

CLEARING THE PATHWAYS TO TRANSFORMATION

(Revised (1) Chapter by Susan Ballard and David Ballard for Crisis Forum Book on Climate Change, to be published by Pluto Press in 2007.)

As authors elsewhere in this book have identified, climate change is a huge and urgent challenge which is not being met. Current policy processes such as the Kyoto Protocol barely scratch at the surface of the problem and have had little effect so far: average global carbon emissions have risen from 6,445 million tons in 1997, when the Kyoto treaty was signed, to 7,210 in 2004.ⁱ Despite cheap and simple technological innovations which could save businesses and consumers energy and money, change is slow and very limited. So why are we failing to respond adequately as individuals, organisations, and social institutions? Are we the selfish, morally bankrupt, dysfunctional, witless victims of a powerful geo-oligarchy intent on milking the carbon economy, whatever the long term cost?

Persuasive though this explanation sometimes is, we tend to think that greater opportunities for progress come from exploring the cock-up rather than the conspiracy view of this crisis as explored in David Ballard's chapter, "Mostly Missing the Point: Business Responses to Climate Change" in this volume. That is because, working as strategy consultants in the field of human change and environmental sustainability, we come across individuals who are aware enough of climate change and the threats it poses to want to do something about it, even if they perceive that "something" as better for the collective rather than in their own interest. What they find out is just how little they can do without an alignment between what they want to do and the facilitative change needed in the wider context beyond their control.

We come across examples of this in many different contexts and at different scales: Neighbourhoods keen to stop their rubbish clogging up landfill and giving off methane but whose local authority has been slow to provide kerbside recycling; a construction company wanting to install energy-efficient plant to a new hospital but unable to specify anything which could overcome National Health Service codes of practice on consistent temperatures; farmers wanting to grow biomass but deterred by the lack of a guaranteed market for their crops. The energy manager of a local business may be tempted by new technology which reduces energy bills and carbon dioxide emissions long term but the finance advisor insists that the capital replacement cost is too high and no government grant is available to ease the transition. We know of a business director who got past this hurdle with a creative idea for financing change but was opposed by the local community who did not want a waste-to-energy plant and integrated development in their village.

The devil is in the detail and many good intentions soon go to ground or are limited in scope by constraints over which a change agent has no perceived or actual control. Even elegant and potentially helpful policies such as contraction and convergence are in danger of dissolving like bubbles when they hit the ground because no-one has thought to remove the sharp obstacles in their way. So what needs to change?

William D. Ruckelshaus, Environmental Protection Agency Administrator under Presidents Nixon and Reagan (not the obvious choice as an advocate of revolution!) suggested that the scale of change needed was comparable to the Agricultural and Industrial Revolutions but with an important difference, “These revolutions were gradual, spontaneous and largely unconscious. This one will have to be a fully conscious operation, guided by the best foresight that science can provide.”

We too are arguing for a change in the way we think about change. We argue that change is an integrated long term process which involves what organisational theorists might describe as investment in complementarities. In other words, what the pioneers of complementarities theory in economics, Paul Milgrom and John Roberts,ⁱⁱ described as, “doing *more* of one thing *increases* the returns to doing *more* of another.” In applying this theory to change for sustainable development we shall be looking at mutually reinforcing conditions for change and a matrix of contextual constraints that require synergistic management.

We shall also argue the need for a change strategy led by a network or ecosystem of champions, as we shall be calling them later, in association with ‘proto-champions’; people in a champion role but who are not yet fully committed to doing something specifically on climate change. Certain special qualities characterise climate change champions which we shall be describing in order to highlight the capacity building that is needed for change.

As the first step to clearing a pathway to transformation, we shall outline four mutually reinforcing generic conditions and a learning process which need to be embedded and integrated within a change strategy. Typically, as climate change strategy consultants, we have devised a simple mnemonic, the five As, to help describe what is necessary for change. The first three As: Awareness (understanding at several levels), Agency (the ability to do something meaningful), Association (joining forces with others) are necessary for change at the project level. The fourth A, the process of Action and Reflection (learning through cycles of doing and reviewing) is necessary to keep a project going as change occurs and stops things from running out of steam. The fifth A, Architecture for change (the configuration of people, procedures, processes and resources) ensures that change at the project level is embedded and that questions raised can be addressed by other groups at appropriate organisational levels. This chapter will clarify what we mean by the five As and why we have reached the conclusion that this model is a helpful tool for change agents or champions contributing to the revolutionary scale of change envisaged by Ruckelshaus.

THE FIRST A, AWARENESS, IS INSUFFICIENT WITHOUT THE SECOND, AGENCY

What marketers might describe as “brand awareness” of climate change is actually high in the UK. The general public recognise the terms, climate change and global warming, and the mechanisms which cause it (use of energy, driving cars, and so on), with 85 per cent in 2001 thinking that climate change is happening and 71 per cent that humans are

causing it. Many fewer, perhaps only 15 per cent, have a sense of the scale and urgency of the challenge. What still needs to be developed beyond this, and few decision-makers seem to have it, is an understanding of delays and feedbacks in both climate and social systems, and awareness of intervention points which at certain critical points in time give individuals and organisations the scope to make a very big difference.ⁱⁱⁱ

By itself, brand awareness of climate change is insufficient to dissolve the many barriers to change. Most people, however aware and well intentioned, simply do not have the energy or the resources to tackle the many factors inhibiting change and may therefore retreat from the issue altogether; a reaction commonly described as fatalism by attitude and opinion surveys. Yet this blanket interpretation of the public as ignorant, selfish or fatalistic is symptomatic of another awareness deficit; a failure to understand the necessary conditions underlying change.

The misunderstanding of change as a one off event which can be switched on by more information is reflected in recent governmental climate change communication strategies which have opted to focus on awareness-raising, or more recently attitude-changing. It is as if experts suppose that broadcasting more and more information about climate change will somehow effortlessly erase all the barriers which are currently preventing citizens from changing their lifestyles.

The strategy is reminiscent of jokes about the UK's "just shout louder" approach to people who do not speak English. It ignores conclusive findings which show that awareness-raising is not only not enough to promote change but can even be counter-productive. This is particularly true of climate change when people feel overwhelmed and disempowered by the huge scale of the issue.

A 1995 study of public perceptions of sustainability in Lancashire, for instance, showed that information about sustainability issues was not enough to engage people. The researchers found that distrust of governmental or local authority commitment to the issues could diminish an individual's interest in taking action and their receptiveness to the information. Not surprisingly, many people felt there was no point in acting if their actions were rendered meaningless by a context beyond their control.^{iv} As a more recent participant in a climate change conversation game put it, "If I'm going to have to put on a hair shirt, I need to see evidence that it will make a difference"

THE IMPORTANCE OF THE SECOND A: AGENCY

What people need alongside awareness is a sense of where they can find their agency, in other words, what they can do which seems meaningful to them. We could use ourselves as an example. Having already taken the obvious measures to make our house more energy efficient, we looked to do something more meaningful both in terms of reducing our domestic carbon dioxide emissions and providing a model for friends and neighbours. We wanted to run an electric scooter off electricity generated by a roof-mounted wind turbine. Encouraged by the possibility of a government grant for a micro-turbine described in several leaflets that came through the letterbox, we applied to our district

authority for planning advice. From then on our willingness to engage with government energy policy evaporated. The local planning process was too time-consuming, expensive and financially risky to encourage this material change.

We argue that it is pointless raising awareness of climate change unless people are also enabled to do something meaningful about it. Information about incentives, such as grants, does not increase agency unless other factors impeding change have been removed. In our case, as householders wanting to generate our own electricity, our individual agency was thwarted by the wider planning and political contexts. Although the Office of the Deputy Prime Minister claimed to be reviewing whether household micro wind turbines should require planning permission, the context into which this relatively small step change could be made seems currently to be determined by the anti-wind lobby. Despite the urgency of a need to shift to renewable energy, political fear of an electoral backlash is inhibiting government from following through on its commitments to the Kyoto protocol and weaning the UK off carbon dependency.

In order to respond to the crisis with the awareness we have, we also seek to extend our agency beyond the individual household level. For instance, writing this chapter, or helping our clients to develop effective climate change action plans are alternative routes to agency for us. However, our intended response to put a wind turbine on the roof visible from the footpath that runs past our house might have been meaningful not just in reducing our own consumption, but in encouraging others to do the same, had the government attended not just to giving us information but also to removing the local obstacles on the metaphoric path.

THE THIRD A: ASSOCIATION

Research shows that people are much more likely to act on climate change if they band together with other people.^v We call this “association”. Besides the obvious reinforcement of will power, like weight watchers, we think that strong association also enhances agency. An individual whose agency has been limited by contextual constraints beyond his or her control, may extend it by influencing a Member of Parliament or lobbying through a pressure group. However, research also shows that some groups offer more agency than others. Support groups, for instance, if working well, can enhance and develop individual agency. If not, they can degenerate into talking shops and sub-optimal behaviours.

An example of the kind of association which can help to develop individual agency is the community eco club model supported by the charity Global Action Plan. Rather like a book club, the eco club is an opportunity for six to eight households, work colleagues or friends to meet regularly, perhaps once a month, to support and encourage each other to make the pro-environmental changes they choose to make. There are a number of similar initiatives taking place in pockets across the UK and some recent work with the New Economics Foundation (nef) has enabled us to explore how effective these might be.

One of the ways to awaken a sense of agency through association that nef has been developing is by way of a card game which brings groups of people together informally around a table to talk about climate change. The deliberative process of the game helps them to decide where they stand on the issue both as individuals and as a group. It is intended that players are offered both a channel to influence policy and a route to a mutual support group.

The idea grew from the success of previous versions of the game, Democs^{vi} (Deliberative Meetings of Citizens) which had been used to stimulate informed and non-judgemental public discussions on controversial science issues such as genetically modified organisms and the mumps, measles and rubella vaccine. A version of Democs using climate change as the topic went on trial. At the end of the game players were asked to vote on the kind of policy they wanted to see on climate change. Eventually it is intended to display this information on a website so that players and policy-makers can see the voting patterns which may have some influence on policy.

However, a significant number of players were not satisfied with this ending. They wanted to find out more about what they personally could do about climate change. Nef considered a number of options such as issuing a to-do list with the game, setting up a web-based pledge to action inventory, and so on but has responded more recently with an informal experiment to convene virtual and real groups of so called carbon watchers.

Community groups such as this are not new but they seem to be part of a growing movement. Studies of them suggest that success is often due to the weight watchers effect. Participants are more likely to commit to a change and stay committed to it if they have to account for themselves to a group with a shared purpose as evidenced in this reflection by the convenor of such a group in Ledbury, Herefordshire,

“At the initial meeting, I said that I wanted to change over the remaining light bulbs in our house to energy saving ones. It is now four days before our second meeting and for the last week I have felt a growing push to keep to my commitment rather than tell people that I hadn’t done it. Somehow meeting with a group of people is a great incentive for action whereas previously it didn’t seem to matter whether I did something or not.”

Talking about and questioning lifestyle habits can bring about a shift in consciousness which sociologist Anthony Giddens describes as the move from practical to discursive consciousness and has been described in more detail by researcher Kersty Hobson in her study of Global Action Plan’s “Action at Home” programme:^{vii}

“Giddens’ concept of practical consciousness, a form of unsaid knowledge that individuals make use of in going about their everyday lives, neatly encapsulates the habits that *Action at Home* helped to change. What *Action at Home* does is to bring these habits, hidden away in practical consciousness, into discursive consciousness, where they are considered by the individual, and either altered or contested.”

Groups serve to normalise pro-environmental behaviour and when working well provide a much bigger resource of creativity, information, skills and power than an individual can access working in isolation. Early feedback from the year old group in Herefordshire suggests that participants are making pro-environmental behaviour changes and as importantly, enjoying doing so.

Nef's learning from the Democs Climate Change project underlines the need for awareness, agency and association to be attended to in parallel rather than in isolation. The card content of the game and the conversations raise players' awareness but it was not enough to offer them agency solely through voting on policy. Players themselves recognised the need to look for agency in their own lives and with others.

Although we come across many examples of awareness-raising alone being ineffective as a catalyst for change, it is just as common to find association alone as a sub-optimal strategy. We invite readers to consider the many examples of climate change associations of the great and the good which have been set up to tackle the issue. In the absence of a strong shared awareness and little real agency it is not surprising that many of these degenerate into rather cosy talking shops which achieve nothing on the pathway to transformation.

However, even when a mutually reinforcing balance is achieved between the first three As: awareness, agency, and association, we still find that change initiatives can flounder or become collapsed in scale. They often remain at the project rather than at the programme level unless supported by the remaining two: Action and Reflection and Architecture.

THE REMAINING TWO AS: ACTION/REFLECTION AND ARCHITECTURE

To illustrate the importance of the remaining two As in conjunction with awareness, agency and association we will draw on an account of one of our consultancy projects in the construction sector.

A UK construction company which we have called "Excelsior Holdings" to preserve commercial confidentiality, was required by its parent company to undertake an environmental bench marking exercise. We were part of a consultancy team called in to help in 2001. Since Excelsior's core business was providing public infrastructure such as schools, hospitals, bridges and roads under the Private Finance Initiative throughout the UK they might have been expected to have engaged with climate change and its impacts long before. In common with the majority of businesses, public bodies and Non Governmental Organisations across the UK they had not. The level of awareness of climate change across the company was what we described earlier as brand awareness only.

Clearly there was a huge need to address this awareness deficit across the whole organisation, group, partners, contractors and clients. Typically, we were only contracted with the organisation at one level. Our influence was therefore initially constrained.

However, in this particular case, consultation with the client generated a strategic question which was meaningful to the business as a whole: How can we respond profitably and creatively to the challenge of sustainable development? Because the teams framed the question as, 'how can we respond ...?' they allowed themselves to use the inquiry to explore what their actual and potential agency might be, alongside learning about the issues in a collaborative association of colleagues and consultants.

In terms of association, a great deal of attention was paid to the dynamics of the group, with effort being put into building mutual trust and confidence and listening skills. This reinforced their ability to reflect together, something that they had not previously been used to doing. The first three As became mutually reinforcing.

Action and Reflection

The project was conducted using a learning process known as Action and Reflection. This process is particularly significant in change initiatives. Practice or behaviour does not change as a result of people being told what to do. For instance, external expert reporting on a problem rarely has an effect, however persuasive the recommendations. What is needed is learning by doing: Action, alongside reviewing both the result of a change in practice and the actions or patterns of thought that led to that outcome: Reflection. We have noticed the absence of this process in countless carbon reduction initiatives which produce little return for the original investment of time and money. Without effective measurement of results or an adequate evaluation process there is little reflexivity or learning. By introducing a structured action/reflection process participants can learn more and change their approach accordingly.^{viii}

In this case Action phases worked in a number of ways, often with several streams running in parallel. For instance:

- Everybody in the group made small changes to everyday practice, for example, seeing what happened when participants raised sustainability issues in a project meeting. There was no easy opt-out: if someone didn't do the agreed action, then every effort was made to understand what had led to this.
- Focused action in current projects, usually by one member of the group at a time. For instance, one person took a working day to investigate better energy alternatives for a project worth over £600 million; another looked in detail at whether steel or concrete was preferable on a civil engineering project; and a third looked in detail at what had led to significant increases in energy consumption beyond specification on a third project. Each of these investigations gave both content knowledge (e.g. on options to reduce energy) and also significantly increased understanding of where 'agency' – a chance to make a major difference – lay on a typical project.

- Clients, sub-contractors and colleagues were asked about their understanding of climate change and its impacts and about what help they needed with various sustainability and business issues it raised for them. Group members found that such conversations were much easier if they were not undertaken from an expert position but rather from a service position: here are some facts (e.g. on climate impacts) provided by reliable third parties; how can we help you to think through what they might mean for your project so that we can help as best we can. In this way, the project process increased association with clients.

As members of the group began to gain trust in each other, in the consultants, and in the process of the project, reflection deepened. The value of this became clear when a significant deepening of awareness happened for the group during an informal discussion the science of climate change. A hasty sketch of data from the Vostok ice core records had a powerful impact and the group interrupted the presentation because they needed time to assess what it meant for them emotionally, personally and for their business. We believe this deepening of awareness could not have happened without the prerequisite attention to agency and association. Certainly this group underwent a significant shift in understanding at this point, much more powerful than when less care had been taken with the process.

Overall the project was a success, the group did identify a realistic and sustainable market position, internal procedures were addressed, and feedback on the bids completed during the project was positive, though it was clear that the company's clients had little grasp of the issues. Opportunities to improve performance at the level of particular projects were identified. Some team members who freely acknowledged having been climate sceptics at the beginning of the project reversed their position to become advocates.

Importantly for our own learning, the project illustrated how vital it is for shallow awareness of climate change to shift to a deeper understanding of what we call "agency moments". These are intervention points which open and close quickly at certain critical points in time (for instance in the two or three weeks after a bid has been won and before detailed plans begin to drive out divergent thinking) but which potentially give individuals and organisations the scope to make a very big difference. Those responsible for specifying large infrastructure projects such as building a hospital make decisions which affect how much carbon dioxide is emitted for the next twenty-five or fifty years. Their decisions determine also whether the infrastructure will be resilient to climate impacts: Will the hospital's roof blow off in a severe storm? Will driving rain penetrate the cladding and escalate costs or risk building collapse? It is at these agency moments that if deeper awareness were available, individuals and organisations could exercise greater than usual agency. While they are too often missed, the project showed that they can in principle be opened up.

Architecture

Even though the Excelsior project was rated a success, the scale of change that could potentially have been achieved was still limited in scope. We would suggest that, in

common with many such successful projects, this is because an insufficiently robust change architecture (the fifth A) was in place for the learning to spread from project to programme level and beyond.^{ix}

When we talk about architecture for change we mean a particular configuration of people, procedures, processes and resources which enable change to take root more widely at multiple levels of a social system and across its usual boundaries. In the case of Excelsior, at the individual level, participants clearly increased their capacity to engage with climate change. At project level a group of people developed who learned how to champion climate change and who would be a resource for other projects in the future. At organisational level the project did change the procedures in place for running projects: changes were made to the project management manual and to the processes to identify and manage risks, for instance.

At the cross- and inter-organisational levels, however, the architecture was weaker. The acceptance of the work at board level had perhaps inevitably depended heavily on the one Director in the project team, but he unexpectedly retired for reasons of ill health towards the end of the project. A new Director took over without the background in the issues and without having taken part in the group's learning journey. Even though the project's conclusions and recommendations were well argued, and so were easy for him to accept and implement, the learning process was inevitably harder to grasp and so the project's edge was quickly lost. While the champion network continued, and did participate in some wider discussions, it did not have counterparts elsewhere in the group and also lacked the leadership that would have been necessary to deal with the many issues in other group companies, so the project petered out before its full potential could be realised. Nor could the champions group move on to address wider issues in the market place by, for instance, participating in initiatives on European competition law, which certainly limited change. While much was done, much more might have been possible.

Why is a robust architecture needed?

As a first step to understanding why a change architecture is needed, we present a simple map of the kinds of obstacles blocking the pathway to transformation. The contextual factors which inhibit change initiatives are differentiated on a 2 x 2 matrix developed by the American author Ken Wilber.^x Obstacles can then be characterised as applying either at the personal level or at the collective level and may consist either of subjective issues (for instance, assumptions or group norms which limit action) or objective factors (for instance the constraints of a job role or of technologies).

1. Individual subjective factors (Limiting personal values, worldview, assumptions, etc)	2. Individual objective factors (Limitations of one's role, skills, knowledge, relationship set, etc)
3. Collective subjective factors (Group cultures, shared norms, etc)	4. Collective objective factors (Political, economic, social, technological, legal, environmental)

Barriers to change (after Ken Wilber)

One or another of these obstacles can come into play at any time in the micro-processes which affect decision-making in organisations, communities or other groups, and they are often interlinked. For instance, a project in 2004 to introduce a waste to energy plant in a Wiltshire village, (a technical adaptation response: quadrant 4) ran into community power dynamics, (the integrity of the local proposer of the project was undermined by villagers who distrusted his motives: also quadrant 4) There was significant scepticism about the authenticity of the consultation process (which may have resulted from a shared mindset about how decisions are taken: quadrant 3) The personal skills and role of the facilitator/consultant may have made it difficult to address this mindset (the project facilitator/consultant had not been given enough information about the history of relationships in the village quadrant 2) There was also evidence of personal assumptions such as “why should this village take the risk of new technology and possible devaluation of house prices when others will benefit?” (quadrant 1)

Change efforts continually come up against ‘hard’ and ‘soft’ constraints at these different levels. Commonly we see no coordination between efforts in one area of the grid with efforts in another. Just as commonly there is little effort in research communities, with the exception of the Tyndall Centre, to integrate knowledge in one area with knowledge from another. Frequently researchers simply can not find a mutually comprehensible language in which to communicate, or waste time picking holes in other disciplines’ methodologies and ways of validating knowledge.

At policy level, there are encouraging signs in the rhetoric, at least, of the UK government’s 2005 sustainable development strategy. Policy-makers are beginning to see the need for a more orchestrated approach and describe a new comprehensive approach to behavioural change drawing on lessons learned from government anti-smoking strategy. For example, before current legislation against smoking in public places could be introduced successfully (collective objective), smoking had to become a minority habit. Therefore work needed doing in parallel in the individual subjective domain by supporting health professionals to run programmes tackling attitudes, habits and addiction. Alongside efforts to change attitudes, public health campaigns (collective subjective), information was needed (individual objective) to help people to make the choice to give up and to find the level of support they needed to sustain this intention. The same issue is recognised by think tanks such as the Policy Studies Institute which argues that fiscal incentives are needed alongside information to persuade householders to adopt more pro-environmental behaviour.

Strategists can develop a robust architecture by using the Wilber matrix to map out the different contextual constraints which will need to be addressed if a change initiative is to be successful. Simple questions, such as: Who needs to know/do what and when for the change we envisage to occur? can then be the basis for collective planning and decision making about where to direct resources and organisational processes to catalyse the envisaged transformation. The first three As then become a way to diagnose whether the conditions for change are adequately in balance, the fourth, Action/reflection provides a reminder of the need to set up an adequate and appropriate learning process as part of the fifth, architecture. This model has proven to be particularly helpful in public sector organisations for department managers who need to devise climate change action plans.

The Organisation as Architect for Large Scale Transformation

Our current work in the public sector has alerted us to the significant role that a linking pin organisation such as a local council might play in developing a strategic change architecture. The potential agency available to a local authority is huge since it is responsible for delivering key services, can influence local communities, has enforcement and convening powers, can scrutinise contractors and partners, has developed practical expertise and has democratic legitimacy. Local government is also a potential bridge between local and regional communities and national government.

Yet in practice many councils are still locked into bureaucratic and hierarchical ways of working designed for the service delivery of yesteryear. They have not developed the adaptive capacity necessary to take on complex cross cutting policy challenges, the so called “wicked issues” first described as such in 1997 by researchers at the University of Birmingham.^{xi} These do not fall neatly into any single departmental budgeting process or cost code. Climate change, in particular, as a key example of a wicked issue requires a coordinated matrix of policy from different departments to tackle it effectively.

Frans Berkhout, co-ordinator of the University of Sussex’s Science and Technology Policy Research, Energy and Environment Programme describes adaptive capacity^{xii} in this context as the ability of organisations to make changes in technology, policies and practices (another way of defining change architecture) that will help them avoid risks associated with climate change. We have found this capacity lamentably lacking in our strategic work with government at all levels yet it is often evident in individuals. We discovered more about the adaptive capacity of isolated change agents in organisations through some in-depth case study work we undertook in an evaluation of Hampshire County Council’s potential climate change champion strategy.

Champions clear the path ahead

One aspect of architecture often overlooked is the architect. The cathedral remains but the narratives of the individual architect, builders, stonemasons, inter al. whose collective purpose it was to construct it are lost. In our case study approach for Hampshire we learned directly from the stories of people whom others identified as champions of climate change. It was in the detail of what we heard that we began to recognise specific characteristics or qualities peculiar to those working on sustainability issues like climate change.

Such people display many of the skills, competencies and behaviours of “boundary spanners.”^{xiii} They have the interpersonal skills such as fluency in different linguistic registers so that they maintain credibility in different contexts and can frame sustainability issues to meet different agendas. They move easily between different levels of a system, inspiring trust both in a boardroom and in a village hall. They act as conduits for learning, thinking and knowledge between different parts of an organisation or wider system. They can adapt and perform to different management styles: hierarchical or egalitarian. They build relational capital by making connections between people and developing their networks. However, the two most significant characteristics which differentiated sustainability champions from other boundary spanners were their driving passion and a relentless search for greater agency.

These key characteristics are vital, we argue, in the task of clearing the pathways for transformation. Practitioners working on climate change or the wider sustainability agenda invariably come up continually against the contextual constraints typified in the Wilber matrix. They therefore need a driving passion to sustain their efforts to overcome these constraints over long periods of time, in many cases, a lifetime of effort. Their relentless search for greater agency is commonly provoked by their deeper than average awareness of the scale of climate change impacts and the urgency with which we need to respond.

Unlike the tempered radicals described by Debra Meyerson in the book of the same name,^{xiv} who are careful not to rock the organisational boat so hard that they fall overboard, climate change champions will choose to leave the boat if they think they will be able to respond more meaningfully and achieve more elsewhere. Their actions and or career paths often look risky or radical. What they may be doing is risking their own job or career security in order to remove an obstacle on the pathway to transformation, making it easier for those who follow.

We found examples of a champion who had been prepared to challenge the legitimacy of his organisation's environmental decision-making in court, another abandoned a well-paid consultancy career to support business development of environmental management systems, another left a prestigious consultancy to set up a project to exert shareholder pressure on businesses underperforming on carbon emissions. These were relatively high profile actions.

We also found champions who had managed to outlive organisational upheavals and abandoned career ambitions to remain in a post where they could optimize their influence. It was humbling to hear about the huge and highly motivated efforts they would put in to achieve something that would have been so much easier if more people had helped rather than hindered the process.

Typical examples of this were provided by Dave Pickles, Manager of Newark and Sherwood Energy Agency. In one of the structured conversations that informed our evaluation for Hampshire County Council of the potential for a climate change champions strategy Dave told the story of his twenty eight years as a council officer trying to mainstream sustainable development. This revealed just how much sustained, strategic work was needed by a champion to spearhead a major change initiative. What Dave, and those who have supported his efforts, have achieved is a theoretical 41 per cent reduction of carbon dioxide emissions from Newark and Sherwood's council owned housing stock between 1990--2003 with further theoretical carbon dioxide savings projected in the period to 2020.

Dave was careful to include the word theoretical because the emissions are calculated on the amount of energy needed to heat each property and will never be exact. What can be said with more certainty using April 2003 data is that 98.4 per cent of the council's 7,124 homes are capable of delivering affordable energy to a vulnerable single pensioner. Some tenants, albeit in small apartments, pay as little as £15 a year on heating. Yet to achieve what should be the norm across the UK, Dave has had to invent a new way of accounting, "holistic cost benefit analysis," convince the council to accept it as a basis for investing in

a comprehensive raft of energy efficiency measures, set up a new data base system to record changes to every individual property, devise new ways to measure and audit the energy performance of properties, persuade tenants that spending money on energy efficiency is preferable to modernising their kitchens, as well as surviving a onetime budget cut that removed his department.

Even with this high profile success behind him (Newark and Sherwood District Council was singled out by government ministers in 2001—2003 and awarded beacon status for excellence in tackling fuel poverty) Dave still struggles against obstructions to embed sustainable development more widely. For instance, on one occasion he put a lot of time into developing a brief for ten eco homes within a development of 150 but it got nowhere because a colleague claimed to have forgotten to do a vital part of the rubber stamping process. On another occasion he failed to get eco-housing built on a former mental hospital site despite overcoming many other constraints because, at the last hurdle, the landowners had to maximize their return on the land.

It is the failures as much as the successes which point to the many complementarities which need to be addressed before significant material change can happen. The majority of climate change champions we have spoken to felt isolated and worn out by constantly having to take on so many different contextual constraints and counter the prevailing culture. From their articulation of their support needs it became more and more obvious that a vital part of architecture for change involves building a network or association of climate change champions. We called it an ecosystem to underline that there are different types of champion working in different capacities across an organisation, some with a more visible profile than others, and that all and more are needed. If such a network could work strategically together to a shared purpose different champions could be addressing different parts of the matrix rather than each individual having to tackle everything him or herself.

In sharing this idea with managers in Hampshire County Council, we were delighted that we were able to develop in dialogue with them the idea of proto-champions. These are people for whom climate change is not yet an all-consuming passion but who want to do their bit to help in an area that interests them for other reasons and may therefore offer something to an overall strategy without necessarily pledging long term commitment.

Being able to recognise and then build association with proto-champions enables champions to strengthen their agency. For instance, by catching a senior manager's interest in using the climate change agenda to develop strategic leadership capacity, it might be possible to draw on resources at a much higher level of the organisation than they might normally be able to reach. This strategy also offers a route to intervene in agency moments which a proto-champion would not necessarily have identified as opportunities for agency intervention. For example, in the Excelsior case study the group member who invested time in presenting more creative energy options on a major construction project began as a proto-champion: the project had been framed as relevant to the company's profitability and as being creative and enjoyable in its own right. Without the climate change consultant's support and prompting he would not have realised how much agency he had to make a meaningful difference by raising the question of energy consumption at this point in a specification.

Although a climate change champion network strategy still invites the criticism that it will give the organisation somewhere to off-load sustainable development responsibility rather than engaging with it as a mainstream issue, we argue that it is a necessary part of the change architecture. Even if sustainable development skills and competencies could be developed across the whole organisation, as they should, there will still be a need for dedicated champions to work collectively and concertedly to lead the scale of change required. This same conclusion is reached by Paul Williams and Alan Thomas in their exploration of an effective system of governance for sustainable development in Wales.^{xv}

However, it is rare to find a programme of change or a climate change strategy which is not piecemeal. It is just as rare to find a network of champions working together in a way that could be described as systemic. An important dimension of an architecture for change is the development of a network of distributed leadership which needs to be collectively intelligent. In other words, there needs to be enough connectivity between the agents in the system that learning can be shared quickly and easily. This is another aspect of the architecture: the organisation, procedures, processes and learning pathways that will enable this to happen. This may be why Richard Whittington and Andrew Pettigrew describe decentralized, bottom-up approaches as handicapped in delivering change.^{xvi} They describe what we have also found,

“Local experiments and piecemeal initiatives are liable to be abandoned as they fail to find their fit within the rest of the organisation. Only once initiatives are cumulated into complementary packages are they likely to deliver their pay-offs”

In terms of behavioural responses to climate change this equates to the way many individual local initiatives only achieve small scale changes or peter out before they can be replicated elsewhere. An effective architecture for change would favour strong central direction to enable each individual project to build on another and contribute to an overall strategy. An ecosystem of champions in this respect would need to include champions at different levels of the organisation as well as across departments.

So where does this leave us? The success of any policy involving behavioural change of the scale needed to address rapid climate change depends on the willingness of a critical mass of nations, organisations and individuals to engage with it. Policies rarely succeed in doing more than creating a broad brushstroke framework for action. Whether or not they achieve their objective depends on how strategically they are interpreted and implemented. In our view, much that is described as strategy is very weak because it does not integrate the five As, learning processes such as action and reflection are not evident, complementarities thinking is absent and there is not enough collective champion capacity to lead large scale change. This, as we explained before, is why we favour the cock-up rather than conspiracy view of society's current inertia in the face of looming catastrophe.

In this chapter we have used case study examples from our climate change strategy work with organisations to highlight the micro-processes of change, the everyday obstacles on the pathway to transformation and how climate change champions might most effectively work to remove them. We have been informed by network theory, behavioural change literature, and our own and others organisational change practices to elucidate the policy

to implementation journey. We have made some pragmatic suggestions and offered some frameworks for developing high quality climate change strategy grounded both in a marriage of practice and theory.

Let us now finish with a heroic story. In many cultures, the elephant is a mythic beast. As it walks along the path it encounters many obstacles. Unlike other beasts, it uses its great strength to move these to one side, thereby helping all other beings and exemplifying a moral idea; to delay one's own progress to ease the journey for others.

The story speaks to the issue of responding to the climate change crisis. None of us (or at least no-one we know) is perfect in our use of carbon. Even an extremely green person participates in a society that is profligate in its use. It is therefore not a question of those who are perfect, who know, helping those who aren't, who don't, but of participants in a journey, a herd of elephants perhaps, helping each other and the wider world.

ⁱ Vital Signs 2005, The Worldwatch Institute, W.W. Norton & Company, London, 2005, p. 40.

ⁱⁱ The theory is well described in Pettigrew A.M., R. Whittington et al, 2004, Innovative Forms of Organizing: International Perspectives, London, Sage Publications.

ⁱⁱⁱ Data from Department for the Environment, Farming and Rural Affairs, 2001, Survey of Public Attitudes to quality of life and to the Environment, HMSO, London. The suggestion that the understanding of climate change leaders is less than perfect is in front of us every day of the week. Why this is can be explored in Sterman, J.D., L. Booth Sweeney, 2002, Cloudy Skies: Assessing Public Understanding of Global Warming, Systems Dynamics Review 18(2).

^{iv} MacNaghten, P., R. Grove-White et al, 1995, Public Perceptions and Sustainability in Lancashire, Lancashire County Council.

^v Olli, E., G. Grendstad et al, 2001, Correlates of environmental behaviours: bringing back social context. Environment and Behaviour, 33(3), 181-208.

^{vi} <http://www.neweconomics.org/gen/democs.aspx>

^{vii} Hobson, K., 2003, Thinking habits into action: the role of knowledge and process in questioning household consumption practices. Local Environment 8(1), 95-112.

^{viii} See Schon, D., M. Rein, 1994, Frame Reflection: towards the resolution of intractable policy controversies, New York, Basic Books, for an overview of the field.

^{ix} We thank our colleagues Peter Binns and Mike Jones for suggesting the term 'Architecture for Change' to us.

^x Wilber, K., 2000, Integral Psychology, Boston MA, Shambhala.

^{xi} Clark and Stewart, 1997, Handling the Wicked Issues – A Challenge for Government, School Discussion Paper, University of Birmingham

^{xii} Hertin J., F. Berkhout, 2001, How can business adapt to climate change? The Edge, 6, 4-5

^{xiii} Williams P, 2002, Public Administration. Volume: 80

^{xiv} Meyerson D, 2003, Tempered Radicals: How everyday leaders inspire change at work, Boston, Harvard Business School Press

^{xv} Thomas, A., P. Williams, 2004, Sustainable Development in Wales: Understanding Effective Governance, York, Joseph Rowntree Foundation

^{xvi} Pettigrew A.M., R. Whittington et al, (op. cit.)