

ECO TOWNS, COMPLEXITY AND UNDERSTANDING.

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To meet the twin challenges of housing shortages and climate change, the previous labour government developed plans for ten 'Eco-town'; communities of at least 5000 homes, developed within the principles of environmental sustainability (Department of Communities and Local Government, 2007). Although the new Coalition government has halved some of the funding towards new proposals, and the housing minister Grant Shapps has promised that only developments that have local support will go ahead, the indications are that many of the existing plans will be allowed to continue. This raises several issues. Firstly, that eco towns need to have a strong degree of sensitivity to existing local communities, and secondly, that eco towns need to be able to achieve the goals that policy has for them in terms of sustainable living and housing targets. The UK has a long history of building new communities, but the current form of 'eco-towns' represents a new and interesting development and the contributions that these conurbations may make to sustainable living is a vital area of investigation.

This paper will address the ability of these proposals to meet their targets through an analysis of the experiences of previous generations of new town in the UK, the rest of Europe, and in the US. We will then look at the lessons learned from this period, namely, that often the goals in place at the outset were not met, or were subjected to unintended consequences. Some of these outcomes provide specific lessons, but perhaps more helpfully we can also make some more theoretical learning from previous planned communities in the UK and further afield. This paper will explore the theoretical insights from past New Town developments through the lenses of complexity theory and emergence, problematising the effectiveness of teleological and goal driven policy. In particular, it will draw on Prigogine and Stengers (1985), Bergson (2004) and Mead (1967) to address identity, sustainability and social capital to answer the question of how eco-towns can achieve their goals of sustainable social and natural environments, both in relation to the new settlements, but also in terms of the often neglected existing communities. The paper will call for an approach based on lateral power relationships of mutual understanding, co-evolution and adaptive learning, and suggests that an understanding of the narratives of identity of all parties involved may provide a way to do this.

The first part of the paper will discuss central government proposals for eco-towns, the ideas underpinning the projects, and the intended set of outcomes that the proposals are projected to have. This is a major initiative with a clear set of goals, which draws an ideal comparison with the post war New Towns, in Europe and the US. These too, were major housing developments, designed to meet a shortage in the supply of housing, and often, to improve living conditions or alter less desirable living practices in specific ways. We will assess the extent that the New Towns were able to achieve the visions that planners had at the outset of their inception, and the reasons behind this, finding that the complications of the New Towns calls for a theoretical perspective based on something other than the mechanistic and the hierarchical, and to this end we next move to theories which explore the creation of structures out of change. The final part of the argument moves this into the realm of human subjectivity and the meanings that individuals and communities take from their

environment. From these meanings we can start to understand what ‘fuel’ there is within a given environment to facilitate directed, adaptive growth and development. This recasts power within the system from sets of hierarchical structures, to lateral, multi-dimensional power. In this framework, planning for major projects like the eco town should put aside utopian goals for a deeper understanding of the interactions and motivations of the communities and other actors to explore how these can be adapted to facilitate ecologically sustainable practices in new communities.

Eco towns and policy discourse

The eco-towns in the UK were first mooted in the context of extremely high house price inflation, where the relationship between income and price of accommodation had become very stretched. The *Eco Town Prospectus* (Department of Communities and Local Government, 2007) contextualizes the situation as having seen a doubling of house prices in the previous ten years, and a trebling over two decades, with every indication that housing could well reach ten times average incomes over the next decade unless drastic measures were taken. This became an issue particularly as certain key workers were priced out of popular housing areas, such as in the South East, and a few other localities characterised by high ratios of income to property price.

Clearly affordability was an issue, but also at stake were the environmental costs of further house building. The New Labour Government had made a strong commitment to sustainable development, and had set out its strategy in the 2005 White Paper, ‘Securing the Future: Delivering UK Sustainable Development Strategy’ (DEFRA). The white paper made clear that its version of sustainability incorporates the interplay between the natural environment, people and communities; and the economy, and which is coherent with the international agenda, led by the United Nations (UNEP, 2011). Leaving aside the need for additional housing, the Stern Review had, also in 2007 (Stern, 2007) put forward an argument that not only is climate change a very real problem, but that the economic costs of inaction would far exceed the costs of addressing mans role in catastrophic climate change. The approach to tackling this issue fell within the international norms adopted since the 1987 Brundtland agreement and enshrined in the Rio Agenda 21, which saw the problem of sustainable development as something that economic development and growth could help to mitigate (UN Department of Economic and Social Affairs, 1992). This perspective is encapsulated in the concept of ecological modernization (Baker, 2007) whereby the bulk of our contribution to reducing impact on the planet, and thereby CO2 emmissions, is not about any kind of reduction in living standards, or dramatic change to our way of life. Rather than be about using *less* resources, the emphasis is on finding technologically innovative ways to be able to maintain a rise in standards of living, in sympathy with the natural environment. This may be through greater cleanliness on behalf of industry, but it could also be about finding, developing and harnessing forms of energy that are more sustainable than current reliance on fossil fuels.

Eco towns fit neatly into this discourse. These were to be privately developed communities of between 5000 – 20,000 homes, with between 30-50% of housing to be designated as affordable, with a range of housing to rent or buy, and with involvement of social landlords. The development should incorporate enough

renewable technologies for the town as a whole to be classified as ‘zero carbon’, and should have at least one specialism in the field of renewable technologies. They should be attractive, and livable spaces, incorporating a good range of facilities, including schools, shops, leisure spaces, business spaces and infrastructure. There will also be a management body to provide development and support for residents and businesses.

Alongside green spaces to enhance biodiversity, the developments will be designed in such a way as to minimize car use and support low carbon lifestyles, with greater attention to sustainable forms of waste and water management than is ordinarily found within new developments. Housing will be well designed, incorporating means of minimising environmental impact, and developed to levels 5 or 6 in the Code for Sustainable Homes (DCLG, 2006). The Code includes categories of energy/co2 emissions and usage, water, pollution materials, surface water run-off, waste, health and well-being, management and ecology, introducing minimum efficiency standards, and the ratings run from levels 1 (the lowest) to level 6 (the highest). Finally, stress is laid throughout the document that eco towns should involve and facilitate the active participation of residents and members of the community.

With proposals for eco towns, the government was able to, as it were, kill two birds with one stone. On the one hand, it means that there could be a structured house building agenda to meet a very real particular need. On the other, it meant that there could be governmental support for initiatives which aimed to facilitate sustainable living practices, minimising the impact of an expanding population on the natural environment. Moreover, there is a neat overlay with the popular ecological modernization perspective, which holds that approaches to reducing carbon emissions and so minimising global warming, can be made by technological advances. This sets up a series of power relations that places man as in control over nature, rather than having nature as in control of man – or any kind of symbiosis between the two.

The goals of the eco towns, to promote environmentally sustainable living alongside the need for developing more housing, are laudable. In fact, it could be argued that it is of paramount importance for humanity that the eco towns do their job, and contribute towards a reduction in CO2 emissions. This means that in this early stage, it is imperative for interested parties to ensure that initiatives launched work well. To this end, we will next turn to an exploration of post war New Towns in Europe and the US, to see how they can help us to achieve the goals of this next round of major developments in planned communities. The New Towns are more appropriate comparators than more recent eco towns, as they have been in operation for much longer. Therefore, we are able to explore in greater detail the long term effects, once any initial ‘honey-moon period’ has passed. Further, and as we will see, the New Towns also had particular objectives that planners wanted to achieve. In common with the eco towns of today, many New Towns were planned to minimize car use, but also, many were designed as ‘balanced’ communities, with far greater mixing between the social classes than had been the case previously. The next section will explore how successful the New Towns were at achieving these goals.

New Towns

A study of previous planned communities – in particular those planned with a set of social objectives in addition to the provision of housing, furnishes us with an important lesson. Planners operated in a hierarchical, almost ‘Godlike’ manner, with a real desire to create communities which were not only pleasant to live in, but also, and not unlike eco town planners, contributed to the greater stock of social and public good. Some intended outcomes were met. However unlike the one way, top down type of facilitation gifted by town architects and board members, success involves at least a two way (and possibly, multiple way) process. Consequently, residents, business owners and the like need to feel the need and/or desire to uptake planners intentions. The addition of these extra elements – the residents and workers within a town and their desires and style of living, provides an added complexity to planned communities which means that the best of planning intentions can be subjected to unintended consequences.

The first wave of post war New towns in the UK were developed by the Reith Committee, who were tasked with forming the guiding principles for the establishment of self contained and socially balanced communities, that, influenced by Ebenezer Howard’s Garden Cities movement, were pleasant spaces to live in. (Herald, 1968; Homer, 2000). The idea was that communities would be self contained in that there were adequate employment opportunities for residents reducing the need for commuting in and out of the town.

The towns as a whole were to be split into ‘neighbourhood units’, focused around community infrastructure like schools, shops, parks and community centres. Here the intention was not merely to build a sense of place amongst residents, with vibrant, active communities, but to allow for the building of ‘cross cutting alliances’ (Herald, 1968: 38) between class groups. It was not just the town that was to be socially balanced with a class structure mirroring that of the UK as a whole, but the smaller, neighbourhood unit was to be socially balanced too (Homer, 2000). The overall intention, in keeping with Garden Cities, was that there would be a village feel to urban life and practices. Critics argued that this only provided the opportunity for class mixing, and that close proximity could cause antagonisms (Kuper, 1953), that any interaction was superficial rather than genuine (Wilmott, 1962) or that neighbourhood cohesiveness came at the expense of town cohesiveness (Pitt, 1959), and induced greater social conformity (Hornsey, 2008).

Initially, the will of the planners was assisted by the tight controls that they were able to exercise through what was a government funded scheme, providing subsidized rather than free market housing. This meant that stipulations could be put in place that new residents had to have a job in the new town, in return for cheaper housing. Equally, the New Town development corporations had responsibility for encouraging firms to relocate to provide work opportunities. This was a potentially win/win situation, with a high degree of demand from companies that wanted to move out of overcrowded areas, and take advantage of the expansion opportunities afforded by relocation. As a consequence of this high rate of demand, development corporations could afford to be choosy over which firms would be allowed to the town, and selection was made according to the goals of the development corporations.

The latter piece of social planning was considered to have been successful, and Heraud (1968) suggests may have contributed to agglomerations of dynamic

industries. What worked less well were initial plans for socially balanced neighbourhood units, based around the lure of subsidized housing. Instead, the middle classes and some more affluent, skilled working class prospective residents wanted to be able to buy their own homes rather than rent. Moreover, and despite the significant career advantages of moving to a new town with dynamic employers with associated promotional prospects, they were not content with purchasing properties in socially mixed contexts. Instead, to attract professional classes in particular, development corporations ended up providing specific neighbourhoods for these social groups. This meant, that contrary to initial planning, Crawley ended up having 18 percent of its housing sold on the open market (Heraud, 1968), and so although *towns* had social balance, this was not the case for the *neighbourhood* (Homer, 2000). As a consequence, housing corporations had less control in allocating housing according to need, or enforcing criteria such as having a job in the town before a house was made available (Heraud, 1968). A final set of unintended consequences occurred when professional classes ended up moving out into surrounding villages, rather than remaining in New Towns, compromising the 'self-containment' of the town in terms of minimising commuting (Cervero, 1995; Herald, 1968; Homer, 2000).

What this is starting to introduce, is the notion that the aspiration of planners needs to find some kind of resonance with how people within a particular culture choose to live their lives. Good planning, it seems, can *modify* culture, but not necessarily change it. This is a lesson that has been learnt in innovative New Towns in the United States. Mark Clapson (2002) discusses how the architects of Reston, Virginia envisaged a Garden City with 'country living with town house convenience' (Clapson, 2002: 153) with areas of high density housing alongside parkland and good leisure facilities. However, the project was out of step with the desires of 1960's Americans, who wanted the suburban sprawl that the original planners had been trying to move away from. This was a private sector initiative, so didn't benefit from the subsidized housing of British New Towns, and before long the original architect was replaced by a team more attuned to what Americans wanted to buy. This is a problem shared by the British town of Milton Keynes, where early versions of high density housing (again, alongside parkland and leisure spaces) with public transport infrastructure were abandoned in favour of more popular suburban, car reliant systems (Clapson, 2002). Neither is subsidy an automatic guarantee for attracting population. Some New Towns in France struggled to draw people in, despite support from the central government. This difficulty compromised the ability of planned communities in France to meet their goals of developing polycentric urban cultures, making the new towns 'regional centres' (Tuppen, 1983).

Mark Souther also discusses the tension between the aspirations of planning elites and popular desires in the context of New Orleans East (Souther, 2008). This case study also introduces another slippage that can become overlooked in the drive to implement a vision with no real communicative process with the broader context. Here we hear about how developers planned low rise, suburban type housing in what had been swamp land, which was vulnerable to flooding. Similarly, the success of the earlier Radburn in New Jersey in the 1920's and 30's, suffered from a mismatch between the aspirations of the development, and the institutional context within which it sat. The architects Henry Wright and Clarence Stein drew heavily on Ebenezer Howards 'Garden Cities' coming up with some innovative forms of land use.

However, despite having government support and subsidy, the complexity of land ownership and the institutional environment meant that implementation was difficult and never fully realised (Larsen, 2008).

A further point of note is that of unintended consequences. Of interest especially in the context of eco towns and their commitment to minimize car use by encouraging working within the community of residence, is an extensive study of New Towns throughout Europe and the US. Robert Cervero found that counterintuitively, the most self contained towns had the highest degree of car use (Cervero, 1995). To a strong degree, this apparent anomaly seems to be because many New Towns had good public transport infrastructure built into the plans, which significantly minimizes commuters reliance on the car. This means two things. Firstly, that getting people to abandon the car as a means of getting to work is not just a matter of encouraging the possibility of living and working in the same space. The important factor seems to be investment in appropriate infrastructure.

We are starting to see that hierarchical models driven by particular goals have only a partial success at reaching these aspirations. the failures that have occurred have been because in trying to enforce a particular vision, planners were actually asking too much of the human, natural and institutional environment within which these new towns operated. Planning seems to be able to make a difference, and modify behaviour, but only to a limited degree.

If the experience of previous planned communities can be used as a model for the success of 21st century eco towns, we learn that clear goals and innovative and attractive plans are not enough. This raises the question that if we want to achieve particular objectives, is there anything that we can do differently? The key seems to be regarding contextual fit between new towns and their environment. This leads to a further question whether the lack of 'fit' may be related to the hierarchies of power which place man as the orchestrator of a passive environment, whether we are talking about the physical environment, or the human one made up of prospective new town residents. However, we have seen that in the case of new towns, the contextual environment is by no means passive, which raises the issue of whether ideally eco towns could or should adopt an ontology that involves lateral power relationships and multiple ways of communication between planners and the environment.

This points to a shift from more traditional, man-as-orchestrator types of responses, perhaps as typified by ecological modernization, and towards forms of development that can incorporate lateral dialogue amongst the various elements of the system. In turn, this brings to mind a symbiotic relationship between man and nature, as typified by Jane Bennett (2010). Bennett inserts man inside ecology, rather than outside of it, recognising the entire ecology as a complex system, including the interplay between communities, the environment, and the socio-economy. In turn, this problematises the very linear models of development underpinning planned communities – whether calling for a collapse of class distinctions, or for more environmentally ecological living. The remainder of this paper will explore whether the lateral power relationships of complexity would be a possible model for this.

We will begin by looking at complex systems through Prigogine and Stengers analysis of emergence and adaptation, before considering how this might be achieved in human terms through Mead and Symbolic Interactionism.

Complex Systems

The theoretical underpinning of New Towns – and eco towns modeling, is based on a version of time that unfolds in linear, predictable, and reversible forms, where the universe can be explained independently of human knowledge. Prigogine and Stengers (1985) challenge this Newtonian based mechanical scientific perspective, whereby the human – and indeed biological world, is constructed of closed systems, through an analysis of thermodynamics.

The present here, is not just a point on a given trajectory, but where the future is uncertain and can't be known. The unknowability (or unpredictability) of the future corresponds to the irreversibility of the past – which links to the 'emergent' phenomenon discussed by Smith and Jenks (2006), and the object, or thing, which emerges but couldn't have been predicted at the outset (like water). The irreversibility that Prigogine and Stengers discuss is likened to the reaction of two chemicals – whereby it is impossible to separate a new compound into its original elements. This is because something entirely new has occurred, which provides the image of time as a constant building and changing – or adding and developing, rather than being like a lego village which can be taken apart and rebuilt ad infinitum. Knowledge is just such an irreversible phenomena, since once a thing has become known, it is impossible to 'unknow' it, and the new piece of knowledge acts on the present and future in ways that couldn't have been predicted at the outset. So once something happens, or a change occurs in the present, the things that you end up with in the future are qualitatively different to the things that you start out with.

Prigogine and Stengers explain the structure – and the lack of it – within systems by first addressing the stable and predictable which is set against its opposite. This leads to the claim that life *comes* from chaos and disorder, from disequilibrium. From this instability and uncertainty, life and order starts to emerge: and with it, stable structured systems. They do this by juxtaposing linear thermodynamic systems with far from equilibrium systems.

In its linear form, the structure is 'closed' in that the phenomena operating within the system uses *only* matter within that system. It is limited to the state imposed by its boundary conditions, and will remain this way until something new breaks through the boundaries of its closed form, and injects change into the previously fixed and predictable structures. Far from equilibrium systems are the opposite – although over time, they may become linear and predictable as new emergent structures become fixed and the boundary conditions become closed. What happens, is that something new and different occurs, which disrupts the stability that had previously been present. An interaction with the environment beyond the boundaries of what had been closed may become the starting point for new, dissipative structures – spontaneous structural forms which embody the transformation from chaos to order.

To bring this back to planned communities, we have an entirely new set of conditions that have not yet formed fixed structural boundaries. The boundaries are mobile and

will remain so until perhaps the community has developed some stability over time. But these changes are operating in a lateral way – between the elements of the system, which proceed in an unpredictable fashion. The argument here, is that communities *cant* be planned, as to argue this is to base your ontological foundation on set of knowledge that is contrary to biological development. They might formulate some kind of structural linearity eventually, but there is no way of knowing what forms these emergent structures will take. This seems to be consistent with the experience of new towns. The original conditions were set in place, but how they would turn out was dependent on the unknowable interactions between the molecules (or people) within the system.

The binary opposition of linear and far from equilibrium systems is mirrored by the differences between physics – which sees non-linearity only rarely, and chemistry – where far from equilibrium is practically normal as far as living matter is concerned. This is very important, as it provides a role for life, or the life force as the thing that creates instability and unpredictability and collapses hierarchies of power. It means that there is something unpredictable about life which operates on non-linear time, and which creates self-organizing structures. For life, the environment in which it is set provides an important function. We learn that:

In biological or ecological systems, the parameters defining interaction with the environment cannot generally be considered as constants. Both the cell and the ecological niche draw their sustenance from their environment; and humidity, P.H, salt concentration, light, and nutrients from a permanently fluctuating environment. The sensitivity of non-equilibrium states, not only to fluctuations produced by their internal activity but also to those coming from their environment, suggests new perspectives for biological enquiry. (Prigogine and Stengers, 1985: 167).

Here, we are presented with a set of boundary conditions that rarely manage to become fixed, because the external environment within which they sit rarely does anything but fluctuate. So the system is constantly interacting with, and mediating between what exists, and the external energy that is available, and adapting – or self organizing, accordingly. This recalls Kenneth Boulding's (1981) discussion of evolutionary economics, whereby enterprises, likened to biological organisms, adapt and develop in a mediation between it, and the complex environmental state within which it operates, in order to find a particular 'niche' in which it can grow and mutate. Failure to find such a niche, or adapt to changing conditions, results ultimately in extinction.

For Prigogine and Stengers, new structures, or dissipative structures that arise from initial chaos, like Aristotle's body politic, operate as one organism although made up of many parts. Each molecule, although each containing its individual specificity, acts as though it is informed by the whole system, rather than on an individual level. This also means that the whole organism cannot be reduced to any of its individual parts, and that it is in their coming together that they create something new. The whole is qualitatively *different* to all of the separate elements that are a part of it, it is a new body.

In terms of New towns and eco towns, this means that the town or city becomes an entirely new organism made up, not of planners intentions (although this forms a part of the environment in which it sits), but from the multiple interactions of the

molecules – or people, that populate and work within it. The difference, or the specificity of the town lies within the interactions of a complex array of parts, combined with the broader institutional, environmental and cultural context of a given point in time, which means that each town will always be unique. This is because they all draw from different forms of energy, in a context where infinitesimal changes can become amplified into very different structural trajectories – and we can think of Lorenz’s butterfly effect here. Because of the enormous complexity of the interactions that make up this new organism, it is impossible to take a successful model, break it apart, and try to rebuild it elsewhere. The whole is simply not reducible to its parts, and even if exactly the same conditions were to be provided throughout, there is still no guarantee that exactly the same outcome would be achieved.

This does two things. Firstly, it reinserts man **into** the environment, in the way that Bennett (2010) wants to see, and claims that man is a part of the external whole, not separate to it, in control of it. Secondly, it problematises teleological plans for complex organisms, which set a desired endpoint or social and public good to be met. We can see here, that it cannot be a matter of excellent planning, which can help us to meet these goals, since no amount of planning can account for the highly complex nature of the body that is to be created, because there just is no predictability.

But how does the idea of a tendency towards unpredictability square with social and political theorists that find structures throughout human organisation? The key thing is that structures emerge out of the initial chaos – although we also have to be aware that they are subject to changing environmental (and by environment here, we are not excluding it to the **natural** environment) conditions. Therefore, structuralist sociologists like Emile Durkheim and Talcott Parsons, or Structural anthropologists like Claude Levi-Strauss could find regularities, and enough path dependency to make predictions about society and the way it operates. The concept that makes a difference here, is that of time, and this is what interests William Connolly (2002). For Connolly, the speeding up of time is something that can assist the move towards a more radical democratic pluralism, because it means that encroaches on the structural boundary conditions that we discussed above happen more frequently. This disrupts what had been previously more fixed structures, and allows the space for more democratic forms of political discourse. Indeed, new forms of emergent structures, and what they mean for society in times of rapid technological and social change has troubled postmodern sociologists for decades. We still live in a period of rapid technological and social change. We don’t need to go into a lengthy discussion of how the internet and mobile communications have revolutionized social and political practices over the past few decades to do this. But, this means for planned communities that in such a rapid and constant encroachment of the boundary conditions, there is even less facility for the stable structures to emerge that would make planning a town to be more environmentally feasible. But this does not have to mean that we ditch our aims of achieving more environmentally sensitive ways of living as human beings, or the concept of eco towns as a contributor to that process.

The key to this problem, lies not in what we want to achieve, and dismay at the difficulties in reaching this, but, in a sense, through playing the system at its own game. If the world develops through adaptation and evolution, then perhaps complexity should be the foundation of planning for a more progressive future? In

which case, the question becomes not about deciding what we want, but in learning how to adapt what we already have. But here, we need to *understand* what we already have.

This brings us to a glaring omission in the literature on planned communities, which devotes much time to discussing the aims and outcomes of New Towns, but little if anything about what already existed. In all of the literature discussed above, only one made any mention at all about what type of communities had lived in the space where a town was built. Mark Clapson (2002) glances over the fact that whilst Reston in Virginia had been developed on a previously uninhabited area, several villages had inhabited the place that Milton Keynes was eventually to have been built on. This raises the question of what role original communities played (or could play) in planners intentions. From the lack of attention that these settlements and their inhabitants have received, it would appear that they were on the receiving end of a hierarchical shift in strategic direction. But if we are going to develop some kind of adaptive strategy for eco towns to enhance their efficiency and improve their capacity to meet the objectives at which they aim, this kind of hierarchical dictat is one thing that we should be trying to avoid.

In terms of adaptive development, this generally overlooked group of existing residents seems to have an important contribution to make to eco towns. Firstly, and unlike many of the people that will eventually move to the new towns, they already live in the area, have developed forms of social structures and norms (however temporary in terms of time), and have a relationship with the immediate socio/economic and natural environment.

Although this group are constructed as ‘consultees’, or ‘stakeholders’, or people that the developers would like to keep on board by throwing in sweeteners like nice, and possibly useful bits of community infrastructure, what they are not constructed as is providers of energy. They are not seen as part of the wider environment from which the new eco towns can draw energy from, and interact with. Instead of adapting lateral sets of power relationships between existing communities and new towns, involving and including **all** affected parties as not just people who are affected, but also people who can contribute, the proposals set up hierarchical power relationships. Communities are both outside of the proposals, and at the same time, subservient to the dominance and power of the mighty developers whom it may be difficult to hold to account.

However this means that eco towns are weaker for not being a part of the complete environment, but sitting somewhat outside of it. In this, we have an irony that on the one hand, ‘eco’ as a word connotes a holistic meaning, and on the other, exists outside of the whole. And this contradiction is built into the programme as it stands at the present. To counter this, understanding what the eco towns aim to achieve is not the important factor. The really important thing is that policy makers and planners have an accurate and in depth understanding of where they are starting from, and this involves developing a solid, deep and insightful understanding of the meanings which already exist in the area, which go far deeper than mere surface level consultation.

Understanding

The problem that exists, is one of communication. If we are to find what exists, and what can be adapted and developed to make for flagship projects in sustainability, we have to understand not just the spoken word, but also other ways of conveying meaning, non-spoken forms of communication such as symbols and gestures. To achieve this, G.H Mead (1967 [1934]) is particularly helpful. Like Prigogine and Stengers, he sees society as being irreducible to individual behaviour, and as a complex whole that is not divisible to its elements. Mead's social psychology is heavily influenced by Bergson, with whom he corresponded. Communication lies at the heart of his theory of symbolic interactionism, which places a strong emphasis on the role of the unconscious in an analysis of human behaviour, a baton later to be picked up by Ervin Goffman, and Herbert Blumer.

For Mead, an **act** is an outward manifestation of the unconscious, so understanding a social group moves far beyond speech, to an analysis of acts themselves. So, for example, when an individual approaches a hammer, the central nervous system has already initiated the process whereby that person will seize the hammer. The attitudes, perceptions and sets of knowledge that inform these processes before the act itself, providing the information that this act is the right one to do in a given set of circumstances. It is these subconscious perceptions that are interesting for a study of understanding.

From here, Mead turns to communication itself: to language, and gestures, which he considers, through Darwin, to be a means of expressing communication and attitudes. In support, he provides us with the example of facial expressions, which convey a particular set of emotions, and betray the conscious state of the person. This initiates a chain of reactions, whereby we behave in certain ways due to our interpretation of particular gestures and symbols. For example, at a boxing match, each opponent is interpreting the actions and gestures of the other in order to determine what they may or may not do, so they can respond accordingly. This means that the social act is an interaction between individuals own personal experiences, which are derived from the contextual environment and society that their social learning has come from, and which go on to inform the particular acts and forms of communication that persons come to use. Mirroring the ideas from complex systems, what we have here is that communities are a part of their environment, operating in a direct mediation with it. In order to appreciate the adaptive capacity of existing communities, we need forms of communication that can grow to understand these communities and the interactions that take place.

Here, the interaction with the symbol takes place over two levels. On the one hand, we have the intellectual element, the learned response, and on the other we have the social and qualitative part – that of meaning. Communication is a social process whereby we convey affect and mediate social situations through an understanding of what the other is trying to say. Goffman (1959) takes this a step further, when he talks of how people use symbols and meaning to convey a particular presentation of the self to others, likening it to individuals 'front of stage' persona's, and their 'backstage' self. This is not meant in a duplicitous way, intending to deceive, but is based on an interpretation of the acts and gestures of the other, in order to be able to understand what it is that they want, and how the particular interaction may be more expedient. To illustrate, a person may ask another if they are feeling alright. The second person may judge that this was a superficial query, so provide a standardized,

'yes' type answer. But this is based on a particular interpretation of what the other person wanted, perhaps overdetermined by not wanting to be a bore or burden. In fact, there may have been a problem of communication on the level of interpretation, and the other may have been more than willing to listen to a tale of woe.

Moving back to Mead, each different space, and each different set of social interactions carries with it its own **particular** set of meanings. At times, this particularity is obvious, for example, the meanings attached to objects in a legal environment are different to those attached to the same objects in a school. Equally, even within similar type environments, the meanings attached to particular objects can be very different – so the cultural meanings – or 'in jokes' in one primary school, may be very different to those in another school, not too far away.

These meanings exist deep in the area prior to conscious thought, in the central nervous system **before** any decisions to action. And this is important in relation to eco towns and exploring how to support the adaptation of rapidly expanding communities, along environmentally sustainable lines. It means that if we were to use an adaptive, complexity based model, consultation must be much more than a simple asking communities what they would like to see, and what improvements they would like to an area. Instead, it is about exploring the meanings, particular understandings, local structures and social processes in order to fully appreciate what is special and unique about that area. This presupposes an indepth understanding of the communities themselves. Each space is diverse in its own special ways, and a geographical community is no different. But from an understanding of what communities and the local environment means to residents, we can gain a far better appreciation of the contextual environment within which eco towns will sit, what each locality has to offer, and what it can and cant contribute to the radical change that is going to experience as the eco town develops.

Conclusion

The problem has been that man has approached both the environment, and planned communities in a top down, hierarchical manner, where power and energy flows in one direction, from one source. In this conceptualization of the ecological system, man is above and outside of the natural, social and economic environment, in a quasi-god like manner, able to control and direct. We have challenged this perspective not only ontologically, but also as a means of bringing about desired changes to the structural system. The empirical and theoretical arguments are simply that life does not work in this way, and that instead the best of intentions are subject to unpredictable environmental changes that alter the trajectory of structural building and rebuilding. This provides us with an explanation both for why planned communities have struggled to reach their goals, but also points to a way that progressive plans can be achieved.

The lateral power relationships of complexity give an ontological framework that may prove to be more effective at attaining important policy goals. However it would mean having to embrace the fact that time unfolds in a non-linear fashion, and that the future is less predictable than traditional planning models would like to imagine. Further, and directly linked to the non-linearity of time, it also means an acceptance that power and energy flows from multiple, and unpredictable directions, which calls

for developments that are adaptive rather than planned. This means that when trying to achieve a set of goals, we would have to look at how we can adapt what already exists. This presupposes developing a clear idea of what the initial conditions are, and here we advocate an understanding and analysis of the meanings that existing communities have of the local social, economic and natural environment. Such a set of understandings offers a practical guide for how the adaptive process can be put into place. Therefore, we can conclude that we can develop goal driven policy, but that we need to dramatically reconceptualise how we go about it. The next big question is: is planning up for the challenge? Do we have the capacity to be content with acknowledging that we are working with uncertain outcomes or is this a step too far for structural goal driven policy institutions relating to large scale developments?

References:

- Baker, S. 2007. "Sustainable Development as Symbolic Commitment: Declaratory Politics and the Seductive Appeal of Ecological Modernisation in the European Union", *Environmental Politics*, 16 (2) pp. 297-317.
- Bennett J. 2010. *Vibrant Matter: A Political Ecology of Things*. Duke University Press: Durham.
- Bergson H. 2004. *Matter and Memory*. Dover Publications Mineola.
- Blumer H. 1969. *Symbolic Interactionism; Perspective and Method*. University of California Press: California.
- Boulding, K. 1981. *Evolutionary Economics* (London: Sage).
- Cervero, R. 1995. "Planned Communities, Self Containment and Commuting. A Cross National Perspective" *Urban Studies* 32 (7) pp 1135-1161.
- Clapson, M. 2002. "Suburban Paradox? Planners' Intentions and Residents Preferences in Two New Towns of the 1960's: Reston, Virginia and Milton Keynes, England" *Planning Perspectives*. 17 (2), pp 145-162.
- Connolly, E. 2002. *Neuropolitics: Thinking, Culture, Speed*. (Minneapolis, University of Minnesota Press).
- Darwin C. 1910. *The Origin of the Species By Means of Natural Selection*. John Murray: London 1910.
- Department for Communities and Local Government (DCLG). 2006. *Code for Sustainable Homes: A Step-change in Sustainable Building*. Stationary Office: London.
- Department of Communities and Local Government (DCLG). 2007. *Eco-towns Prospectus*. Stationary Office: London.
- Department for the Environment, Food and Rural Affairs (DEFRA). 2005. *Securing the Future: Delivering UK Sustainable Development Strategy*. Stationary Office: London.
- Glass, R. 1948. *The Social Background to a Plan* (London: Routledge).
- Goffman, E. 1959. *The Presentation of the Self in Everyday Life* (Middlesex: Penguin Books)
- Heraud, B. J., 1968. "Social Class and the New Towns" *Urban Studies*, 5 (33) pp. 33-58.
- Homer, A. 2000. "Creating New Communities: The Role of the Neighbourhood Unit in Post War British Planning" *Contemporary British History*, 14 (1) pp 63-80.
- Hornsey, R. 2008. "Everything is Made of Atoms: The Reprogramming of Space and Time in Post War London" *Journal of Historical Geography*, 34 pp 94-117.
- Kuper, L. 1953. *Living in Towns*, (London: Crescent Press).
- Larsen, K. 2008. "Research in Progress: The Radburn Idea as An Emergent Concept: Henry Wrights Regional City" *Planning Perspectives*, 23 (3) pp 381-395.
- Mead, G. H., 1967 [1934]. *Mind, Self and Society: From the Standpoint of the Social Behaviourist*, (Chicago: University of Chicago Press).
- Pitt, G. 1959. "Neighbourhood Planning in a New Town", *Town and Country Planning*, 28 (7-8) pp 263-5

- Prigogine, S., Stengers, I., 1985. *Order Out of Chaos, Man's Dialogue with Nature*, (Flamingo, Harper Collins; London).
- Souther, M. 2003. "Suburban Swamp: The Rise and Fall of planned New Town Communities in New Orleans East" *Planning Perspectives*, 23 pp 197-219.
- Smith J, Jenks C. 2006. *Qualitative Complexity: Ecology, Cognitive Processes and the Re-Emergence of Structures in Post Humanist Social Theory*. Routledge: Oxon.
- Stern, N. 2007. *The Economics of Climate Change: The Stern Review*. (Cambridge: Cambridge University Press).
- Tuppen, J. N. 1983. "The Development of French New Towns: An Assessment of Progress" *Urban Studies*, 20 pp 11-20.
- UN Department of Economic and Social Affairs. 1992. *Earth Summit, Agenda 21*. <http://www.un.org/esa/dsd/agenda21/> Accessed 08. December. 10.
- United Nations Environment Programme. <http://www.unep.org/#> Accessed 01. March. 11.
- Willmott, P. 1962. "Housing Density and Town Design in a New Town", *Town Planning Review*, 33 (2) pp 124-6