

## Learning for communication about climate change in the context of farming using Vickers' concept of an appreciative system

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**Abstract:** *Communication about issues of climate change in the context of farming takes different forms and serves various purposes. Projects, programmes, conferences and workshops all involve different aspects of communication. But how do they communicate with each other so that different learning processes can be built on? To what extent does communication at different levels serve present-day and future needs? Some forty years ago Sir Geoffrey Vickers developed the concept of an 'appreciative system' to help understand the part that human communication plays in the regulation of human societies. This paper presents and extends Vickers' model, drawing on the author's research. It considers what kinds of communication lead to social learning and purposeful action and what might help to challenge and change some existing practices and behaviours related to farming.*

**Keywords:** *communication, climate change, farming, learning system, appreciation, Geoffrey Vickers.*

### Contexts of UK farming, food, land use and climate change

There is now widespread agreement among scientists that many of our practices regarding natural resource use and wastes are contributing to increased global atmospheric concentrations of greenhouse gases (such as carbon dioxide, methane and nitrous oxide) with resultant global warming (IPCC, 2007). The contribution that UK farming and the wider UK food chain (production, processing and retail) make to greenhouse gas emissions is well recognised (Porritt, 2007; Garnett, 2008; Audsley et al., 2010). At farm level: livestock production; fertiliser use; use of energy coming from non-renewable sources in farm operations; and poor management of wastes (such as slurry); are identified as some of the main contributors (DEFRA, 2010). At other levels transportation and food waste account for further emissions and choice of technologies has a role to play. Taking into account emissions relating to the UK food chain that occur outside the UK, agriculture is also seen as one of the main drivers of land use change such as deforestation that results in yet more emissions (Audsley et al., 2010).

There are several other perspectives on this situation that need to be taken into account. Many farmers are already experiencing climate change and responding to those experiences. Higher average temperatures, extreme weather events, wetter winters and summer droughts are among the effects felt though these effects vary with geographical location (Farming Futures, 2010a). These effects are experienced as *problems*. For instance there were weather-related losses of wheat in several parts of the world in 2006 and 2007 that led to uncertainty in 2008, that in turn contributed with other factors to agricultural 'price-spikes'. These spikes were seen as responsible for 'pushing a further 200 million people worldwide into hunger' (UK Government 2008). The effects are also experienced as *opportunities*: for instance for production and use of renewable energy, (including production of energy crops and biogas); changes in water, soil and nutrient management practices; and development of new technologies such as 'smarter' machines including those used in precision farming (Farming Futures, 2010b; Blackmore et al., 2009). This list of activities is indicative of farming and researching communities that are rising to the challenge of reducing emissions.

However, both the scale of current emissions and the reductions required suggest that a lot more needs to be done. According to Audsley et al. (2010) no single measure will bring about the reductions in

emissions that are needed. "If the UK food chain is to make a proportionate contribution to the UK's target of reducing its overall emissions by 80% by 2050, then policy makers will need to put in place a combination of measures that change not only how we produce and consume food, but also what it is we consume." (ibid, p. 2) There is widespread agreement that changes in lifestyle, behaviour patterns and management practices can contribute to climate change mitigation across all sectors including those related to food (IPCC, 2008; Halpern et al., 2004; DEFRA, 2010).

## **Reviewing discourse concerning what, who and how**

In most of the references cited so far a lot has been written about what is contributing to emissions, what actions are needed to reduce them and by whom. It is clear that a range of different systems of interest are perceived which involve different people and activities. The activities of UK-based farming have been estimated to contribute around 7% to the UK's total greenhouse gas emissions (Porritt, 2007), whereas those related to UK-based farming and food (including production, processing and retail) have been estimated at 19% (Garnett, 2008) and even more if indirect emissions attributed to land use change, such as deforestation, are included (Audsley et al., 2009). The UK's food 'footprint' extends well beyond its geographical area.

In the literature reviewed for this paper, there are many analyses, scenarios, scientific and technical details and calls for change, mainly from advisers and researchers. There are also case studies that recount the experiences and insights of individuals who have taken up some of the opportunities of new ways of working to address issues of climate change, (e.g. Farming Futures, 2010c). Actors in the various systems of interest associated with farming and food include farmers, government, consumers, retailers and a range of local and regional bodies (DEFRA, 2010). It is apparent that many projects, workshops, seminars and other events are taking place or are planned. Learning appears to be ongoing in a range of situations of uncertainty and change that are being experienced. It is less apparent how these various processes of inquiry, action and interaction relate to one another.

Climate change is one of several agendas in relation to farming, food and land use. Issues of food security, rural communities and livelihoods are examples of other related agendas. In parallel to the United Nations Climate Change conference in Copenhagen in December 2009, a day of deliberations about Agriculture and Rural Development took place. One outcome was a joint statement from farming and forestry communities that called for these related agendas to be addressed in an integrated manner (ARDD, 2009a). There is recognition of the need for multi-stakeholder involvement in bringing about change towards more sustainable and just practices in relation to farming and food. Interconnections among choices and actions by different groups are also acknowledged (Benn, 2010; DEFRA, 2010). But there is little detail available about how the many stakeholders involved in farming and food-related activities bring together, or could bring together, their processes of inquiry, action and interaction. In keeping with the way that farming and forestry communities issued their joint statement of commitment and a call for an integrated approach at the Copenhagen event, some convergence of ideas and practices that also values the diversity of actors, processes and issues associated with climate change and related agenda in the wider world appears to be desirable. Actions to address these agenda need to be coherent and mutually reinforcing at a range of different levels (ARDD, 2009b).

Judgements about whether this convergence is already taking place and if so where and how, undoubtedly vary with perspective. For instance there was a contrast between perspectives aired at the Oxford Farming conference and the rival Oxford Real Farming conference that ran concurrently in January 2010. The former event is something of an institution, a mainstream event in the farming world that has taken place regularly for some sixty years. The broad agenda of this event focused this time on issues such as finance, policy, science, environment, food safety, retirement and the next generation of farmers. The latter event was what its organisers called a fringe event that ran for the first time in 2010.

It was highly critical of the agenda of the other conference and the principal of maximising financial returns from farming and advocated radical re-organisation of farming in order to “feed people without wrecking the rest of the world”. Yet the speech of the Environment Minister Hilary Benn (Benn 2010) at the mainstream event made some similar points to those made at the latter and other speakers also addressed issues of sustainability. (I attended neither event so can only comment on the basis of reading what has been written about both events.)

My review of some of the discourse associated with UK-based farming, food and climate change has been limited but sufficient to generate the following questions of relevance to this IFSA workshop:

- 1 To what extent has the UK farming community engaged with issues of climate change and begun to take actions to address them? Related to this question - are the ‘heroes’ and ‘villains’ (referred to in the workshop call) different people, different perceptions or both?
- 2 How have various processes of inquiry, action and interaction relating to learning associated with issues of climate change in the context of farming and food affected each other, if at all?
- 3 How might these past processes of inquiry inform future processes?

In order to address these questions I now consider a model of an ‘appreciative system’ based on the work of Sir Geoffrey Vickers which I have previously found useful for analysing and interpreting communication and learning in contexts of environmental decision making (EDM) - where people have included environmental considerations alongside others in decision making (Blackmore, 2004, 2005, 2006, 2009). In the final section of the paper I consider what the model might help to illuminate about the above questions.

### **Vickers, communication and the appreciative system**

Some forty years ago Sir Geoffrey Vickers when commenting on the limits of government described himself as “...not a political scientist; only a student of communication, and, in particular, of the part which human communication plays in the regulation of human societies.” For Vickers, what changes when we communicate with each other, and how, was a major focus in developing his concept of an “appreciative system” which makes some potentially useful distinctions for considering what kinds of communication do and do not lead to purposeful action.

Vickers became, from the 1960s, a scholar and writer following a long and distinguished career in public service as a soldier, solicitor, and legal adviser to the UK National Coal Board, Chair or Board member of various public bodies and as a volunteer in medical research. In seeking to make sense of his experiences he made a major contribution to learning systems theories. Vickers concept of an appreciative system used the term appreciation as in ‘appreciating a situation’ to mean a combined judgment of facts and values and identification of an interdependence between the two. He described appreciation as a dynamic and systemic process and described what he called an appreciative system:

‘... because the word appreciation, as we use it when we speak of appreciating a situation, seems to me to carry with it those linked connotations of interest, discrimination and valuation which we bring to the exercise of judgment and which tacitly determine what we shall notice, how we shall discriminate situations from the general confusion of ongoing events and how we shall regard them. I conceive it as consisting largely of categories for classifying and criteria for valuing experience.....I call it a system because these categories and criteria are mutually related; a change in one is likely to affect others. The actual state of this system at any one time I will call its current setting. And I shall use these terms both for individuals and for the common settings which distinguish and give coherence to groups, societies and cultures.’ (Vickers, 1987, pp. 98-9)

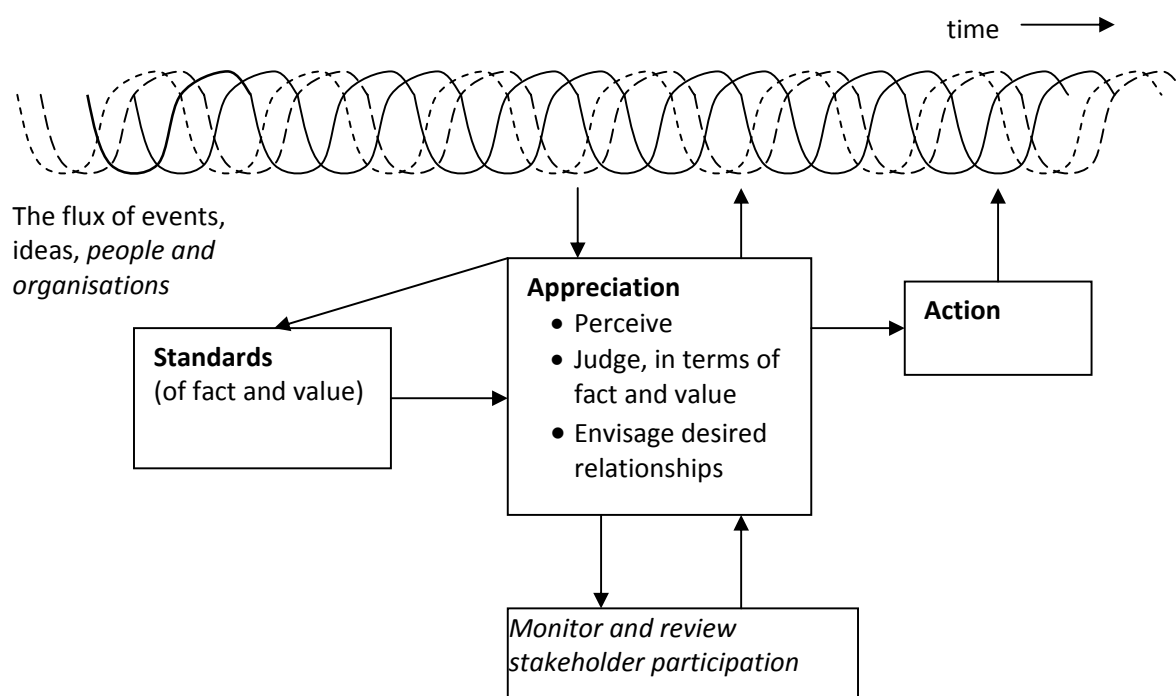
‘This [appreciative] setting cannot be observed; it can only be inferred after the event and it changes with the events which reveal it. To take a very simple example – the meaning for me of a communication which I am about to receive will depend in part on whether I believe it; but my belief in it will depend in part on the impact which it makes on me when I hear it. So the appreciative system with which I await it may be radically reset by the activity of responding to it. Thus the setting of the appreciative system, personal and collective, is more uniquely self-determined by the cyclical process already noticed and thus more 'historical' than any other phenomenon which we need to understand.’ (Vickers, 1970, p. 207)

In this quote Vickers draws out not just what he means by appreciation but also what he means by a system, referring to the way in which elements in the system being considered are mutually related and how he distinguishes this system from its context. (This I find useful as my experience is that the meaning of ‘systems’ is often assumed rather than made explicit as Vickers does here.)

The concept of an appreciative system offers a powerful way of understanding the dynamics of learning processes while considering a situation as a system. The dynamic nature of learning is notoriously elusive to capture, as evident in theories of learning which try to look at cause and effect (Blackmore, 2007). Vickers’ deliberations of now some fifty years ago have been continued by many. For instance Shaw (2002, p.171) puts at the core of her book the question ‘How do we participate in the way things change over time?’ meaning ‘How at the very moment of our joint sense-making experience, are we changing ourselves and our situation?’ Vickers (1965), Schutz (1967) and Checkland (1999) all focus on ‘a rich concept of day-to-day experienced life’ or the ‘Lebenswelt’ when trying to make sense of how individual processes work together in the dynamics of learning and being.

The model depicted in Fig. 1 (below) of an appreciative system is my own modification of one prepared by Checkland and Casar (1986), that drew on Vickers’ insights. The original model showed that processes of appreciation (perceiving, judging and envisaging desired relationships) are informed by the Lebenswelt (day-to-day experienced life) as a flux of interacting events and ideas; standards are developed iteratively alongside; and results of these processes, whether or not they lead to action, contribute to the flux. Following my use of the model in research concerning a range of practitioners’ learning associated with environmental decision making (Blackmore, 2009), I have extended the original model to make the flux of people and organisations explicit in addition to the flux events and ideas, and have added an activity of monitoring and reviewing stakeholder participation in the process of appreciation. (My modifications to the original model are in italics and dotted lines in Fig.1.)

The additions are intended to encourage recognition of the dynamics of people joining and leaving processes of appreciation when this model is used in EDM situations. In the EDM situations described and analysed in my research the flux of people moving on from one situation to another, or not, was significant to learning and action associated with EDM and in several cases explained whether the environment came into focus or not in a situation



**Figure 1** The structure of an appreciative system, recognising that people join and leave processes of appreciation and a need to monitor and review stakeholder participation

Note: my additions are in italics and the dotted lines, which denote people and organisations

Source: Blackmore, 2009, adapted from Checkland and Casar 1986 and Checkland, 1994

Initially in my research, this model was used as a way of thinking about the inquiries and the research process (see also Blackmore, 2005). The model was later used in narrative and discourse analysis to help distinguish appreciative processes, standards, actions, events and ideas and to understand how they were related. This model provided a way of explicating the changes and distinctions referred to by interviewees in the research without assuming immediate outcomes of appreciative processes in terms of actions.

This view of learning systems helps to reveal the importance of different ways of knowing, and times of not knowing, as well as more tangible knowledge, all important to overall processes of learning and change. Changes in what Vickers called ‘appreciative settings’ can be inferred. He equated these with our ‘readinesses of the mind to see, value and respond’ (Vickers, 1970, p. 59). These ideas are also consistent with Maturana’s observation (Poerksen and Maturana, 2006 p.28) that we cannot distinguish between perception and illusion at a particular moment in time. As discussed by one interviewee in my research – in the context of verifying and validating greenhouse gas emissions – the extent to which CO<sub>2</sub> emissions affect climate change, and to what extent we can tell this is so, is just one example of a context for environmental decision making renowned for difficulties in distinguishing between perceptions and illusions. It is relevant at this point to note that not just individuals but groups and societies are not always able to distinguish the precise character of situations from the general confusion of events. We appear to need to know more than that ‘something is happening’ in order to be able to respond. This insight suggests that when designing incentives for action-oriented environmental decision making we might take more account of the possibility that our appreciative settings might need to change.

Vickers (1970) once suggested that our inability to rise to some of humankind’s most important challenges was because “...The last two hundred years have left us with an appreciative system

particularly ill-suited to our needs". He considered in some detail how we might 're-set' our appreciative systems.

The main questions emerging from Vickers' work for this paper are

- How might we develop an appreciative system that meets both present day and future needs regarding our collective response to climate change?
- How might we re-set our appreciative systems?

In the next section I return to these questions and those of the last section. I also consider how a lens of appreciative systems might help us to re-frame our communication in relation to climate change, in the contexts of farming and food described at the start of this paper.

### Appreciating communication about climate change

The discourses and practices of farming and food-related activities in relation to issues of climate change concern a lot more than communication. However communication is at the core of processes of interaction and essential to development of our knowledge and understanding. As Vickers saw it, '...the appreciated world mediates our communication, as well as guides our actions' (Vickers, 1972). Many other authors have also focused on communication in the context of learning associated with sustainability (e.g. Bawden, 1999; Ison, 2005; Blackmore, 2010).

The questions that emerged from the first section of this paper all include elements of communication. So how can the appreciative systems model help to illuminate these questions? Many different elements of a flux (of events, ideas, people and organisations), appreciation, standards and actions can be identified in the contexts described at the start of this paper. Details of monitoring of stakeholder participation in the processes of appreciation were not apparent.

Table 1 includes examples of these elements.

**Table 1.** Elements of appreciative systems with examples from farming and climate change.

Elements of appreciative systems	Examples
The flux of events, ideas, people and organisations	IPCC, floods, droughts, Farming Futures workshops, Oxford Farming conference, Oxford Real Farming conference, COP15, ARDDay; inputs and outputs to conferences, workshops etc; Government. NGOs, researchers, public, international agencies.
Appreciation <sup>1</sup>	Deliberating and deciding in Round tables, meetings etc.
Standards	Agreed reductions in GHG emissions; ISO standards (various); Food 2030 strategy
Actions	Renewable energy initiatives; precision farming; reductions of fertilisers; reduction of food waste

Drawing out elements of appreciative systems is just a starting point in the use of this model. I have also used it to map the various elements in relation to each other in specific situations e.g. in appreciating local and regional Government decision making at time of floods (Blackmore, 2009). The ideas have yet to be fully developed into guidelines for practice but some preliminary practical considerations are indicated in Table 2 in the form of some examples of 'what' can be done by 'who' and 'how'.

<sup>1</sup> Processes of perceiving, judging, and envisaging desired relationships appear to have taken place in these processes

**Table 2.** Some practical considerations in using the appreciative systems model.

Dimension	Examples
What ?	<p><b>Flux:</b> mapping of events, ideas, people and organisations on a timeline.</p> <p><b>Processes of appreciation:</b> iterative identification of processes of deciding, deliberating, planning, writing, reflection during events, reflection after events.</p> <p><b>Standards:</b> both emerging from and driving processes of appreciation; formal (e.g. policy, legislation and skills) and informal (e.g. realistic expectations)</p> <p><b>Actions:</b> emerging from processes of appreciation at a range of levels, including co-ordination of actions across levels.</p> <p><b>Monitoring and review of stakeholder participation:</b> keeping track of who participates in what; periodic and iterative stakeholder analysis, developing strategy for involving stakeholders and inviting participants</p>
Who?	Individual and group perspectives can be represented with the model, as snapshots at particular times and/or iteratively as part of an ongoing process
How?	<p>Facilitation in use of the models is advisable e.g.:</p> <ul style="list-style-type: none"> <li>• semi-structured interviews can be used to draw out different dimensions of an appreciative system</li> <li>• perspectives can be represented separately and then compared in a facilitated group process</li> <li>• with the help of a facilitator a group can map their relevant 'flux' and identify and agree other elements together,</li> </ul> <p>The model can be used as a 'learning object' to negotiate and develop understanding of the elements of an appreciative system and how they are related.</p>

In terms of the extent to which the UK farming community has engaged with issues of climate change and begun to take action to address them, there is certainly evidence from many different sources that this is happening but more in-depth review would be needed to understand the communities concerned and the nature of their engagement with the issues, including the existing and envisaged relationships with one another. It is not easy to tell from the review of activities that has been undertaken just how elements such as those above work together. Checkland and Casar (1986) and Checkland (1994) modelled several cycles of a learning process in one project they considered, where each cycle drew from and fed back into the flux of events and ideas and where the standards agreed in one cycle also informed the next. There is certainly an identifiable flux of ideas, events, people and organisations in evidence in the UK farming community that is engaging with issues of climate change, along with processes of appreciation, some of which lead to actions and others do not. (There are of course different perspectives on this flux and these processes.) There is also continuity in development of standards that inform later processes, for instance in the agreement of targets for reducing greenhouse gas emissions. But the way in which the appreciative processes of say the Oxford Farming conference and the Oxford Real Farming conference have informed each other is less clear. The standards developed by each are clearly quite different, perhaps representing discontinuity rather than continuity of process. I suggest that it would be appropriate to consider them both as inquiries that have drawn from and contributed to a flux of ideas, events, people and organisations but not as processes that directly inform each other. The two groups clearly hold different worldviews that need to be revealed if each group is to contribute to development of more sustainable agricultural policies. Use of the appreciative system model (taking account of some of the suggestions for how it can be used that are listed in Table 2 might be one way of engaging two groups such as these, along with others, in a dialogue about desirable, feasible and ethical changes.

In looking to the future, the model of an appreciative system included as Figure 1 could also help to guide a further inquiry into the dynamics of learning and communication associated with climate change and farming at different levels - ranging from projects to communities, to regional, national and international levels. I propose that through developing, comparing and combining different representations of appreciative systems, continuities and discontinuities in communicating about climate change could be further investigated, as could the ways in which different sets of appreciative processes inform and do not inform each other. The process of addressing together, in a facilitated multi-level, multi-stakeholder process, questions such as *'What might an appreciative system look like that would*

meet both present day and future needs regarding our collective response to climate change?’ and ‘How we might re-set our appreciative systems?’ could, I believe, also help us to understand some of the issues under review in this workshop regarding how to discover alternative futures through reframing communication concerning climate change.

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