

Sensemaking for Sustainable Development –complexity thinking as a behaviour change approach

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Highlights

- Sustainable development - a concept for social modernisation on a global scale, focussing on the triple bottom line of social equity, environmental quality and economic prosperity, requires behaviour change by all sectors of society.
- However, its complexity challenges traditional linear approaches to change.
- The UK government sees the voluntary sector as having the potential to support behaviour change at a local level but research suggests that non environmental organisations don't understand sustainable development and are reluctant to engage.
- Complexity thinking, enacted through Communities of Practice offer a new and different approach, based on cognitive restructuring that could help the voluntary sector better understand the need for behaviour change and be more willing to support it at a local level.

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Abstract

Sustainable development, intended as a concept for social modernisation on a global scale, focussing on the triple bottom line of social equity, environmental quality and economic prosperity can be seen as vague and lacking relevance. The UK Government, aware that the achievement of sustainable development required behaviour change by all sectors of society, saw the voluntary sector, good at changing hearts and minds, as having the potential to encourage behaviour change at a local level. Linear approaches to behaviour change based on control and predictability, are challenged by complex problems like sustainable development, and furthermore, their hierarchal approach may be unattractive to the voluntary sector. Behaviour change for sustainable development may require a new approach to change and complexity thinking, enacted through Communities of Practice, offers a new way of thinking or sense making that overcomes the barriers, builds trust, and encourages shared learning to support behaviour change and innovation. Complexity thinking is a non-hierarchical approach that encourages learning from each other by bringing different stakeholders together to share knowledge. As well as encouraging the distribution of power and authority, it provides the flexibility for agents to develop their own locally appropriate interventions and as such may appeal to the voluntary sector. This research explored the potential of complexity thinking to encourage cognitive restructuring and increase voluntary sector support for behaviour change and utilise the capacity of the sector to think differently about the choices facing us.

Key Words

Sustainable development, complexity thinking, Communities of Practice, behaviour change, voluntary sector, cognitive restructuring

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Main Body

1.1 Introduction

Sustainable development, described as a concept for social modernisation on a global scale focussing on the triple bottom line of social equity, environmental quality and economic prosperity (Voss et al 2006), was brought to the world's attention in 1987 by the Brundtland Report, 'Our Common Future', (WCED 1987). As environmental problems continued to command attention, the UK Government launched its sustainable development strategy 'Securing the Future' (2005), incorporating the three pillars of sustainable development: living within environmental limits, ensuring a strong, healthy and just society and creating a sustainable economy. It highlighted four areas for consideration: sustainable consumption and production, climate change, natural resource protection and sustainable communities, and recognised that achieving sustainable development would require everyone – governments, businesses, public sector, voluntary and community organisations, communities and families –to make different choices.

The need for widespread behaviour change became even more urgent as climate change moved up the global agenda. Stern (2006) described climate change as the greatest market failure the world has ever seen and one that could affect the lives of all. As well as regulation and policy changes he stressed the importance of individual behaviour change in combating the problems.

In response, and recognising the strength of the voluntary and community, or Third Sector, as powerful agents for change at a local level (Tandon and Mohanty 2002), the UK Government sponsored Every Action Counts (EAC) (2006), a three year programme to encourage behaviour change in the voluntary sector. There has been limited research about voluntary sector engagement in behaviour change (Georg 1999, Church and Elster 2002, Seyfang 2006, Seyfang and Smith 2007, Middlemiss and Parrish 2009, Middlemiss 2009, Buchs et al 2011), and research sponsored by EAC, found a dearth of evidence about organisational change in the sector in relation to sustainability. Urban non environmental organisations were the least likely to change (EAC/CAG Nov 2007a:33).

Building on the UK Government's belief that the voluntary sector could be an important stakeholder in the creation of sustainable communities, this research engaged with voluntary sector stakeholders in a UK city location to explore what urban, non environmental voluntary organisations understood about the need for behaviour change to support sustainable development and if they felt it appropriate for non environmental organisations to encourage behaviour change in their communities.

(The term voluntary sector is used throughout this article to represent a diverse sector incorporating different types of not for profit organisations that are variously referred to as Civil Society, the Third Sector or Non Governmental Organisations.)

An initial problem encountered was around the use of language and which phrases to use when engaging with participants. Sustainable development is an holistic principle encompassing social justice, economic sustainability and environmental issues, but there are other words and phrases that refer to similar issues. Climate change, for example, the focus of much Government policy, is an environmental problem with social and economic impacts, but the social and economic impacts are less widely discussed (Hale 2010, ESRC 2009) Focussing on climate change therefore, often seen as purely an 'environmental' issue could obscure the wider social and economic implications (Guthrie, Ball and Farneti 2010). This research chose to use the broader concept of sustainable development, rather than climate change or the environment, to encompass the inter-relatedness of the social, economic and environmental issues facing us today.

When considering sustainable development, however, it is not only language that is a problem, the concept itself is controversial. It has at least seventy different definitions and has been called vague, confusing and almost meaningless by some. (Porritt 2005, Lozano 2008, Gibson 2000, Smyth 2006, Springett 2006, Gladwin et al 1995). Views about it range from it being seen as '*simply about the environment*', to being '*too worthy an issue, without a clear business case*', (EAC/CAG 2008:ii). It is not limited to any sector or even any country, and is not easily translated into national or local issues (Banerjee 2003), leading to the perception that it is too big a problem for individuals or small organisations, like non-environmental voluntary sector organisations, to address.

Although the difficulties in defining and containing sustainable development can reduce its relevance and urgency (Gitsham 2009) part of the problem may be the dominance of linear rational cognitive frameworks based on control and predictability, that shape our way of thinking about change. Sustainable development is a messy or complex problem with many variables. Complex problems are:

'value-laden, open-ended, multidimensional, ambiguous and unstable. Labelled 'wicked' and 'messy', they resist being tamed, bounded or managed by classical problem solving approaches.' (Klein J. 2004:4)

They challenge dominant linear rational cognitive frameworks which seek definitive answers and simple solutions. As barriers to change are often rooted in personal cognitive frameworks (sensemaking) and how we make sense of situations supports or inhibits change (Millar et al 2012), this suggests that when trying to encourage behaviour change for sustainable development, a complex problem, a new cognitive framework may be required, one that doesn't regard complexity as a problem to be managed away but as an opportunity for innovation. Complexity thinking is a cognitive framework, based on non-linear relationships and an understanding of the whole system (Dent 1999) that could offer such an alternative approach. It is a multidisciplinary, holistic, flexible, integrative systemic approach, (McMillan 2004, Mitleton-Kelly 2003) that can offer *'fresh thoughts and insights for dealing with the complex world in which we live'*. (Johnson 2009:xi)

Change, from a complexity perspective, is an emergent response to localised processes, (Wallis 2008, Mitleton-Kelly 2003) the implication being that small changes, as a result of agents acting locally in their own interest, could bring about the larger scale changes apparently demanded by sustainable development (McMillan 2004, Stevens and Cox 2007). Unlike linear rational approaches, in which powerful change agents attempt to control the processes to achieve intended outcomes, a complex adaptive system is a co-created system in which multiple agents, acting independently exhibit self-organisation. It is a flexible approach that supports local adaptability and for this reason it may be a more appealing way to encourage the voluntary sector, a diverse sector with multiple aims and objectives, to support behaviour change for sustainable development in their local communities. Using a complexity framework to help actors understand the world differently (cognitive restructuring) therefore, may offer a new way of addressing a complex problem like

sustainable development, which is difficult to define and delineate, involves many actors, human and non human, and incorporates many uncontrollable variables .

1.2 Research Aims

The research had two aims: to explore the current understanding in the voluntary sector of sustainable development and the need for behaviour change and, to consider if complexity thinking, enacted through Communities of Practice (Wenger 2006), as a new and different approach to behaviour change that encourages cognitive restructuring, could overcome the lack of change in the sector and encourage engagement in the support of behaviour change for sustainable development in local communities. To meet these aims the following questions were addressed:

- What do voluntary sector stakeholders understand about sustainable development and the relationship between the natural environment, their stakeholders and local communities?
- Is sustainable development regarded as a relevant issue for non environmental organisations to support?
- What are the barriers to the promotion of behaviour change for sustainable development?
- Could complexity thinking, enacted through Communities of Practice, encourage cognitive restructuring and increase voluntary organisation support for behaviour change at a local level?

1.3 Structure of the article

The next section (2) outlines the contested nature of sustainable development and the weaknesses of linear rational approaches when dealing with complex problems. It also includes an overview of the relationship between the voluntary sector and sustainable development and why sustainable development is a relevant issue for the sector to address.

Section 3 outlines the methodology used to address the research questions, including the use of conversation as a data gathering approach. Conversation, consistent with the co-creative principles of complexity, is a way of uncovering new, different and unheard stories that contribute to understanding of a situation at a particular point in time because it places

the researcher as a co-creator of the system, learning with the participants rather than researching on them (Kuhn and Woog 2005).

The next section, 4, highlights the key findings, most significantly that sustainable development was not well understood by voluntary sector participants and consequently it was seen as lacking relevance. Other barriers to change included lack of resource and a breakdown in trust between the sector and local government which reduced the cooperation between the two sectors on the achievement more sustainable communities.

The conclusion discusses the potential of Communities of Practice (CoPs) (Wenger 2006) as a way of bringing together local stakeholders to discuss sustainable development. In this co-creative process agents working together retrospectively make sense of experienced situations (Weick 1995) and this cognitive restructuring process could change the understanding of sustainable development and increase its relevance for urban non-environmental voluntary organisations. Furthermore, working together would build relationships between the local authority and the voluntary sector, increasing the potential for cooperation on the creation of more sustainable communities and the involvement of local voluntary organisations in the support of behaviour change.

2.1 Sustainable Development a complex problem

Sustainable development, first outlined in 1987 in the Brundtland Report, 'Our Common Future', (WCED) as a way to overcome the problems of anthropogenic damage to the natural environment, is a concept for social modernisation on a global scale, focussing on the triple bottom line of social equity, environmental quality and economic prosperity (Voss et al 2006). It is however, a complex issue in both scale and scope and faces confusion around language and definition (Gibson 2000, Smyth 2006, Porritt 2005, Springett 2006). The many differing definitions (Lozano 2008) and various other words and phrases associated with similar issues, such as, climate change, green, eco friendly, environment, only add to the confusion. UK Government policy documents use a similar variety of terms, such as, sustainable consumption, sustainable communities, low carbon transition. Smyth (2006) however, thinks it is not the complexity of the concept that is the problem but the way it is interpreted (cognitive frameworks). Aware of the power of representation when discussing environmental issues, he is critical of the media for peddling a normative

approach that constrains discussion of alternative approaches. Over simplification using easily absorbed titles such as, global warming or climate change, leads to the belief that there are simplistic linear solutions, achievable through causal interpretations (Smyth 2006, Voss et al 2006) Linear approaches are most effective in stable systems where variables can be controlled but the natural environment is a dynamic and changing system and sustainable development is not a limitable, decomposable problem that can be managed in a linear way.

'We are shaped and shape a continuously changing environment.' (Stacey 2001:250)

Furthermore, sustainable development is a global problem requiring action by numerous governments, organisations and individuals (uncontrollable variables) each of whom behave according to their own unique decision making process, thus action by any one individual or organisation will be seen as having little affect (Price and Shaw 1998). The complexity of sustainable development, therefore suggests that structural linear approaches to change behaviour, such as, regulatory reforms, may not be sufficient to encourage the behaviour changes needed to ensure a sustainable future (Haber 1992, Gladwell 2000, Voss et al 2006).

A further weakness of linear approaches when addressing complex problems like sustainable development, is that of unintended consequences or second order problems, which require further actions in a continuous cycle, such that more time can be wasted trying to solve the second order problems than addressing the original issue. (Voss et al 2006, Rittel and Webber 1973, McMillan 2004)

'In rational problem solving unintended consequences become externalities to be managed, or second order problems.' (Jahn and Wehling 1998)

Rather than trying to simplify sustainable development into discreet problems to be managed, a new cognitive framework may be required. (Gladwin et al 1995, Springett 2006, Smyth 2006, Voss et al 2006) In order to overcome the limits of linear management and planning (Voss et al 2006), the new approach needs to move away from short term fixes to take a longer term view that acknowledges the interconnectedness of all aspects of our lives. The approach must also be flexible to allow adaptation to local situations and respond to the changing environment (Smyth 2006). In this framework sustainable development, a

complex, value laden, multidimensional, dynamic concept, would act as a guide for human behaviour rather than a problem to be solved using formulaic management practices.

Complexity thinking is a non linear approach that recognises interconnectivity and interdependency (McMillan 2004, Stacey 2007). It focuses on dynamic relationships, rather than linear cause and effect determinism, and has the potential to transform our thinking about our relationship with the natural environment, recognising our interdependence rather than our separation. Approaching sustainable development from this perspective would shift the focus from examining facts to exploring the relationships between the agents, structures and policies that influence behaviour (Blewitt 2010:40) and this would begin to change our understanding of the social and economic consequences of anthropogenic damage.

2.2 The Voluntary Sector and Sustainable Development

The voluntary sector is considered an engine of progressive change and a voice for society's ambitions about the kind of world we want to live in (Mulgan 2007). Through organisations such as Friends of the Earth, the National Trust, the World Wildlife Fund for Nature, and Greenpeace, it has been at the forefront of raising awareness and providing information about environmental issues.

'Civil society has often been ahead of other sectors in warning of new threats - like those from climate change - as well as embracing new opportunities.' (Mulgan 2007)

Recognising the strength of the voluntary sector as a change agent, the UK Government launched Every Action Counts (EAC) and the Third Sector Declaration. Funded by DEFRA as part of the UK Government's Sustainable Development Strategy, Securing the Future (2005), its aims were to embed sustainable development into the existing work of local community and voluntary groups.

'Voluntary and other non-profit organisations can mobilise millions of people in the fight against climate change to help create and safeguard a better future. When we act together, the scale of our achievements far outstrips what any of us could achieve alone. The thousands of organisations that make up the third sector are powerful forces for change in our society – and it's a force we need on our side in the fight against climate change. We know that climate change will hit the world's poorest and most vulnerable people first, both here and abroad. I believe this declaration will empower every voluntary organisation in the country, regardless of its size or location, to be part of the broader movement to tackle

climate change with urgency and determination.' (Environment Secretary, launch of the Third Sector Declaration on Climate Change for Third Sector Organisations 2007).

There is an assumption implicit in the above statement that the Third Sector Declaration would galvanise the voluntary sector into action, but the sector, it seems is not rushing forward to embrace behaviour change. EAC/CAG (2008) found that only a relatively small number of professionals in the voluntary sector understood sustainable development and The Big Lottery report (2006) on sustainable development identified that environmental considerations were one of the areas that voluntary organisations needed more help and guidance on. Despite emerging academic interest in the question of whether, and if so, how the voluntary sector can promote pro-environmental behaviour change, the mechanisms of change are not yet well understood (Buchs et al 2012, Georg 1999, Seyfang and Smith 2007, Middlemiss 2009, Middlemiss and Parrish 2010) and this leaves scope for further research into the voluntary sector's response to the Government's ambition.

If sustainable development is to become an important concept for social modernisation (Voss et al 2006), and the voluntary sector is to mobilise millions of people in the fight against climate change, it is important that the sector fully understands the need for change. At a time when many voluntary organisations are struggling to secure the funds and resources needed to support their core organisational mission, (Klein 2004, NCVO) they may be reluctant to devote resources to the promotion of behaviour change unless they can understand its relevance to their service users.

3. Methodology

Smyth (2006) believes that when considering issues around sustainability and the natural environment it is important to listen to the stories of all people, not just the government and environmentalists. The research framework was therefore designed to capture multiplicity of locally determined discourses around behaviour change for sustainable development, focussing on urban non environmental organisations (those found least likely to change). Set in a major UK city with a population of around 500,000 an inductive, iterative, participatory approach, based on the principles underlying carbon conversations (Buchs et al 2011) was used. Thirteen conversations took place with voluntary sector stakeholders, identified using strategic sampling to ensure the involvement of organisations

with different missions and participants from different positions within organisations, including service users.

Conversation, as a form of cooperative reflection, is seen as enabling individuals and groups to form new understandings as they question themselves and the reality they unconsciously subscribe to (Mills 1993). One of the advantages of conversation as a data gathering approach is that it provides the flexibility to follow the data and learn from the participants (Creswell 2007). The researcher becomes an active agent in the production of knowledge, researching with the participants not on them (Bettany and Woodruffe-Burton 2009) and removing the interviewer from a position of an expert (Kuhn and Woog 2005) creates a situation where dialogue can flow freely. Reducing the barrier between the researcher and participants allows space for new ideas and different interpretations to emerge and as a different type of exchange that has the potential to challenge contradictions and shift patterns, it seemed an appropriate way to explore the complexities and diverse narratives surrounding sustainable development.

The contested nature of sustainable development, and the interdependency between the social, the environmental and the economic, implicit in the concept, requires us to ask fundamental questions about our relationship with the natural environment and how we live our lives. Although the use of conversation to explore the diverse narratives was not designed explicitly to bring about change, merely to capture the various discourses around sustainable development and understand how they influence behaviour, it was evident that participants were undergoing cognitive restructuring as they participated. We engage with the world via our socialised pre-understandings, (McAuley et al 2007) and individual beliefs and understandings affect how we respond to sustainable development. Complexity thinking as a new framework that acknowledges multiple realities, interconnectivity and interdependency and encourages cognitive restructuring could therefore increase the potential for voluntary organisations to understand the relevance of sustainable development for their stakeholders and increase their support for behaviour change.

It is important to note that researchers cannot help but intervene in the process of representation, (Geertz 1988) and this is particularly relevant when using a conversational approach. Coherence, both logical coherence and contextual coherence, can only be

achieved by critical awareness on the part of the researcher of their role in the co-creation of the knowledge (McAuley et al 2007). As it is not possible to be an ahistorical neutral observer/knower, in order to understand the other, the researcher needs to understand him/her self and their perspective of truth (McAuley et al 2007) and it is therefore important the researcher acknowledges their role in the research process and is clear about how their personal choices influenced the research outcomes using reflexivity which recognises that the knowledge is self knowledge, generated through self reflection.

'We have to hold ourselves open and accountable through thoughtful reflexive design and data gathering, applying a critical perspective to one's own knowledge claims.' (Kendall and Wickham 1999:101)

4. Findings and Analysis

The most significant finding was the lack of understanding of sustainable development amongst voluntary sector participants. Some had never heard of the phrase, some associated it with financial sustainability, and some recognised its association with environmental issues.

'It would be financial. I think sustainable development is normally used in the context of environmental, but for us we'd be talking about financial.'

Those that associated it with the environment were surprised to discover, during the course of the conversation, that it was also concerned with social justice.

'It wouldn't really have come to mind - sustainable development in relation to social justice? ...I have not really heard of it before. It's the first time I've heard that one....Social justice is something we do every day, but thinking about it in relation to green issues, I haven't made that link.'

There was more familiarity with the word environment, but most preferred to use the word 'green'. However, 'green' issues were seen as lacking relevance for non environmental organisations, because as with sustainable development there was a lack of awareness of the inter-relationship between social justice and green issues. Environmental issues were in some cases regarded negatively, as detracting from core operations and increasing marginalisation.

'Most of the time people are responding to a need..... Has environment got anything to help these people get out the situations they are in?If the environment can help, great, the two will meet, but there might be times when trying to do that can just be seen as getting in the way or making it more difficult.'

'I have a view that to be green you need to spend more money. I think there is a link between higher cost green products and marketing opportunities of some big corporations. They

make you spend money you don't need to spend....This could actually make people feel more marginalised.'

Climate change was familiar to all and elicited strong emotional responses, as participants expressed their doubt and confusion about its meaning.

'There is too much conflicting information. My husband for instance thinks it is a load of rubbish. While ever there is conflict, doing something about it is going to be difficult.'

'I think it is a load of crap....We all have to be socially responsible to make sure we don't do anything that is really bad but I think our impact is so minimal when you have people like America guzzling all this carbon emission out. What we are trying to do is only a small pinprick.'

'I'm not wholly convinced .. The climate is so big. It's how we actually affect that change by not buying aerosols. I'm not cynical about it, but I'm more questioning about the whole climate change thing.'

Climate change is an example of how poor communication and mixed messages can diffuse the need to act. (Georg and Fussel 2000, Weick 2005). The comments above are examples of the importance of language in sensemaking (Richardson and St Pierre 2008, Weick 2005) and if policy makers want to increase support for behaviour change they need to consider account how they communicate the messages.

'Language, categorisations, labels and their systems of production and mode of consumption are critical in the reproduction and transformation of the social realm'. (Bourdieu quoted in Everett 2002:56)

Another issue related to poor communication is that participants in this research were not aware of the EAC campaign, a national government sponsored campaign to increase behaviour change in the voluntary sector. When, in the course of the conversation, they heard about it, they were critical, calling it top down and bureaucratic, based on the false assumption that the provision of information would be sufficient to encourage behaviour change.

'It's one of the things that really, I'm irritated by it because I feel that just reading it, (Third Sector Declaration) I feel it excludes people in some way an exercise in ticking boxes or something.....Its all very well, you might sign a declaration but how do you get people to have some sort of sense of ownership or involvement in it ... if you're looking for an integrative approach then having a pile of policies that everybody hasn't read or a declaration someone has to sign - it feels horribly detached.'

Sustainable development therefore, as understood by participants in this research, was not seen as a relevant issue for non environment voluntary organisations to engage with

because the potential social and economic consequences to their stakeholders of anthropogenic damage to the natural environment were not recognised. The controversy and confusion surrounding climate change similarly diffused the need to act and the consequent lack of relevance of sustainable development to voluntary sector stakeholders makes it unlikely that resources will be used to support behaviour change. However, if there was better understanding of the link between social equality and the state of the natural environment, for example, how air pollution from traffic in inner cities contributes to the ill health of residents, or how wasting energy increases debt, urban, non environmental organisations may see sustainable development as having more relevance to their mission and this would increase the potential for action.

Other barriers to change that were identified included: lack of resource and lack of support and guidance from government. The local authority has overall responsibility for promoting sustainable development, and one of the roles of city leadership should be about deepening public commitment to action by effectively communicating the relevance of sustainable development at the local level (Hale 2010, EAC/CAG 2008). This research however, identified problems with the relationship between the voluntary sector and the local authority.

‘Although they (LA) keep saying they’re going to push the climate change issue and have sort of, awareness raising campaigns, I don’t feel as though they’ve really got their act together well. It’s alright pledging things but it’s not going to actually change the climate is it?’

‘They (LA) say, well we consulted with the community. They have an idea what they want to do and they will move heaven and earth to deliver that but in their way. They are very paternalistic. They believe that they can do everything better than anyone else and that the statutory sector is the only way that things can be done - more concerned with making sure that they have sufficient income to keep their own staff in jobs than really. They don’t respect the Compact in any shape or form.... They re-invent the wheel... do things themselves when they could allocate money to voluntary organisations with the skills and expertise to do it.’

The breakdown in communication with local government and the lack of awareness of a national campaign suggest that there are weaknesses in the Government’s aspiration to mobilise the voluntary sector in behaviour change. If current approaches, seen as top down and simplistic (linear), by participants are not effective, this supports the need for a new approach to encourage the voluntary sector to support behaviour change at a local level.

Discursive processes, social networking and group based deliberation have been found to have benefits in terms of encouraging environmental behaviour change (Jackson 2005, Middlemiss 2008) and may be more effective than paper based Declarations. Face to face engagement creates the space for participants to respond emotionally and the importance of emotion as a way of changing understanding and behaviour was expressed by participants in this research.

'If people don't understand it and don't feel emotionally involved it won't achieve its aim.'

A participant who was an animal lover claimed she wasn't interested in sustainable development but as we conversed she realised that global warming could be harmful to polar bears. She immediately became more energised about the need for sustainable development, demonstrating how emotion is an essential explanatory element in understanding how feelings shape the way individuals construct themselves and understand the world (Finemen 1993). It helps people engage and reflect on what they think and an approach to behaviour change that encourages emotional engagement could be more effective than current linear approaches, as the following comment suggests.

'Probably something that targets peoples emotive feelings might be slightly better than just a lot of complicated terms and a declaration that people are not going to feel particularly ... identify with.'

Current Governmental approaches were seen as linear, top down and unappealing to the sector and this supports the idea that voluntary sector participation in behaviour change may be better supported through face to face interaction that acknowledges the importance of emotion. A new approach to behaviour change for sustainable development therefore could be achieved by setting up a Community of Practice (CoP) around sustainable development involving local stakeholders, not just the voluntary sector but local community representatives, voluntary sector service users and local government.

A CoP involves

'groups of people who share a concern or passion for something they do and learn how to do it better as they interact regularly.' (Wenger 2006)

People engage in a process of collective learning where the work is done in conversation based on the principle that learning is a social process that comes from our experience of

participating in daily life (Wenger 2006) The group takes collective responsibility for the learning they need and joint activities and discussion build relationships that not only enable mutual learning but develop shared repertoires of resources and tools - a link between learning and action. The creation of self organising teams (Communities of Practice) in organisations has been shown to bring about change (Macmillan 2004, Stevens and Cox 2007) and although CoPs are generally applied in organisational contexts, there is no requirement for members to work in the same organisation. Engaging in this way therefore, has the potential to encourage voluntary organisations to support behaviour change in their local communities, because cognitive restructuring as a result of engagement, would increase the understanding and relevance of sustainable development and the need for behaviour change. Furthermore, a conversational approach where participants worked together, engaging as equals, would help to rebuild the trust between the voluntary sector and local government and encourage more cooperative working.

Although this research was not designed to produce changes in behaviour, an unexpected outcome was the small changes in understanding expressed by participants as they experienced cognitive restructuring through engagement in conversation. These changes further support the idea that face to face engagement or conversation has the potential to encourage cognitive restructuring.

‘I really enjoyed talking about the issues. I do quite a lot to be green but wasn’t aware of it. I also realise how good it is to talk about these issues. It helps you clarify things, realise what you are doing. You don’t get much opportunity to talk about these things and it is very valuable. The environment is really important to me, something I didn’t realise’.

The link between cognitive restructuring and innovative behaviour change was demonstrated by another participant who, once he understood the importance of sustainable development, thought of a way to do something about it without incurring extra expense.

‘If it would be possible to get a volunteer to take that on I could try and recruit a volunteer specifically.’

A complexity approach to change, enacted through a CoP, therefore has the potential to change understanding (generate cognitive restructuring) which could overcome the lack of

relevance of sustainable development to the sector, increase trust and generate innovative solutions to behaviour change at a local level.

5. Communities of Practice – a new way of encouraging behaviour change for sustainable development?

This research found that lack of understanding of sustainable development by non environmental voluntary sector participants, and in particular, lack of awareness of the social and economic impacts of environmental issues on local communities, was a major barrier to their engagement in behaviour change. Sustainable development was seen as lacking relevance to the organisational mission, and consequently there was little justification for organisations to commit precious resources to encourage behaviour change at a local level.

Traditional linear approaches to change based on the expectation that the provision of new information, for example, the Third Sector Declaration and EAC campaign, would be enough to stimulate change, did not seem to have been effective, and lack of a working relationship between the voluntary sector and local government, was a further barrier to change as it inhibited joint working on the creation of sustainable communities. It has been suggested that sustainable development, a complex problem requires a new approach to change (Voss et al 2006) and the findings from this research support this idea.

How actors make sense of sustainable development appears to be the key to change and in a complex system like human society, changing the way actors understand or make sense of sustainable development could be enough to increase the potential for behaviour change.

‘Sense making is a diagnostic process directed at constructing plausible interpretations of ambiguous clues sufficient to sustain action’. (Weick 2005:57)

Individuals interpret, translate and mobilise ideas to fit within their frame of reference and in a study by Georg and Fussel (2000), greening was enacted differently depending on the meanings attributed to it. What something means to an individual is a product of the discourses they engage in, and encouraging discourse around sustainable development therefore could help individuals make sense of the world in a way that enables action (cognitive restructuring) (McDaniel 2007, Taylor and Van Every 2004).

'The most basic mechanism of acquiring new information that leads to cognitive restructuring is to discover in a conversational process that the interpretation that someone else puts on a concept is different from one's own'. (Schein 1996:31)

We form new understandings through questioning ourselves and the reality we unconsciously subscribe to (Mills 1993) and engaging in conversation, as a form of cooperative reflection, enables us not only to discover other's narratives but to challenge our own taken-for-granted assumptions (Kuhn and Woog 2005).

'What was previously unconscious is made conscious in a manner rich in consequences.' (Habermass 1974:23)

In a complex system change is a response to dynamic interaction between actors and increasing interaction increases the potential for change (Macmillan 2004, McDaniel and Driebe 2005). Conversation is a way of increasing interaction, that acknowledges the importance of values and emotions in behaviour change (Georg and Fussel 2000), stimulates cognitive restructuring and encourages us to learn from each other. Encouraging conversation therefore, through a Community of Practice (COP) (Wenger 2006) involving a diverse cross section of local stakeholders: voluntary sector, service users, local community representatives, local government and other stakeholders such as, local businesses, therefore offers a new of approaching behaviour change for sustainable development.

CoPs bring different stakeholders together to share knowledge and the new understanding developed through personal interaction, serves as a new attractor that enables participants to see the world differently (Backstrom 2004). Frame and O'Connor (2011) refer to it as building collective intelligence through dialogue and deliberation (double loop learning).

'If organisational members can better understand how they construct themselves and their organisation they will be better able to address their problems' (Barry 1997:43)

An approach to change based on CoPs is not about top down management control. It is a flexible approach that allows organisations to develop locally appropriate interventions as they work together. Doppelt (2003) feels that the distribution of power and authority is essential for change and the participatory, non-hierarchical ethos of a CoP moves away from reliance on experts to provide solutions to focus on joint learning and the development of locally appropriate ideas that work for each organisation – locally dispersed power. Working together in this way would also help to build trust between participants and encourage

cooperative working which could further increase the potential for behaviour change and innovation (McDaniel 2007). This type of non-hierarchical approach would be particularly appealing for voluntary organisations, uneasy with the current top down approach they see from government, and its flexibility would allow the diverse organisations in the sector to develop ways of working that meet the specific needs of their service users.

The opportunity to learn about the different perspectives of each agent could promote not only a more inclusive understanding of the relationship between participants, it could also bring about a re-examination of the relationship between humans and the natural world, and a better understanding of the relationship between social, environmental and economic activities, inherent in the concept of sustainable development. This would facilitate a move away from individual actors operating independently (linear rationalism) towards a more holistic, co-operative approach to sustainability, as stakeholders realise the mutual benefits or threats of anthropogenic damage.

Sustainable development requires us to challenge dominant discourses and expose the hidden and unheard in order to open up the possibility of alternative discourses about how we wish to live. CoPs are supportive of this and this is why they may be particularly effective when considering the need for behaviour change to address sustainable development, which, with its multiple definitions and changing narratives renders traditional linear approaches to change ineffective (Blakie 2000).

Another benefit of encouraging dialogue through CoPs is that as participants begin to understand their role as co-creators of the system, constituted through the discourses and organisational practises that they co-create and that constitute them, they may also come to realise that they are not powerless but active participants that can challenge dominant discourses and contribute to change (Rose and Miller 1992). The inclusion of alternative voices, (voluntary sector service users) by allowing different interests to be heard further increases the potential to challenge dominant hegemonies, drive emancipatory democracy and bring about a paradigm shift. (Springett 2006)

Complexity thinking, enacted through CoPs therefore, could be a new and different way of encouraging non environmental voluntary organisations to support behaviour change for sustainable development at a local level. Complexity thinking transcends traditional linear

rational frameworks and offers a radical re-appraisal and evaluation of the influence of the dominant paradigms on our thinking. (Sterling 2003) It counters the modern ideological flight from body, nature and place, i.e. the separation between humans and nature, and surmounts and transcends modernism, whilst recognising its achievements and limits (Spretnak 1999). Shifting our understanding to affirm complexities and respect mutual integration moves us away from seeking prescriptive solutions (Cilliers 1998), and the re-affirmative, oppositional and critical, alternative and innovative approach would create an emerging nexus of thinking out of which what is important will emerge (Sterling 2003).

'Environmental commitment cannot be assumed, but emerges from the frames and practices by which people make sense of their life'. (Georg and Fussel 2000:184)

A complexity approach to behaviour change therefore would not be top down with planned simplistic solutions using targets and indicators to influence behaviour. Uncertainty would not be seen as a barrier to be managed away but as a creative opportunity for innovation (McDaniel and Driebe 2005) and the focus would move from managing and controlling towards supporting agents to take responsibility for the problems and developing their own solutions, based on the principles of self-organisation and co-creation. In other words, the impetus is not from the originator or the persuasiveness of originator but from the interactions (Latour 1986). The role of Government would be to clearly communicate the importance of sustainable development, bring stakeholders together to co-negotiate a vision for the future and support interaction between the various stakeholders to bring about this vision (Stacey 2007).

This paper suggests therefore that complexity thinking, enacted through Communities Practice (Wenger 2006), offers a new way of thinking or sense making (cognitive restructuring), that could support behaviour change for sustainable development at a local level, overcome the barriers and build trust through shared learning. The outcomes would be negotiable and not wholly dependent on either the voluntary sector or any other participating agent. They would be the product of cooperative working between all stakeholders. CoPs utilise the capacity of society to think differently about the choices ahead and the flexibility of the process and the non-hierarchical ethos could be attractive to the voluntary sector and encourage them to support locally appropriate behaviour changes in their communities.

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