

Public Attitudes to Environmental Change: a selective review of theory and practice – executive summary

A Research Synthesis for the Living with Environmental Change Research Programme.

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Paul Upham^{1,2}

Lorraine Whitmarsh^{2,3}

Wouter Poortinga⁴

Kingsley Purdam⁵

Andrew Darnton⁶

Carly McLachlan²

Patrick Devine-Wright⁷

¹ Manchester Business School, University of Manchester

² Tyndall Centre for Climate Change Research

³ School of Psychology, Cardiff University

⁴ Welsh School of Architecture and School of Psychology, Cardiff University

⁵ The Cathie Marsh Centre for Census and Survey Research, University of Manchester

⁶ AD Research and Analysis

⁷ School of Geography, University of Exeter

Executive Summary

This research synthesis summarises a selection of the notable academic and non-academic evidence relevant to *public attitudes to environmental change in the UK*. The aim is to inform the UK research programme Living With Environmental Change (LWEC), and particularly public engagement under LWEC. The focus is on the public as citizens and consumers rather than other stakeholders, except where the latter are closely involved in shaping or mediating public attitudes. Environmental change is understood as change to aspects of the global environment and the UK's 'natural' and manufactured environment, acknowledging that most of the UK terrestrial environment, and much of the marine environment, is to some extent managed or altered by humans. There is a focus on the particular forms of environmental change specified by the Living With Environmental Change (LWEC) programme: climate change; ecosystem management; human, plant and animal health alteration due to climate change; energy and associated infrastructure.

The main value of the report lies in its collation, summary of and inference from key references relating to the UK social science of environmental change, particularly public engagement in this. Some 60 UK organisations contributed reference material, supplying over 150 reports. In total, nearly 600 items of literature have been referenced, primarily relatively recent material. The review focuses primarily on theories and studies from the environmental psychology and (more briefly) the environmental sociology literature. We also make some reference to the multi-disciplinary risk perception and science and technology studies literatures. With a small number of notable exceptions, we do not review the literature on monetary valuation of environmental features.

Key points

- The literature on UK public attitudes to environmental change is highly variable in quantity. Notably, there is substantially more literature on UK attitudes to climate change and energy infrastructure than on UK attitudes to landscape and species change.
- As expected, the literature is not organised in terms of an environmental change or adaptation theme: it is scattered across disciplines, drawing on a wide variety of theories and, often, no explicit theory at all. An adaptation-focussed research centre or network would help to address this, particularly if policy-makers are looking for more coherent, policy-oriented guidance from the social sciences.
- More consistent use of psychological and sociological theory would enable studies to build coherently on existing understanding. Place attachment, for example, is particularly relevant to understanding responses to location-based environmental change.
- There is no simple relationship between attitudes, engagement and behaviour change. A very wide range of contextual factors influence attitudes and constrain behaviour; habit and routine are also important. If engagement is undertaken for the purpose of changing attitudes and/or encouraging behaviour change, then these wider factors will also need to be addressed.
- There may be particular benefits from deliberative studies that investigate attitudes to inter-related types of environmental change simultaneously, in real policy settings. There is a conditionality to attitudes that is missed by single-issue studies.

Psychological and sociological perspectives on attitudes and attitude change

Attitudes are hypothetical constructs which refer to an individual's evaluation of, or orientation towards, an 'attitude object' (ie, thing, idea, person, group, action, self, etc). Attitudes are typically said to comprise three components - cognition (knowledge), affect (emotions) and behaviour - and

vary in intensity and direction. They may be changed through communication processes and experience, but also as a result of behaviour change. Crucially for this review, we emphasise that attitudes are not static or decontextualised; rather, they are dynamic, influenced by a range of factors, often ambivalent or uncertain, and frequently not predictive of behaviour. Yet, they hold important functions for individuals, such as helping to organise knowledge, inform decisions, express identity and seek connections with others. Furthermore, the concept of attitudes is helpful in understanding how individuals interpret and respond differently to the same information, since pre-existing beliefs and views (ie, attitudes) have been shown to bias perceptions and guide behaviour: people are more attentive to, and accepting of, attitude-consistent information and tend to ignore or reject dissonant information. This characteristic of attitudes is central to this review, as it highlights the heterogeneity of the public and helps explain the diverse effects of communication (including on environmental change issues). In addition, we highlight the disparity between attitudes and behaviour and emphasise the various influences on behaviour, including structural and unconscious drivers of action (eg, habit).

In addition to the psychology literature, there are literatures from other disciplines that provide explanatory accounts of the contextual factors that constrain and shape values, worldviews, attitudes and behaviour. In terms of environmental behaviour change, there is an understandable preference at policy level for information campaigns, which are politically and practically easier to implement than structural change or regulation. Yet there is no doubt that people are significantly influenced, and often constrained, by various aspects of their environments. An increasingly popular theoretical approach with this premise is the 'practices' approach from the sociology of consumption. In explaining attitudes and behaviour, the practices literature emphasises the role of habits, routines and the social and technological systems into which people fit, rather than attitudes per se.

Although not necessarily deterministic or structuralist, the practices approach does tend to locate agency (ie free will and the capacity to act) away from the individual. From this we can infer that responses to environmental change may be seen as, in part, dependent on the degrees of freedom that people have, or may be given, to respond to environmental change. We can further infer that this scope for public response may be shaped by policy in different directions, including those that are environmentally desirable and those that are not. This explanatory account is most relevant to types of environmental change that will require, or are likely to induce, some form of action, and, in this review, we identify examples of studies on the uptake of domestic appliances and air conditioning. Exploring the implications of the practices approach and of other approaches focusing on social, economic, political and other factors external to the individual is a clear theme for further research in terms of anticipating and influencing public responses to particular types of environmental change.

Similarly, risk perception may be understood not only as a product of psychological processes, but also of broader social, institutional and cultural factors. Cognitive biases and heuristics as well as emotional responses have been found to play a central role in perceiving risks; for example, hazards that induce a feeling of dread and those which have been directly experienced tend to be seen as more risky. Yet perceptions are also influenced by how risks are communicated by the media, government, industry, friends, and others, by institutional and social trust, and by cultural myths and local contextual factors. Thus, we argue that risk perceptions, like attitudes, are best understood through an interdisciplinary lens.

Attitudes to climate change and its impacts

Public awareness and reported concern about climate change is widespread. However, while most accept that climate change has human causes, a significant minority remain sceptical and detailed

understanding of the process and of the relative contribution of different activities remains limited. There is a tendency to conflate climate change with other environmental issues, notably ozone depletion, to confuse climate and weather, and to understand climate change in terms of the broader (and more morally-loaded) concept of 'pollution'. In addition, climate change is perceived as a remote issue, with (a) other social, personal and environmental issues more pressing, (b) impacts befalling future generations and other regions, (c) others' (eg, industry) actions as primary causes, (d) responsibility for tackling it assigned principally to government. Risk perception is limited by various issue characteristics (global, long-term, uncertain) and social-psychological processes (media framing, perceptions of communicators, dissonance, denial). While public support for mitigation action is high, willingness to change personal (particularly travel) behaviour is limited by various perceived individual, social and structural barriers.

In respect of specific climate change impacts, most extant research relates to public perceptions of flooding, and a small number of studies exist on heat stress and drought perceptions. There is very little research on public attitudes to sea-level rise or abrupt climate change. In general, the public considers flooding to be one of the impacts of climate change, although flood victims tend to see climate change as a secondary cause of flooding (after more proximal causes, such as local development). Overall, few consider themselves to be at risk from flooding. Heat-related impacts from climate change appear to be considered more benign (or even pleasant) than flooding, and awareness of heat stress risks is very low amongst vulnerable groups.

There is considerable heterogeneity amongst the public in respect of their attitudes to climate change and its impacts; attitudes and risk perception vary by experience, broader environmental values/beliefs, demographic and other factors. Important differences emerge in findings according to the methodology used. In particular, survey research probably tends to suffer more from acquiescence bias (respondents simply agreeing with any option presented), while qualitative research provides more insights into how knowledge is constructed and applied in the context of everyday decisions and highlights the low salience of climate change for individuals relative to their other priorities.

Attitudes to changes in ecosystems, landscapes and species

In terms of scope and quantity, research on UK attitudes to actual and prospective changes to ecosystems, landscapes and species is relatively limited. Much of the work that we did manage to access consists of descriptive statistics based on large-scale, surface-level questionnaire responses, or a small number of interviews or focus group responses. The work on attitudes to genetic modification is more sophisticated, perhaps because of a higher profile and level of resourcing, following the government-sponsored GM Nation project.

The existing research literature suggests that place attachment, environmental values and ideas of what is 'right and normal' are closely involved in the formation of attitudes to ecosystem, landscape and species change. Scientific-type knowledge of biodiversity and GM is limited, with the result that people seem to base their judgements on their existing higher-level rules and values. The research area is complicated by perceptions of, and trust in, government and other actors that are involved in managing landscapes (and seascapes). Institutional trust is likely to be an important influence on opinions of environmental change, whether that change is directly engineered or managed. Attitudes to the UK natural environment have been more often investigated in relation to the impact of new infrastructure than in relation to prospective 'natural' change.

Attitudes to energy technologies and infrastructure

Well-known renewable energy sources, such as wind and solar, are consistently and almost universally viewed positively by the general public in principle. Although public attitudes to lesser-

known renewables, such as biomass, tend not to be as favourable as to wind and solar energy, they are still more positive than attitudes to fossil fuels and nuclear power. However, positive general attitudes are often not translated into the acceptance of renewable energy developments by local communities, and there is a sizeable literature that seeks to understand public opposition to energy infrastructure. We emphasise the potential role of the place attachment and place identity literature in helping to shed light on people's responses to new energy infrastructure, and indeed to other forms of environmental change. Opposition can be understood as a response to the perception of threat and disruption to the places to which people are attached. Mitigating this response may often not be possible, but attention to the particular ways in which the technologies and infrastructure are represented by developers may assist, as may selection of sites where a population is likely to perceive a development as beneficial. The challenge is to work towards a position in which the new development is seen as enhancing an area rather than posing a threat to its local meaning.

Public engagement and environmental change

In the context of environmental change and related science and technology, the many possible objectives of public engagement need to be clarified ahead of embarking on the activity, and then matched with corresponding methods. These objectives may include attempts to enthuse and stimulate interest in science and nature, debate-oriented initiatives, and attempts to influence attitudes and behaviour in pro-environmental directions. There are already many precedents for related types of engagement activity. Broadly speaking, information provision approaches work best when they are tailored to audience values/beliefs and particular contexts; deliberation when designed and conducted well can increase quality, legitimacy and capacity of decision-making. There are a variety of rationales for public engagement and guides to effective deliberation. We refer to the science and technology studies (STS) literature, which challenges the privileges of scientific and technological expertise relative to public opinion, and we provide an overview of engagement principles, as well as the limitations of engagement.

In summary, in terms of further attitudinal and engagement-related research, it will be important to avoid simply asking the public abstract or in-principle questions: context, contingencies, trade-offs and choices are all key but are rarely explored. The reframing of nuclear power in terms of its potential contribution to climate change mitigation and energy security, and its associated increase in what can be considered reluctant acceptance, is an example of the importance of asking questions in context. We suggest using multi-disciplinary, integrated assessment studies of prospective change in specific geographical areas as a means of applying many of the insights contained in this report. More specific suggestions for future research are provided in section 7.

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