to q32 (n = 71):

	Number ticked box (%)
A talk or workshop	39 (55)
The Garden Share Scheme	5 (7)
The Totnes Pound	24 (34)
One of the working groups	14 (20)
Transition Tales	4 (6)
Tree plantings	8 (11)
EDAP	8 (11)
Other	11 (16)

q34. Do you feel that the work Transition Town Totnes is doing is relevant to your life and to your concerns?

If 'Yes' to q31:

	Number (%)
Highly relevant	27 (19)
Relevant	62 (43)
Irrelevant	41 (28)
Completely irrelevant	14 (10)
Total	144 (100)

No answer given: 14

SECTION SIX. ABOUT YOU

q35. May I ask your age?

	Number (%)
Under 18	7 (3)
18-30	20 (9)
31-45	56 (26)
46-60	62 (29)
Over 61	71 (33)
Total	216 (100)

No answer given: 3

q36. Please circle whichever of the following statements most closely reflect your views.

(Please circle the answer that most closely reflects your thoughts)

	Number (%)				Total	No answer given
	Strongly agree	Agree	Disagree	Strongly disagree		
I consider myself a person with strong religious/spiritual beliefs	32 (15)	67 (32)	70 (33)	40 (19)	209 (100)	10
The things I own say a lot about me and how I'm doing in life	14 (7)	79 (38)	89 (42)	28 (13)	210 (100)	9

Buying things gives me a lot of pleasure	14 (7)	83 (40)	85 (41)	25 (12)	207 (100)	12
My life would be better if I owned certain things I dont have	12 (6)	40 (20)	107 (53)	44 (22)	203 (100)	16
I consider myself to be a frugal person	16 (8)	102 (51)	71 (36)	10 (5)	199 (100)	20
Spending time with family and friends is of great importance to me	137 (65)	65 (31)	7 (3)	3 (1)	212 (100)	7
It is important to keep up with fashions in clothing and hairstyles	6 (3)	24 (11)	102 (48)	81 (38)	213 (100)	6
I am adaptable and can turn my hand to new skills fairly easily	66 (32)	105 (50)	34 (16)	3 (1)	208 (100)	11
In general, I would say that I am satisfied with my life.	71 (34)	128 (61)	12 (6)	0 (0)	211 (100)	8

q37. In which of the following skills would you say you feel reasonably competent?

	Number ticked box (%)
Keeping small livestock	44 (20)
Making basic house repairs	131 (60)
Growing food	94 (43)
Repairing clothes	109 (50)
Cooking	190 (87)
Painting and decorating	151 (69)
Storing garden produce (i.e. food crops)	51 (23)

The number of skills ticked is given in the following table

Number of skills	Number of respondents (%)
0	11 (5)
1	21 (10)
2	33 (15)
3	46 (21)
4	42 (19)
5	34 (15)
6	17 (8)
7	15 (7)
Total	219 (100)

q38. Finally, how many hours of television would you say you watch a week?

	Number (%)
0 - 5	52 (24)
6 - 10	54 (25)
11 - 20	58 (27)
21+	45 (21)
I don't have a television	8 (4)
Total	217 (100)
No answer given:	2

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