

Parallel Session 27: Cultural Differences in Public Understanding of Sciences

COMMUNICATING CLIMATE CHANGE: CHALLENGES POSED BY THE DIVERGENCE IN LAY AND EXPERT UNDERSTANDING

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Abstract

Building on previous PCST research which highlights the role of contextual factors in determining lay conceptions, this study examines the UK public's understanding of climate change. Findings from interviews and a major survey expose the heterogeneity in lay understanding about the issue due to individual and social influences. The results also show a clear divergence between lay and expert opinion where knowledge of other environmental, and broader cultural discourses are central in determining lay perceptions of, and response to, climate change. This research shows the need for communication which adopts relational strategies to highlight the relevance of climate change in terms with which people identify.

Key words: Climate change, public understanding of science

Context

The UK government has been keen to demonstrate its commitment to tackling climate change. However, attempts to inform the UK public about climate change and to encourage energy conservation have had little impact on individuals' understanding or behaviour (Park et al., 2002). Studies suggest there are notable differences between public understanding of climate change and expert accounts. Lay perceptions of climate change are often related to moral concerns, for example about global inequality (Darier & Schule, 1999), or conceptually integrated with other environmental issues (Hargreaves et al., 2003).

Research in PCST indicates that personal, social and institutional context determine how information is interpreted and used (Wynne, 1991). Acceptance of environmental information is influenced by perceptions of relevance, credibility, trust, individual efficacy and responsibility (Eden, 1993; Burgess et al., 1998). Global risks, such as climate change, are inevitably more difficult to communicate, because their relevance to everyday concerns, actions and experience is not necessarily evident, and responding to them may involve sacrificing highly symbolic aspects of modern lifestyles (Kempton,

1991).

If communicating climate change is to be effective, there needs to be a greater understanding of the context in which publics perceive the issue.

Objective

This research examines the contextual determinants and dimensions of public understanding of climate change, including any disparity with scientific conceptions.

Methodology

The research comprises qualitative interviews (N=24) and a postal survey of residents in Hampshire, UK (N=589; representing 33.3% response rate). The postal questionnaire addressed themes that emerged during the interviews and included qualitative and quantitative questions. Stratified random sampling was applied to ensure a representative and demographically diverse sample. Analysis included thematic analysis (for qualitative data) and T-tests/Chi-square tests, regression and factor analyses (for quantitative data).

Results

Both the interview and survey data highlight the considerable variation in understanding climate change - both in terms of people's level of knowledge and their conceptions, language and attitudes. This heterogeneity reflects a dynamic process of constructing understanding (evidenced in interviews) and the diverse characteristics of respondents. Analysis reveals participants' background (e.g. gender, age), educational level and experience significantly influence understanding and attitudes. These individual and social influences on lay conceptions of climate change contribute to a divergence with expert accounts.

As anticipated, respondents often conceptually integrated climate change with other environmental issues, particularly ozone depletion. Participants' (particularly women's) understanding was often related to directly-experienced phenomena, particularly air pollution and weather. In some cases, climate change was understood in moral terms - that is, the issue was seen as indicative of modern society's dysfunctional relationship with the environment. There was also a sense that controls should be implemented to ensure an equitable approach to tackling the issue.

The overlapping issues of uncertainty and distrust of information were central in determining interviewees' perceptions of, and response to, climate change. Analysis of the interview and survey data¹ revealed the dimensions of uncertainty and distrust included:

- Feeling under-informed or unsure of one's own knowledge (particularly amongst older respondents);
- Ambivalence (particularly amongst men and more qualified respondents) about the reality of anthropogenic climate change due to perceived

uncertainty or dispute among the scientific community and exaggerated or dubious claims made by the media or scientists.

In contrast to second-hand information, respondents trusted the evidence of their senses: those whose health had been affected by air pollution or who believed the weather is changing tended to be more certain of the reality of climate change.

Conclusions

Consistent with previous research in PCST and constructivist theories of learning (e.g., Scott, 1987), this study suggests an individualised, context-dependent process of constructing understanding. Lay-expert divergence in understanding climate change can be understood in terms of different ways of constructing meaning (Bruner, 1986): in contrast to abstract, scientific knowledge, lay understanding is relational. Accordingly, effective communication must adopt relational strategies to highlight the relevance of climate change to people's lives in terms with which they identify.

In addition, this research provides evidence of how the public evaluates information about climate change. Disparity between the UK government's exhortations for individuals to reduce their energy consumption and widely-reported political and scientific debate over climate change is likely to undermine public trust in climate change information.

Notes

1. Factor analysis of the quantitative data revealed uncertainty to be the strongest and most reliable ($\alpha=0.66$) dimension of respondents' attitudes.

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