

THE WHEN AND HOW OF COMMUNICATING CLIMATE CHANGE

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ABSTRACT

This investigation discovers how combined use of the Theory of Planned Behaviour and the Elaboration Likelihood Model could offer greater specification for both academics and practitioners looking to improve the effectiveness of communication as a tool to encourage behaviour change. It will contribute, as Stern called for, to greater understanding of the catalogue of variables which are involved when people are contemplating changing environmentally significant behaviours.

KEY WORDS

Elaboration Likelihood, Planned Behaviour, Communication, Climate Change

1. INTRODUCTION

The UK Government, non-governmental organisations and pressure groups frequently use communication as a means of encouraging changes in personal behaviour to mitigate the effects of climate change.

As an example, 'Act on CO2', a major current campaign attempts to "*increase awareness and understanding of the relationship between climate change and CO2 and encourage genuine sustained behaviour change*" at a current cost of £5.5 million per annum. (Hansard, 2008)

This continued use of communication in the form of advertising and other forms of information provision continues despite a range of reports which the UK Government has commissioned and received since 2000, from think tanks, academics and communications professionals, which have reviewed its policy and practice on behaviour change approaches used to persuade the public to take personal action to limit climate change. These share the view that a new approach is needed to communicating about climate change, with criticism of provision of information as a tool to drive action:

"In the past, DETR/Defra has perhaps placed too much faith in the idea that information drives action.... Government should only consider running an information campaign if it can offer some additional policy solutions alongside it. Without those additional policies, there is little point in the campaign." (Collins et al., 2003)

"The limitation of information-based and educational programmes needs to be recognised and confronted by policy-makers." (Darnton et al., 2005)

"Research suggests that learning by trial and error, observing how others behave and modelling our behaviour on what we see around us provide more effective and more promising avenues for changing behaviours than information and awareness campaigns." (Jackson, 2005)

The case is argued that when mass media and information campaigns are used, they should at least be driven by theory: "*...information and advertising campaigns could be better designed around the techniques of behavioural influence.*" (Halpern et al., 2004)

However, so far a 'synthetic theory' to explain environmentally significant behaviour has not yet been identified. What have been identified are four major types of causal variables - attitudinal variables (such as norms and values), contextual variables (persuasion/pressure), personal variables (abilities and time/money) and habits/routines. (Stern, 2000)

Stern argues that these different types of causal variables may interact and calls for researchers to undertake studies which combine variables from more than one of these broad four classifications to create a more comprehensive understanding of the subject.

This study aims to examine a range of communication interventions, which despite criticism continue to be a key tool in driving voluntary behaviour change. These will be analysed using the Theory of Planned Behaviour, "*the most dominant model of attitude-behaviour relations*" (Armitage and Christian, 2003) and a key theory from the field of persuasion, the Elaboration Likelihood Model.

2. LITERATURE REVIEW

2.1. Two theories better than one

Ajzen and Fishbein formulated the Theory of Reasoned Action (TRA) in 1980 to investigate the discrepancy between attitude and behaviour. This theory suggests that a person's behaviour is determined by their attitude toward the behaviour, their intention to perform the behaviour and their perceptions of the extent to which those important to them will approve of the behaviour (subjective norm).

Later the further construct of perceived behavioural control was added, for those situations where intention to act might be mitigated by a person feeling they could not take action for reasons outside their control. With this addition they renamed their conception the Theory of Planned Behaviour (TPB).

The TPB is described as social cognition model, as it is concerned with understanding our thought processes as we make sense of social situations and stimuli. (Oskamp and Schultz, 2005).

The Elaboration Likelihood Model (ELM), is a process model, offering a ‘framework for organizing, categorizing and understanding the basic processes underlying the effectiveness of persuasive communications.’ (Petty and Cacioppo, 1986)

The ELM addresses variables internal to the receiver; motivation and ability to process information, and variables external to the receiver; perceived quality of the message and rating of the source of the message.

This makes the TPB and ELM suited to a study of communication intended to encourage people to cognitively engage with a topic.

The TPB can be used to assess cognition, and the ELM to investigate “factors that may increase or decrease the likelihood of a message receiving thoughtful consideration.” (Lundy, 2005)

Together they address two key questions in research. Zanna and Fazio categorise the research process into possible new phenomena starting with ‘is’ questions: ‘is’ there an effect, ‘is’ this a phenomenon? Researchers then move on to ‘when’ questions or ask ‘in what conditions’ does this effect take place, and TPB is categorized as informing this type of research. Alternatively researchers ask ‘how’ questions – how do different circumstances mediate effects? (Zanna and Fazio, 1982)

These authors advocate that ‘when’ and ‘how’ questions should not be alternative approaches, but asked simultaneously, as data on each set of questions can inform the other. In this study it is argued that knowledge of the social cognition profile can explain process effectiveness, and understanding this can further specify the social cognition effects.

Zanna and Fazio’s general approach of asking ‘when’ and ‘how’ questions together has specific support with regard to the two models it is being proposed to use together.

Examining the degree of attention that recipients pay to communication can add definition to social cognition models like TPB because it allows study of thought processes about the communication as well as the subject being communicated. (Updegraff et al., 2007; Thompson et al., 2007)

The ELM contributes towards understanding of ‘how’ attitudes are changed, and can be useful for explaining how, even ‘when’ measures of attitudes about a particular behaviour are favourable, they may still not be successful about predicting behaviour. (Petty et al., 2002)

2.2. Benefits for communicators

From a communication professional perspective, the ELM adds vital specification to the TPB in explaining behaviour. While communicators need to be mindful of cognitions of the targets of their communication in devising programmes, they more usually have direct influence over external variables such as message and source.

The architects of ELM argue that while the models of Ajzen and Fishbein address the ‘consistency’ between attitude and behaviour, they leave a crucial gap for communicators in offering guidance about how ‘*the traditional source, message, recipient and channel variables*’ affected attitude change. (Petty and Cacioppo, 1986)

Sutton agrees that a weakness of the TPB is that it can be used to identify beliefs to be targeted in an intervention but offers no assistance in how to change those beliefs. Such a weakness has to be resolved in order to strengthen the TRA and TPB as ‘*tools for developing effective*

behaviour change interventions'. (Sutton, 2002) This limitation of the TPB is acknowledged alongside the recommendation that models like ELM can be used to address it. (Ajzen and Manstead, 2007)

The TPB and ELM have been used together to inform a study of cycle helmet use. (Quine et al., 2002) The two have also been used in a study of communication used to promote exercise in schools. (Hill et al., 2007) In both cases only the TPB was empirically tested, with the ELM used for guidance as to how to create persuasive messages.

The two models were used together, again as guidance to inform activity rather than being empirically tested, in a project to increase bus use. As a result the empirical testing of the two models together was recommended. (Beale and Bonsall, 2007)

However the above examples of theory being used to inform the development of communications are rare. In a systematic review of research reports where the TPB had been used in a communication study, it was found that it was rarely being used by communicators in this way (Hardeman et al., 2002) which corresponds with one of the criticisms of communication campaigns raised in the introduction.

3. OBJECTIVES

As a result of the findings in the literature review, this research has two objectives:

- To contribute towards the development of theory by addressing both attitudinal and contextual factors in an empirical test of both the TPB and the ELM in the same study. This will allow for the ELM and TPB to be tested both separately and together, to see whether some or all of the variables from either theory give greater predictive ability when combined with the variables of the other.
- To provide professional communicators with evidence of how theory can be used to give a better understanding to questions about 'when' communication is effective in encouraging behaviour change and 'how' it is effective. This evidence will be drawn from field studies of a range of behaviour change communication activities, thus providing an illustration of theory in an applied setting.

4. METHODOLOGY

4.1. Participants

The participants in the study have all been targets of one of six different persuasive communication interventions taking place in the same part of the UK. Each intervention was organised by one of two non profit organisations, one an environmental action group and one a local authority. (The sample can be further broken down into groups according to which intervention they were exposed to, but that is beyond the scope of this paper).

Participants were selected on a convenience basis just after the persuasive communication had been received.

In an attempt to at least partly stratify the sample, data on the age and sex of the participant was gathered as a way of judging whether a reflective sample of the population was captured (ongoing). A complete sample size of 6x30 participants was set as the goal.

4.2. Questionnaires

Two questionnaires were used. Questions to capture each of the variable constructs were developed by a literature review. Particular attention was paid to using as closely as possible, questions which had been found to have high reliability in previous surveys, while following Ajzen's advice that questions must relate to specific, not general behaviour (Ajzen, 1991) and to be cautious about adapting incautiously items used successfully in previous studies but which refer to different behaviours. (Ajzen, 2002)

The first questionnaire contained all of the ELM constructs except elaboration and also the TPB 'intention' construct. For most interventions the questionnaire was conducted face to face between researcher and participants, though for one intervention where the communication was received electronically, the survey was also conducted in this way.

The second data set asked questions capturing the ELM 'elaboration' construct and also the remaining TPB constructs. This questionnaire was conducted by telephone call (except for the electronic intervention, for which data was again collected electronically).

The staging of the questions was chosen on a partly practical basis (to keep the questionnaire on each occasion to a reasonable size), and partly because of the need for time to elapse for the enduring nature of the ELM variable of 'elaboration' to be tested.

There is no definitive guidance on optimum time to elapse – in a message dense and rapidly moving situation such as a political election intentions were measured in a week, (Fishbein and Coombs 1974, in Ajzen, 2005) but more frequently studies tend to report taking place after four to five weeks. (Daigle et al., 2002; Sejwacz et al., 1980; Sheeran et al., 1999; Ajzen, 2002)

4.3. Analysis

After the first data collection involving 30 participants, both questionnaires were tested for internal consistency using Cronbach's alpha coefficient and weaker questions removed from questionnaires used in later data collections. This is in line with Ajzen's recommendation for the TPB that questionnaires be piloted with a relatively large set of scales, and reduced to a smaller subset that exhibit high internal consistency. (Ajzen, 2002)

It is intended to conduct an analysis of each theory individually using standardised multiple regression, and to use stepwise multiple regression to investigate whether the predictive power of both models can be enhanced by the addition of variables from the other.

5. POTENTIAL CONTRIBUTION

Despite the limitations of communication as highlighted in the introduction, it continues to be used as a key tool in attempts to change environmentally significant behaviour. By achieving the objectives set out earlier, this study will contribute towards Stern's call for the building of a synthetic theory to explain the linkages between the many variables which affect people when subject to communication urging voluntary personal behaviour change.

It will also provide professional communicators with evidence of how theory can be used to give a better understanding to questions about 'when' communication is effective in encouraging behaviour change and 'how' it is effective. Answers to such questions can assist in the improved formulation of communication programmes, improving the likelihood of effectiveness.

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