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A Systems Approach to the Research of People's Relationships with English Hedgerows

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Abstract

Although complexity is often recognised as a feature of landscapes, any assessment of their value and prescriptions for management are usually based on a narrow, reductionist framework, involving either just wildlife or people but rarely both. This paper demonstrates how systems ideas have been applied to provide a broader approach to researching hedgerows in the UK, drawing on the idea that holistic thinking brings together multiple views of stakeholders so as to identify future options. Hedgerows in the UK are valued for ecological, functional, historical, visual and personal reasons and they are perceived very differently by those with direct or indirect relationships with them. The cultural dimensions of hedgerows and their implications for future hedged landscapes were investigated through the collection and exploration of different stakeholder perspectives. Based on the findings of this research, it is argued that considering both the objective and the subjective hedgerow values of stakeholders offers opportunities to examine the different boundaries to their systems of interest and so help to include and accommodate complex human factors.

1. Introduction

There is currently much concern in the UK over hedgerow loss, mostly through complete removal but equally as a result of what 'experts' perceive as neglect or lack of management. Between the years 1984 and 1993 there was an estimated net loss of 158,000 kms of rural hedgerows (The Countryside Agency, 1999). Hedgerows are part of the UK Government's Biodiversity Action Plan and 'special' hedgerows have recently been protected through legislation (Department of the Environment, 1997). Government policy has been closely linked to research on hedgerows and there exists a gathering body of scientific knowledge on the ecological value of hedgerows to the English landscape (for example, Barr, Gillespie and Howard, 1993; Barr, Britt and Sparks, 1995) and their history is increasingly well documented (Rackham, 1986; Morgan Evans, 1994). However, the cultural aspects of hedgerows, and what hedgerows mean to people today, have been neglected. The visual, aesthetic, ephemeral and emotional aspects and their contribution to landscape character, sense of place and history may be considered as being of equal importance as their ecological aspects, yet academic research has focused on the ecological aspects and what farmers do to hedgerows. While a study

by Coeterier and Dijkstra (1976) has evaluated the effect of visual changes for local people in the hedgerow landscape of the Goese Peole region of the Nertherlands, and Burel and Baudry (1995) have taken a holistic view of hedgerows, incorporating farmer and non-farmer perceptions of a hedged landscape in France, no research has been carried out, on what hedgerows mean to people in England, in their 'real' world setting, particularly members of the public (Lane and Oreszczyn, 1997).

Within this research I take the view that the role hedgerows play, as part of the English landscape, is dependent on all those who have a relationship with them. Policy and management decisions will inevitably affect, both directly and indirectly, a variety of people each with their own perspectives, e.g. farmers, policy makers, the rural and urban public, historians, ecologists and conservationists. All these groups and the individuals within them, may be viewed as having a stake in hedgerows as part of their common cultural landscape. I have therefore attempted to reach a more complete picture, by exploring and bringing together the scientific and non-scientific aspects of our hedged landscape and different people's relationships with it. That is, hedgerows are treated as part of the 'total human ecosystem' (Naveh, 1995). The aim was to embrace the richness of the topic rather than to simplify it; to move away from being overly concerned with people's behaviour and what people do to the environment, and towards a more positive approach of finding ways of working together. This paper sets out the systems approach taken and methods used, and briefly describes some of the findings.

2. A Systems Approach to Researching Hedgerows

The research was based on a systems approach to researching the environment (Ison and Blackmore, 1997), where hedgerows were considered as an integral part of a human made landscape with which people have a relationship. Systems thinking, i.e. thinking of wholes in terms of connectedness, relationships and context, underpins the whole of the research. It informs not only the theoretical framework, but also the structure, methodology, fieldwork, analysis and conclusions. Within the research I have particularly drawn on the ideas of researchers engaged in applied systems research.

In common with developments within other disciplines, particularly those within the social sciences, applied systems research has moved away from traditional positivistic approaches to new research approaches which consider the complexities of humans as part of the system. Originally systems thinking was based on a mechanistic approach whereby the world was perceived to contain systems which could be 'engineered' to work effectively. Such 'hard' approaches were and still are, heavily dependent on mathematical modelling. However, it became apparent that the traditional applied systems approaches, found in the disciplines of systems engineering (systems dynamics and systems analysis) and operations research, were incapable of dealing with ill-defined ' messy' problems involving humans (Ison, 1993, Checkland and Haynes, 1994). The term 'mess' has a specific meaning in this context and was first coined by Russell Ackoff (1974) in response to a recognition that problems were taken up by decision makers rather than being given to them. Thus, in the 1970s and 1980s, systems thinking became more systemic,

adopting an 'action' research approach in an attempt to find better ways of tackling messy problems.

Table 1 identifies the main differences between hard and soft systems traditions.

(Insert table 1 here.)

Although contrasts can be drawn, it should be noted, however, that it is not a case of 'hard' systems being 'wrong', and 'soft' approaches being 'right' as both will have their place in an investigation. However, the importance placed on human relationships within this research led to a soft approach being considered more useful.

The 'hard systems' thinking framework was particularly challenged by Checkland (1981) with the development of 'soft' systems thinking. He coined the term 'human activity systems', which may only be described from a particular persons own viewpoint or world view. Whereas in 'hard' systems thinking the system being observed is considered as being separate from the observer, with 'soft' systems the 'system' is not perceived as existing in the outside world but as something constructed by humans – a 'system of interest'. The soft systems methodology he developed from this new thinking therefore places emphasis on the way in which humans make sense of their world, and processes of learning that can involve multiple perspectives on a situation (Checkland and Haynes, 1994). These aspects were particularly drawn on within this research.

2.2 The Importance of Relationships

The concept of relationships rather than values was also central to the research. People's values, a term which has many different interpretations depending on the purpose of the research, have been the subject of study by social scientists for many years in the belief that they are at the root of people's attitudes and behaviour (van Deth and Scarborough, 1995). Burgess and Gold (1982) have considered environmental values as being represented by two contrasting theoretical approaches - one which views values as an absolute quality, whereby their worth is viewed as being intrinsic or independent of context, and one where values are seen as being relative, i.e. assigned on the basis of comparative assessment, and so are dependent on context. They judge the latter to be closer to human experience and behaviour. In their concept of 'valued environments' they view values as being dynamic whereby, through the generations, preferences for different types of environments have come in and out of fashion. However, values are frequently viewed as something we place on objects detached from us.

On the other hand, the term 'relationship' encompasses the way we interact and engage with an environment of which we are an integral part. In systems thinking, the properties of the parts can only be understood in the context of the larger whole. Capra (1996) comments on how what we call a part has been shown by quantum mechanics to be "a pattern in an inseparable web of relationships." Whereas in more mechanistic paradigms the world is viewed as a collection of connected objects, in the systems paradigm the objects are themselves recognised as networks

of relationships and these networks are themselves embedded in larger networks. As Capra (1996) notes "for the systems thinker, relationships are primary". Rather than thinking in terms of beliefs, attitudes and behaviour towards an external environment or object such as a hedgerow, we can think in terms of an interconnected web of relationships. We place ourselves within the system boundary rather than outside it. This moves away from thinking in terms of what humans do to the environment and what may be 'right' or 'wrong' which comes from thinking in terms of the environment as an object, to thinking in terms of people within an interconnecting web of relationships.

Viewing reality as an inseparable network of relationships has implications for ways of researching. No longer is the researcher an objective observer of the world, placed outside the system. While the systematic practitioner may use systems methods or techniques, the systemic practitioner becomes part of the system of inquiry, reflecting on the relationship between his or her self and the system in which they practice (Armson, 1999). In terms of this research I acknowledge that I will bring to the research my own personal view of the world which will inevitably influence what I do and the way I do it and any 'findings' can only be my perspective.

2.3 Landscapes and People

Within the area of landscape research, despite a growing recognition of the need to integrate the objective with the more subjective areas of research and similarly the hard and soft landscape values (for example, Naveh and Lieberman,1994; Naveh, 1998; Nassaeur, 1995 and 1997), there remains a divide between them, with research tending to be concerned either with the human or the non-human aspects of landscape, but rarely both. Although there are notable exceptions where the social and the scienctific have been brought together (for an example concerning hedgerows see Burel and Baudry 1995; Burel, 1996), the general landscape literature concerns itself with people's perceptions and values of landscape and nature, (see for example, the collections in Gold and Burgess, 1982 and Sinha,1995), while the landscape ecological literature focuses on aspects concerning wildlife. Selman (1996) particularly notes the dangers of scientific interest in landscape dominating environmental solutions at the expense of the social, warning that it is "denying us the possibility of creating visionary, multipurpose landscapes of the future".

Further, while there is much concern over the need to be interdisciplinary and participatory when planning or managing the environment (see for example; Woodhill and Roling, 1993; Scoones and Thompson, 1994; Grimble, Chan, Aglionby and Quan, 1995), landscape research has not generally concerned itself with being participatory. Consequently, the lay person may fail to see the relevance of the research.

Landscapes are the result of complex processes and interactions between landforms, ecosystems and humans and between humans themselves.
As Dansereau (1975) has noted, people do not engage with the landscape in a detached way, rather they have a relationship with landscape that is a cyclic, or cybernetic process. Nassauer (1995) comments that "culture and landscape interact

in a feedback loop in which culture structures landscapes and landscape inculcate culture." That the term landscape is a cultural concept is evident from the different definitions of landscape put forward by people with different concerns and indicates the way in which different people within the field of landscape studies view it. For example, the Countryside Commission, an organisation with a focus on people, has defined landscape as "the visual appearance of the land, including its shape form and colours" (Countryside Commission, 1993), while landscape texts with a scientific focus describe landscape as "a heterogeneous land area composed of a cluster of interacting ecosystems that is repeated in a similar form throughout" (Forman and Godron, 1986), or as "a mosaic where the mix of local ecosystems or land uses is repeated in a similar form over a kilometres wide area" (Forman, 1995). This highlights the way that different people will view landscapes differently and that it cannot therefore be treated as being something independent of their human context, i.e. as something 'out there' which can be researched and for which a 'true' and final solution may be found.

As commented on earlier, the emphasis within the research has been on relationships. Rather than ask questions concerned with what people value about hedgerows, it has been concerned with the relationship or way they engage with them and those concerned with hedgerows. Questions such as whether or not a hedgerow has intrinsic value or biodiversity value, are dependent on a person's relationship and hence perspective i.e. where they are placing the boundary to their system of interest. That is, the 'system' depends on where an individual, with their particular view of the world, draws their boundary. This research has therefore been concerned with asking boundary setting questions, which is one means of exploring environmental issues (Ison and Blackmore, 1997).

3. Methods

Within the new systems traditions, researchers place themselves within the system rather than being an objective observer of a system. Research based on systems thinking, therefore, does not fit neatly into the conventional research approaches to landscape. The research process described here has not taken the common 'scientific' form whereby a hypothesis is stated and then tested. I felt that it was important that the central research question, 'What relationships do different groups of people have with hedgerows?' should be answered by people themselves, and in their own words. That the data should as far as possible, speak for itself and that the theory should be firmly grounded in the data. Inevitably the research question also involved considering the relationships that people had with each other concerning hedgerows. A further concern was that the findings should be accessible to experienced lay people.

Systems approaches are designed to cope with messy situations. As a systemic approach, grounded theory (Glaser and Strauss, 1967; Glaser, 1994) offered a good method for dealing with different kinds of data. Its generative nature was particularly useful for the public perspective, where there is little existing academic theory specifically relating to hedgerows. It is also concerned with producing theory that can be readily understood by the lay person. In the past the trend has been for researchers to deal in the wider perspective, offering higher formal theories, while practitioners, i.e. those actually living or working with people in the

environment, are dealing with individual perspectives and need practical advice. In this respect grounded theory offers the potential to bring the theory and practice closer together. Further, within grounded theory, theory is generated from the data as the research process proceeds rather than by posing and testing an initial hypothesis. This allows for the research to proceed according to the concerns of the people involved rather than those of the researcher.

3.1 Grounded Theory

Grounded theory emerged out of attempts to close a perceived gap between theory and research in the social sciences and from a desire to generate theory which was relevant to the people involved in the research. Glaser and Strauss (1967) argued that within social research, there was an over emphasis on verifying theories at the expense of discovering what concepts and hypothesis are relevant for a given research area. Grounded theory has developed since 1967 as a variety of researchers in different disciplines have made use of it (Glaser, 1993 and 1994) and it has recently become more popular in the environmental disciplines. For example, Simonovic and Bender (1996) have made use of grounded theory in the production of a computerised participatory decision support system for planning purposes. In the field of landscape perceptions, Hunziker (1995) has used grounded theory to look at perceptions of land abandonment in Switzerland, and Paine (1997) and Kersten (1995) have used grounded theory when researching with farmers. There is also a growing interest in grounded theory within the geography discipline (Bailey, White and Pain, 1999; Baxter and Eyles, 1999).

The emphasis within grounded theory lies on theory as process, i.e. something which evolves and develops rather than a perfect end product. The approach is iterative rather than linear, involving an open form of enquiry where the methods and means of collecting data are flexible. Different data are recognised as providing different perspectives. For example, different contexts and a variety of sources (e.g. texts, interviews, paintings, stories, videos) may be used to provide information. It is not intended in this method to produce results which may be reproduced identically by another researcher or which are necessarily generally applicable. Rather, the approach acknowledges that the 'findings' are applicable to that particular situation and that particular researchers perspective. This is consistent with Checkland's (1981) concept of a 'human activity system' where he points out that there will "never be a single (testable) account of a human activity system, only a set of possible accounts all valid according to particular Weltanschauungen [worldviews]". Because the data is grounded in a particular area and relationships have emerged from the data, there is a closeness of fit between the theory and the data which should result in theory that is highly relevant and hence useful to the research area. There is no correct and final theory as theory can be continuously reformulated according to changing circumstances.

However, exactly how grounded theory should be conducted is a matter of fierce debate, particularly between its founders. The debate is such that some researchers now suggest you should state the type of grounded theory approach you are using (see for example, Paine, 1997). For this study the approach taken was one more consistent with a Glaserian view (Glaser, 1993 and 1994), whereby the constant

comparison is seen as the basis of qualitative theory building and as far as possible the data are allowed to tell their own story. The application of the core ideas of grounded theory are viewed as the basis for analysis, rather than any kind of rigid procedure, although the use of computer aided analysis does bring with it the tendency to formalise procedures (full details are set out in Oreszczyn, 1999).

Although the grounded theory process places importance on theories being grounded in the data collected rather than verifying pre-existing theories, existing theories are not necessarily ignored. Within this research the academic literature was drawn on for the theoretical framework and as the research was designed to be participative, the academic literature was itself treated as data and formed part of the expert category. In this way the expert perspective was treated as equal to that of the farmers and members of the public.

3.2 Data Collection and Analysis

Qualitative data was gathered for the different perspectives through 45 interviews using self-recorded tapes and/or face to face questionnaires with three broad categories: farmers, members of the public and professionals or experts. The farmer category had a wide range of holdings from large arable farms to small stock farms. Both farmers with and without an interest in wildlife conservation were interviewed. The expert category consisted of local wildlife professionals and advisers to farmers. Their common attribute was that they were all engaged in working with hedgerows in a professional capacity, e.g. as an ecologist or agricultural adviser or wildlife conservationist. A wider public questionnaire survey of 70 respondents and a discussion group were conducted. Secondary data was also used, such as the responses to the Hedgerow Regulations consultation document, the House of Commons Select Committee evidence and views expounded in the media and the academic literature.

The English counties of Buckinghamshire and Cambridgeshire were chosen as two areas with different landscape character, but similar in that the actual locations were close to medium-sized regional towns. The discussion group was carried out in the county of Norfolk and a further small Canadian study was also conducted near Vancouver.

The questions used were open-ended and covered many aspects of hedgerows so as to get a rounded picture of the interviewees' views. It was never the aim to gain large samples, which could be statistically, analysed, but to explore in-depth the views of a range of members of each category in conjunction with the secondary sources of data.

The data was analysed using QSR NUD*IST (1997) which is a computer software program specifically designed for analysing this type of qualitative data. Trying to deal with large amounts of unstructured data is not easy. In this respect NUD*IST was found to be invaluable, providing a framework for structuring the data and producing a trail of evidence for my interpretations. The powerful searching facilities within NUD*IST allow categories (concepts or themes) and relationships to be identified from which the researcher generates and builds theories.

Both a wider group perspective and an in-depth perspective were presented for each of the public, farmers, and expert categories. These were then drawn together to explore where each of these categories were drawing their boundaries. The commonalties and differences between these boundaries were then identified.

4. Findings

The data set from this research is extensive and is reported in full in my Ph.D. thesis (Oreszczyn, 1999). The findings have also been documented in two papers (Oreszczyn and Lane, 1999a and b). This section therefore only briefly outlines the main findings using quotations from the data to illustrate them. The references after the quotes refer to their location within the NUD*IST database.

4.1 People's Relationships with Hedgerows

Unlike media portrayals of differences between groups, people were found to have many views in common. Hedgerows were frequently described by all respondents with great emotion. While farmers' views of hedgerows were coloured by their need to run their farm as a business, and experts' views by their need to be professional, the way they felt about hedgerows in their landscape context was very much the same as members of the public. Table 2 lists some of the ways in which people mentioned that hedgerows contributed to the landscape.

(Insert Table 2 here)

All three categories demonstrated a strong sense of pride in the English hedged landscape and were found to have a strong sense of the character of their local landscapes. Hedgerows contributed to people's sense of place and were felt to represent the 'Englishness' of the landscape. They valued them for providing signs of the changing seasons; for the way they break up the countryside (providing diversity, perspective and a 'patchwork' pattern); for their sense of mystery, intimacy and connections with the past:

> One hedge appeals as it has every type of leaf you can have in autumn, it's in a bit of a hollow and it's a long hedge, and when the sun shines on it, it has greens, yellows, rusts and reds, all on that hedgerow, and its beautiful. [BFSI3: 201-204]

> They are a direct link with our history. I guess they give a sense of history or humanity as part of the landscape itself. [BPSI5: 26-29]

Hedge-less landscapes were frequently described as barren, uninteresting, naked, drab, dreary or boring. Hedgerows were also found to have a special place in people's memories. People felt nostalgic about hedgerows that were remembered in connection with childhood picnics and walks, and as places where they had made dens and played games.

For the public and farmers, important landscapes meant places special to them. Important hedgerows were those which formed part of the views from their home or farm, or when travelling or walking. Those close to homes were particularly

highly valued, as were garden hedgerows. A hedge did not necessarily need to be of ecological or historical significance in order for it to be important (Oreszczyn and Lane, 1999b).

> Q: What do you consider to be an important hedge?
> A: The bottom of someone's garden where it looks quite decorative, especially if variegated. An ideal home for wildlife and animals such as hedgehogs and frogs, which are in my garden. [BPSI2: 27-28]

These findings illustrate the commonality in the emotional, subjective, and cultural relationships that people have with hedgerows. However, people were generally found to have more than one relationship with hedgerows, particularly individuals who worked with hedgerows in a professional capacity, such as advisors and farmers. It was found within the data that people often spoke from both a personal or emotional and a professional or rational point of view. It is important to point out here, however, that this should not be viewed as a duality. Both the emotional and rational, the personal and professional were present in people's relationships. Even for people speaking mainly from a rational perspective, the emotional or personal underlay their view. The differences depended on which perspective was allowed to be dominant.

Although the expert view had many aspects in common with the perspectives of the other categories, they tended to separate out the different aspects of their relationship with hedgerows. Experts have their own definitions of what they consider to be important hedgerows. This category considered hedgerows mainly as countryside features, with urban hedgerows receiving little attention. Although the ordinary was recognised by the experts, it was what they considered the special that was felt to be most important and thus worthy of protection. The idea of 'key' or 'ideal' hedgerows in terms of wildlife conservation was common among this category.

While the ecological aspects of hedgerows dominated the experts' relationship with hedgerows, farmers placed emphasis on their need to run a successful business. In contrast, the public placed emphasis on the general value of hedgerows to the countryside, landscape and its wildlife and emphasised landscape in terms of experiences. The images they depicted were part of a description of their connection with the countryside and, particularly for those living in an urban environment, their gardens.

4.2 People's Relationships with Each Other

The importance of the different aspects of people's relationships with hedgerows is particularly demonstrated by issues concerning the type of hedgerow management. Farmers are the owners and managers of hedgerows. For a hedge to remain a hedge it is considered by experts to require management. There are several different ways of managing hedgerows. Traditional methods include coppicing or laying, however, most hedgerows are trimmed mechanically (Barr, Britt and Sparks, 1995). Farmers were found to be particularly concerned about how other farmers may perceive the way they looked after their farms. For farmers, trimmed, tidy, neat hedgerows were a sign of care. However, for members of the public and expert category who had a

preference for taller, bushy or 'wilder' hedgerows, such hedgerows were a sign that the farmers did not care (Oreszczyn and Lane, 1999a). Therefore, repeated trimming was a subject that evoked strong feelings among all categories. While farmers preferred annual trimming, experts and the public preferred infrequent trimming. Table 3 lists some of the likes and dislikes that people had concerning hedgerows.

(Insert Table 3 here)

People did not have a common or shared language and did not therefore necessarily trust what others said. Both the public and farmers were found to be unfamiliar with the expert view of hedgerows and had only a vague idea of how they were perceived by experts. For example, wildlife corridors and biodiversity were not something the public and farmers generally considered or recognised unless they had contact with experts. There were also differences between categories concerning the term hedgerow and the term 'loss'. What experts considered to be lost or worthless hedgerows could be considered by the public as an attractive landscape feature. Further, farmers did not necessarily trust the advice they were given.

Trust was found to be an important category throughout the data. The public did not necessarily trust farmers to manage a common landscape; experts did not trust farmers to manage hedgerows appropriately; and both farmers and the public did not trust the 'experts', particularly the policy makers. However, much understanding was also found between the categories. While the media and some 'experts' frequently portray the public and farmers as holding conflicting views, the evidence from this research suggests that open conflict is actually quite rare and that people have much in common. However people from different categories were also found to have little opportunity for contact with each other which could result in misunderstandings:

> But as far as towns people are concerned, I never really get involved in the conversations to know what they think. You know, we move mostly in the farming circles and cows are my interest, I suppose they are my main interest. [BFSI4:453-437]

4.3 Cultural Influences

The importance of the subjective or cultural aspects of the hedged landscape become particularly apparent when considering hedgerows in a different cultural context (see Oreszczyn, 1999). For example, it was evident from the Canadian study that the way that farmers in England are being encouraged to manage and conserve hedgerows would not work in the area studied in Canada, where the cultural feelings for hedgerows were not present in the same way. Not only is the importance of these cultural aspects evident from the approaches taken to hedge management today, but they also have implications for the way in which we manage hedgerows for the future. For example, this aspect of the research suggests that the contribution to sense of place felt by English farmers may not be felt by absentee landlords or by farm management companies who may have little contact with the farm and its surrounding landscape. Further, absentee landlords from a

different country and hence culture may not possess the same feelings of duty, responsibility and heritage.

5. Conclusions

Any system for managing hedgerows is dependent on the relationships within it and this research has drawn out these aspects. A recurring theme has been the overemphasis on the rational and objective rather than the emotional and subjective aspects of landscape and people's relationship with it.

Hedgerows are, for many people, a key component of the English landscape. They are part of our English culture, our history, our national identity and sense of place. They are not simply a means for conserving biodiversity in the landscape. People feel hedgerows are important not just for their 'hard' readily measurable objective values, such as number of bird species, but also for their 'soft' subjective, values, such as colours, patterns and scents. For hedgerows in England, concentrating on the conservation of the natural heritage rather than the cultural heritage, focussing on the special hedgerows with the exclusion of the 'ordinary' and focussing on that which can be measured objectively, has meant that the richness and complexity of relationships between people and hedgerows is not being addressed within current hedgerow research, policy and protection.

The subjective and emotional part of people's relationships with hedgerows affects not only the way they are managed, and hence the type of hedged landscape further generations will inherit, but also the relationships that people have with each other. The importance of this aspect of people's relationship was evident in the data across all categories. However, for many of the expert category this subjectivity appears difficult to grapple with.

While planning and decision making processes concerning landscapes remain top-down and the domain of professionals, key stakeholders will remain excluded. Both the public and the farmers within this research were found to lack a sense of ownership over the process of change. Lay people in rural and urban communities have little say in current landscape management practices, yet they may be considered as key stakeholders in the current debates about hedgerow management practices which are determining our cultural landscapes for the future. The advantage of taking a systems approach is that they are necessarily participatory in character.

In common with other systems approaches (for example, McClintock, 1996), this research has not been about how to try and change people's understandings but about the need to create space for new or different understandings to emerge. It demonstrated one way of bringing together different group's views within the research process. The research findings have particularly drawn out the way that different groups of people have little opportunity to exchange perspectives. While many different ways of participation and creating space for open dialogue exist (see Countryside Commission, 1998) within the current top-down decision making structure for hedgerows in England there is no appropriate space for people to share views.

If landscape is to be considered in a holistic way, as many suggest, both the objective and subjective perspectives need to be included and in such a way as to be considered of equal importance. Considering both the readily measured and the subjective aspects of landscapes, the rational and the emotional relationships, offers opportunities to examine the different boundaries to people's systems of interest. This helps to include and accommodate complex human factors.

Acknowledgements

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Table 1: The characteristics of hard and soft systems traditions. (Adapted from Ison, 1993).

HARD SYSTEMS TRADITION	*SOFT SYSTEMS TRADITION*
Seeks efficient achievement of goals or objectives.	Goal seeking seen as an inadequate explanation for much of what goes on in human affairs.
Takes goal-seeking to be an adequate model of human behaviour.	Does not assume that the complexity of the world can be captured in systemic models.
Assumes world contains systems which can be engineered and modelled.	Regards systems models produced within the hard tradition not as models of "X" but as models of the logic of "X".
Talks the language of problems and solutions.	Views system models as models relevant to arguing about the world, rather than models of the world, leading to learning, replacing and optimising.
	Talks the language of "issues" and "accommodations" rather than "solutions".

Table 2: Ways in which people say they feel hedgerows contribute to the landscape

Add variation and interest, especially to plain flat and featureless landscapes
Provide structure and diversity.
Add visual continuity.
Give shape and enhance views.
Provide links between features.
Give perspective to the landscape.
Provide feelings of intimacy.
Provide feelings of seclusion.
Provide colour, definition and pattern.
Irregular patterns give an area familiarity.
Add height and perspective, especially in a flat landscape.
Offer refuge and food for wildlife.
A sign of a 'healthy' landscape.
Soften landscapes.
Provide a sense of the unexpected.
Provide a boundary to vision and expectation
Represent Englishess.
Are markers in the landscape.
Provide links with the past.
Enhance and add beauty to the landscape.
Provide 'roads' of wilderness.
Are part of our heritage.

Table 3:Some of the things people said they like and dislike about hedgerows (from the taped interview data)

Likes	Dislikes
Mature trees	Heavy trimming
Flowers	Ragged hedges
Insects	Neglected hedges
Butterflies	Litter beneath hedges
Mammals, large and small	Little, thin, low cut hedges
Birds	Thorns
Bird song	Nettles
Birds darting in and out	Coniferous hedges
Scents	Straight, uniform hedges
The smell of blossom in the spring	Untidy hedges
Seasonal changes	Blocked views
Lots of different colours	Very tall hedges
Sun shinning on the colours	Hedgeless, exposed, bleak, barren
Different seasonal colours	landscapes
Watching seasonal changes	Exposure
Autumn berries	
Blackberries	
Elder flowers	
Elder berries	
Big and bushy hedgerows	
Tall hedgerows	
Thick 'healthy' looking hedgerows	
Shelter from the wind	
Traditional management ditches	
Banks	
Long hedges	
Hedge bottoms	
Hedge laying	
Old hedges - sense of history	
Roadside hedges	
Naturalness	
Field patterns	
Predominantly native species	
Diversity of management practices/wildlife habitats	
Picnics alongside hedges	
Blackberry picking	

Biography

Sue Oreszczyn is a researcher in the Centre for Complexity and Change at the Open University, having just completed a PhD entitled 'Participative Approaches to

Hedgerow Conservation'. Prior to this she graduated from University College, London with a degree in geography and was involved in developing assessment criteria for urban wildlife corridors with Milton Keynes Parks Trust and the Open University.