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THESIS SUMMARY

Promoting Lower-Carbon Lifestyles: The role of personal values, climate change communications and carbon allowances in processes of change

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Keywords: Climate change, Pro-environmental behaviour, Sustainability, Informal education, Values

This thesis, involving UK-based research, investigates how to promote behavioural changes to reduce greenhouse gas emissions associated with individuals' lifestyles. Four distinct but related projects examine whether or not and how climate change movies influence attitudes and behaviour; motivations of individuals who have already adopted lower-carbon lifestyles; and the experiences of people attempting to live with an annual carbon allowance.

Impacts on 104 viewers of *The Age of Stupid* were assessed using a four-stage panel survey that advances knowledge by considering longer-term (15 month) as well as immediate effects on attitudes (e.g. concern about climate change) and behaviours (e.g. transport choices). Longitudinal studies of behavioural impacts of climate change communications are vital but rare; the methodological challenges of conducting such studies are discussed. This will be useful to researchers wishing to improve evaluation of environmental education programmes.

The transtheoretical model of behavioural change is used to analyse the processes of change employed or depicted by four climate change films, in order to identify more generally the strengths and limitations of movies as means to promote action. This is a methodological innovation as it applies insights from health psychology to environmental education.

Exploratory mixed-methods research (involving in-depth interviews and a values survey) with 16 people who have adopted lower-carbon lifestyles reveals that protecting 'the environment' *per se* is not the primary value stimulating most interviewees' action; typically they were more concerned about social justice. Participants' narratives of how they became engaged with climate action reveal links to human rights issues/groups as much as environmental organisations and positive experiences in nature. This contrasts with papers about the formative experiences of environmental educators published in 1999 in this journal. It advances knowledge about climate change awareness/education campaigns, suggesting a need to appeal to altruistic values as well as focussing on natural world impacts.

Finally, the findings from interviews with 23 members of 10 Carbon Rationing Action Groups show that a major educational benefit is members' increased carbon literacy. Mechanisms through which this occurs include energy use monitoring, carbon footprint calculations, and group discussion/peer learning. These could be promoted by educators in this field.

Peer reviewed publications in this thesis:

Howell, R.A., 2011. Lights, camera... action? Altered attitudes and behaviour in response to the climate change film *The Age of Stupid*. *Global Environmental Change* 21, 177–187.

Howell, R.A., 2012. Investigating the Long-Term Impacts of Climate Change Communications on Individuals' Attitudes and Behavior. *Environment and Behavior*, doi: 10.1177/0013916512452428.

Howell, R.A., 2012. Living with a carbon allowance: the experiences of Carbon Rationing Action Groups and implications for policy. *Energy Policy* 41, 250–258.

Howell, R.A., 2013. It's *not* (just) "the environment, stupid!" Values, motivations, and routes to engagement of people adopting lower-carbon lifestyles. *Global Environmental Change*, 23, 281–290.

Howell, R.A. Using the transtheoretical model of behavioural change to understand the processes through which climate change films might encourage mitigation action. Accepted for publication in a special issue of the *International Journal of Sustainable Development* on 'Sustainability Tales, Fictions and Other Stories from the Movie Industry'.

Supervisors: Dr David Reay, Prof Peter Higgins, Dr Simon Allen (The University of Edinburgh); Dr Charles Warren (University of St Andrews)

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