Research Brief 1

Overview and Main Results

From the ESRC's New Opportunities Research Programme on
ENVIRONMENT AND HUMAN BEHAVIOUR (EHB)

environment and human behaviour
esrc new opportunities programme

INTRODUCTION

A New Opportunities Programme is the Economic and Social Research Council (ESRC)'s mechanism for synthesising existing research, and/or engaging in preliminary research to set the agenda for future research investment. This Programme sought to increase understanding as to why people behave as they do towards the environment, how this behaviour may change as environmental change occurs, and what influence public policy might have on this process.

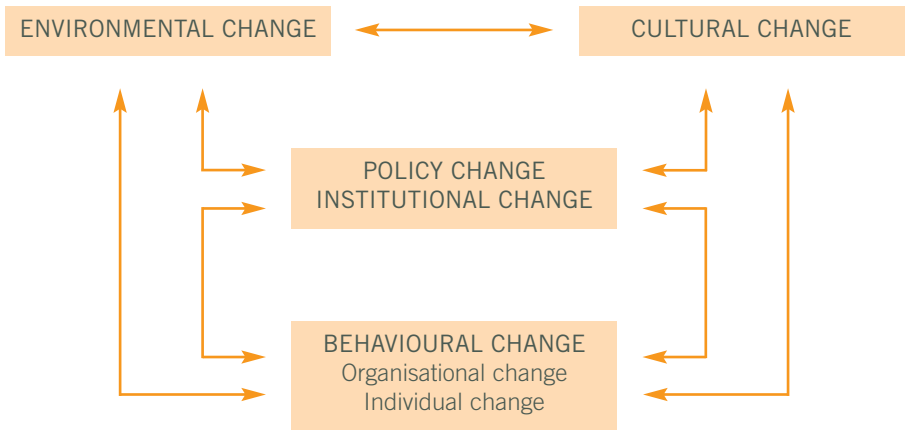
This is the first of six Research Briefs which have been produced to describe briefly the results and insights that have emerged from the Programme. The other five are entitled: Vulnerability and Environmental Change; Responses and Adaptation to Rapid Environmental Change; Environmental Perceptions, Values and Actions; Learning and Environmental Change; and Policy Insights on Environment and Behaviour. This Research Brief gives an overview of the conceptual framework that emerged from the Programme and the main results of the projects within it.

THEORETICAL AND CONCEPTUAL APPROACH

In a Programme workshop on the theoretical approaches being taken by the projects in the Programme, it became clear that the projects were not using a common theoretical approach and, indeed, that no general theory existed that could be used across the diversity of issues being addressed. However, in all cases it was seen to be necessary to try to understand the relationship and multiple feedbacks between core environmental variables, intervening contextual variables relating to culture, policy and institutions, and the influence of these on individual and collective behavioural change, as simply illustrated in Figure 1.

A wide range of factors needs to be considered if the complex relationships between the environment, environmental change and human behaviour are to be understood. A conceptual framework was developed which sets out what seem to be the main factors in the three realms that seem critical to the environment-human behaviour relationship: the individual realm, the context and situations in which individuals (and organisations) find themselves, and the natural environment, and environmental change, itself. The framework and these factors are shown in Figure 2 on p.03 of this Research Brief. The three realms obviously interact, and co-evolve, continuously. The underlying hypothesis on which the framework is based is that *individual and collective behaviour towards the environment, and changes in that behaviour, occur and are conditioned within specific contexts, are influenced by environmental factors and differ depending on the relative influence of, and interaction between, a range of behavioural factors.*

Figure 1: Simplified Schema of Influences on Behaviour



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Project Approaches and Key Messages

Figure 2 suggests that it is a combination of context, individual behavioural factors and environmental factors, acting through deliberation, emotions and rational choice, which influence human behaviour. If human behaviour towards the environment is to change, then changing the variables which influence this behaviour will be necessary. Because the various factors are inter-related, often in complex ways, and because different individuals live in different contexts and situations, a change in any one factor, or in any combination of factors, will not necessarily cause different individuals to change their behaviour in the same way. On the other hand it may be that changes in particular factors are critical in a wide range of situations, and for many individuals, if behavioural change is to take place. These were the underlying issues considered by the projects in the Programme (identified below by their title and the Research Brief (RB) in which they are discussed in more detail), but looking at very different areas and addressing different research questions.

The starting point for *Crises as Catalysts for Adaptation: Human Responses to Major Floods* (RB3) was environmental change, and the focus of analysis was how this led to policy change. The theoretical approaches used included those from the literature on policy streams and agenda setting, on policy advocacy coalitions and on 'punctuated equilibria'. *Rapid Climate Change in the UK: Towards an Institutional Theory of Adaptation* (RB3) was also concerned with rapid climate change, but its initial focus was on adaptation and how this was influenced by institutions, which it defined as 'the formal and informal rules that shape human behaviour'. It then sought to analyse institutional adaptation through the concept of social capital and in response to individual and organisational adaptation.

Predicting Thresholds of Social Behavioural Responses to Rapid Climate Change (RB3) focused on possible individual responses to rapid climate change, and the way this was influenced both by prior attitudes towards it, and by perceptions of the rapidity of climate change. There is some evidence of a threshold or response to climate change related to its perceived severity. *Exploring Vulnerability to Rapid Climate Change in Europe* (RB2) found that there were few studies of the implications of rapid climate change in Europe, and that expert estimates of its likelihood, while generally very low, differed over a wide range. The starting point of *Integrating Social Vulnerability into Research on Food Systems and Global Change* (RB2) was also vulnerability to environmental change, but this time of the food system. The analytical approach here was through comparison of the insights offered by four quite different literatures: ecosystem dynamics, ecological economics, vulnerability assessment and multi-agent modelling.

The core focus of *Natural Capital: Metaphor, Learning and Human Behaviour* (RB5) in terms of responses to environmental change, was learning, both in relation to the concepts employed (such as natural capital) and the meaning attached to them, where 'meaning' denoted a dynamic structure of ideas. The usual social behavioural sequence is that social action (defined as organised, meaningful behaviour based on a shared sense of meaning) tends to shape emerging realities according to this shared meaning, but at times of rapid or unusual change social learning was required to allow the emergent realities to shape, and create a new, shared sense of meaning.

Differences, and changes, in meaning, and therefore in perceptions or expectations, were important in many of the projects. In respect of *Future Comforts: Re-conditioning Urban Environments* (RB6) meanings and expectations of 'comfort' were shown to be the product of many social and institutional influences and interactions, which could be characterised as a socio-technical system or regime. Conventions of indoor environmental management in different societies and cultures depend on how such systems co-evolve. Attempts through policy to change comfort-related behaviour (such as efforts to reduce indoor temperature settings) need to recognise and take account of physiological, psychological, social, technological and institutional factors, and how they develop and interact in different environments.

Tilting at Windmills? The Attitude-Behaviour Gap in Renewable Energy Conflicts (RB6) found that meaning is also an important factor in the so-called 'attitude-behaviour gap' between stated public attitudes and particular individual and social responses to wind power projects. Wind power in the abstract as renewable energy is one thing. When it impinges locally, however, such issues as ownership and participation in decision-making, knowledge about the issues and trust in those purveying it, and specific local factors such as planning history and landscape quality, become an important filter through which the meaning of wind power can change from renewable energy to unwanted local development.

For the small businesses investigated in *UK Small Firms and their Response to Environmental Pressures* (RB6) the word environment is largely associated with extra regulations and additional cost. The idea central to the concept of ecological modernisation – that environmental performance can be improved to economic advantage rather than disadvantage – has clearly failed to penetrate the small-business community, which has therefore remained at best indifferent, and at worst hostile, to environmentally related behavioural change. While firms might not welcome a policy approach that relied more on regulation and fiscal measures, it is likely that it would be more environmentally effective than encouraging voluntary action.

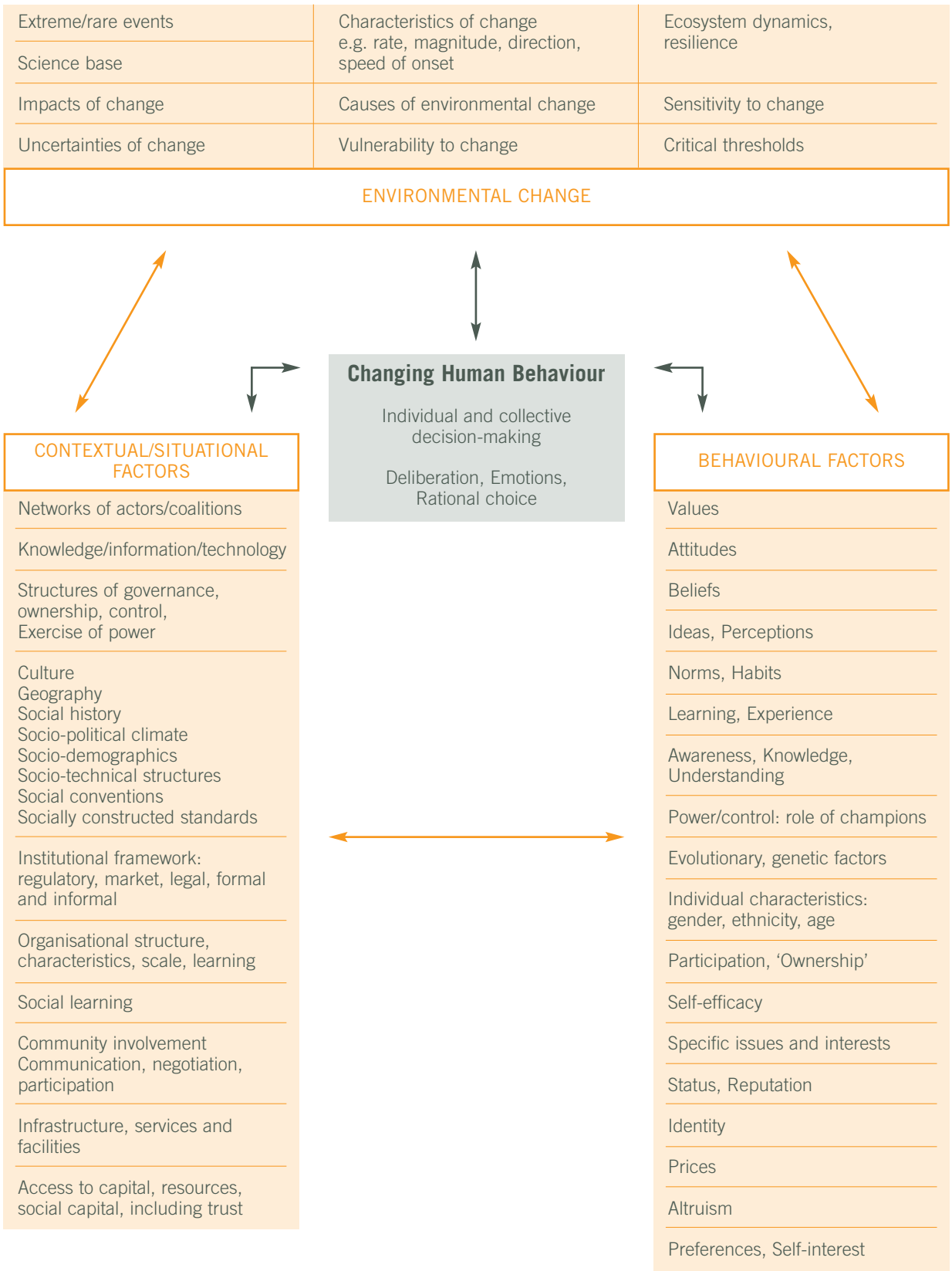
Fiscal instruments were the explicit focus of *Taxation Futures for Sustainable Mobility* (RB6), which found that a road transport taxation regime based on road user charging was probably more appropriate to current circumstances than the current system based on vehicle ownership and fuel duties. However, it would need to be clear in its objectives if it was not to have unwanted side effects, and in itself a switch to a new tax regime would do little to resolve the current tensions between road transport and environmental quality.

The projects on the Indian middle classes, *Middle Class Environmental Values in India: An Interdisciplinary Dialogue* (RB4), and on the Tuareg people of the Sahara, *Indigenous Peoples, Environmental Change and Tourism in Extreme Environments* (RB4), show how important are culture and values in shaping the meaning of the word 'environment' itself. *Environmental Issues and Human Behaviour in Low-Income Areas of the UK* (RB4) found that this is also the case for low-income communities in the UK. Here, as elsewhere, it is clear that environment and behaviour have a number of complex interactions. It is also as clear that environmental change can change behaviour, as that behavioural change can change the environment, but, as in all cases of complex interaction, it is far from easy to predict what

measures will lead to desired policy results.

It is also clear that the appraisal of policy-related environmental change may lead to changes in environmental policy. *Appraisal, Institutional Learning and Sustainability: Defining a New Agenda* (RB5) found that this again depends on learning, institutional learning in this case, which is likely to require some situation-dependent combination of technical and deliberative approaches to appraisal.

Figure 2: Environment and human behaviour conceptual framework



Source: adapted from Johnson, C. & Ekins, P. 2003 *Theoretical Approaches to Policy Change and Human Behaviour*, report of a workshop at Policy Studies Institute, London, www.psi.org.uk/ehb

AVENUES FOR FURTHER RESEARCH

Each of the projects in the EHB Programme generated its own agenda for future research in the area it was investigating. These agendas are summarised at the end of each of the relevant Research Briefs (RBs). Here, together with ideas from the Programme as a whole, they are drawn together into an overall research agenda for environment and human behaviour.

It is still an open question as to whether any amount of research will generate robust theoretical understandings and representations of all the interactions in Figure 2. Certainly a very great deal of research would be required to achieve this, and it would need to be carried out according to a structured programme that did not constrain the individual projects but that allowed their results to be related both to each other and to an underlying framework such as is portrayed in Figure 2. A coarse mapping of the factors and interactions onto the research projects was carried out in the Workshop Report[1] of the Second Programme Workshop in December 2003, but this was very much an ex post, unplanned exercise. It would be interesting to see whether a research programme that was conceived with this kind of framework in mind would be successful in yielding more systematic insights about the relationships between the factors than the EHB projects were able to do.

Even if the interactions between the factors of Figure 2 can never be completely disentangled and characterised, the framework remains useful for research and policy making as a checklist which can be applied to proposals as they are being developed, in terms of stimulating thought as to which factors should or should not be given detailed consideration, and why. This should make it less likely that important factors are excluded by the research or policy design and therefore make it more likely that they are taken appropriately taken into account.

All the projects in the Programme have shown a vital role for interdisciplinary research – combining social science and environmental (and especially climate) science disciplines. What was somewhat surprising was the paucity of work and understanding in respect of rapid climate change that the projects in this area revealed (see RBs 2 and 3). This is clearly a huge area for potential further research, which needs to go well beyond physical science research into the possible impacts of rapid climate change (though this is also necessary) to a full interdisciplinary exploration of how rapid climate change would be perceived and recognized as such, and how policy and publics would react to it and the new perceptions of vulnerability it would create. Practically all the factors in the framework of Figure 2 are likely to be relevant to such research.

Another important recurrent theme in the Programme was public perceptions of 'the environment' more generally (see especially RB4), including how the word itself is interpreted, how different environmental concerns relate to and can sometimes conflict with, each other, and how publics and public policy seek to handle the relationships and conflicts both between different environmental concerns and between environmental concerns and other areas of public concern. Again, this is a huge potential research theme, which could easily form the basis of another research programme by itself. As the two projects focused on India and Africa showed (see RB4), it will be desirable for such research to consider different parts of the world, when it might be expected to shed light on such diverse issues as security, inequality, political identity and geopolitics, as well as a whole range of issues in international development.

Then there is the broad theme of 'sustainable consumption'. Given that 'consumption' is so closely related to many environmental impacts, and 'sustainable consumption' is proving such a difficult area for effective policy intervention, it is not surprising that much of the policy interest in the Programme related to this theme and those projects most closely concerned with it (see RB6). There is clearly much more to be learned about this area. In particular, there is a need for far greater clarity on the relationship in environmental behaviour and decision-making between deliberation, emotions and rational individual choice. Different researchers, and to some extent different disciplines, tend to emphasise one or other of these inputs into decision-making, either generally or in respect of particular issues, but the results from the Programme suggest that in almost all circumstances all these inputs play some role in decision-making. The interesting research issue is whether it is possible to disentangle the different roles in different situations, and whether some roles are more important in some situations than in others.

Another theme that threaded through many projects, and was dominant in some, was that of learning, especially social learning. Learning is obviously important for both effective mitigation of and effective adaptation to environmental change. Collating good practice of social and management systems that enable learning and adaptation within and between organisations is needed. It also seems important to follow up the role in learning of both environmental appraisal and the application of the idea of 'real options' to natural capital, as suggested in RB5, as well as taking forward the suggestion that the next major phase of publicly-sponsored environmental and sustainability research should reflect the true significance of the learning dimension, recognising that the dynamics of learning and the exercise of social intelligence are at the core of the sustainable development idea.

Finally, there is one issue which was not addressed at all in the EHB Programme specification, and which is the only box in Figure 2 which was completely untouched by any project in the Programme: the effect on environment-related behaviour of genetic and evolutionary factors. It would be truly extraordinary if the disposition to certain behaviours as a result of natural selection and environmental interactions over the long history of human evolution, were not relevant to the human behaviours that have impacts on the environment today, but as a research area this still remains largely unexplored.

[1] See Ekins, P. 2004 'Workshop Report of Second Programme Workshop', May, www.psi.org.uk/ehb

FURTHER INFORMATION ABOUT THE EHB PROGRAMME

Professor Paul Ekins
Programme Academic Co-ordinator
Policy Studies Institute, 100 Park Village East, London NW1 3SR
p.ekins@psi.org.uk

Environment and Human Behaviour
website: www.psi.org.uk/ehb

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