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## Global Environmental Change

journal homepage: [www.elsevier.com/locate/gloenvcha](http://www.elsevier.com/locate/gloenvcha)



# Social influence approaches to encourage resource conservation: A meta-analysis

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### ARTICLE INFO

#### Article history:

Received 7 June 2012

Received in revised form 26 July 2013

Accepted 28 July 2013

#### Keywords:

Social influence

Meta-analysis

Behavior change

Resource conservation

### ABSTRACT

Would somebody be more willing to start recycling if they knew that their friends were all recycling? Social influence refers to the ways in which our behaviour is affected by what other people do, or by what other people think. Various insights from theories of social influence have been applied as part of interventions to encourage resource conservation, such as the use of social norms, social learning, and social comparison processes. The question arises: Is social influence as effective as is sometimes assumed? This review compares the effectiveness of different social influence approaches to encourage resource conservation via a meta-analysis and outlines what remains to be learned about the mechanisms linking social influence to behaviour change. A random-effects meta-analysis with a sample of 29 studies revealed that social influence approaches were effective when compared to a control group. They were also more effective when compared to another intervention, although in this case the effect size was small. The effectiveness was different for different social influence approaches and for different target groups. These findings raise a number of important questions, which form the basis of a research agenda for better understanding the processes through which social influence approaches encourage resource conservation.

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## 1. Introduction

Current global trends indicate that human impacts on the environment are considerable. For example, carbon dioxide emissions through the combustion of fossil fuels have steadily increased over the past decade (IPCC, 2007). In view of these and other environmental problems, such as air pollution, landfill problems, peak oil and climate change, it is important to understand how pro-environmental behaviour patterns can be encouraged.

Interventions aimed at encouraging pro-environmental behaviours have been widely implemented but so far have had mixed success and uptake (Abrahamse et al., 2005; Schultz et al., 1995). Increased attention is devoted to incorporating insights from theories of social influence into the development of interventions to encourage pro-environmental behaviours. Social influence is believed to occur when an individual's thoughts, feelings or actions are influenced by other people or groups (Forgas and Williams, 2001). Through social interactions, observations, and information, people form opinions and beliefs about how they ought to behave

and about what is socially acceptable, such as being silent in a library (Aarts and Dijksterhuis, 2003). Despite a proliferation of social influence approaches, little systematic research exists regarding the extent to which these approaches are effective in encouraging resource conservation and under which conditions they are most effective. The question arises: Is social influence as powerful as is sometimes assumed?

This paper addresses this important question and is guided by three aims. First, we review social influence approaches used to encourage resource conservation and explore potential mechanisms linking social influence to behaviour change. A better understanding of these behaviour change mechanisms can help improve the effectiveness of social influence approaches. Second, we examine the extent to which social influence approaches are effective at encouraging resource conservation using a meta-analytic approach. Third, based on the findings, we propose a research agenda and provide practical guidelines for the implementation of social influence approaches to encourage resource conservation.

## 2. Social influence approaches

Would somebody be more willing to start recycling if they knew that their friends were all recycling? Would a household

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start saving energy when they are told their energy use is above the neighbourhood average? Various scholars have suggested that the effectiveness of interventions to encourage resource conservation could be enhanced by incorporating insights from social influence theories and principles, such as social norms, social learning, and social comparison (e.g. [Cialdini, 2003](#)). We have identified six social influence approaches that are frequently used in the psychology literature: (i) the use of social norms in information and feedback provision, (ii) block leaders and social networks, (iii) public commitment making, (iv) modelling, (v) the use of social comparison in feedback provision, and (vi) feedback provision about group performance. Below, we briefly describe these interventions and provide theoretical explanations for their effectiveness. We also discuss the role of three factors (so-called moderator variables) that may influence the effect of social influence approaches: the type of approach, the social group targeted by the approach, and the type of behaviour that is targeted.

### 2.1. The use of social norms in information and feedback provision

One of the most popular and widely used social influence approaches to encourage behaviour change is undoubtedly the use of social norms as part of information and feedback provision. Social norms are conceived of as “rules and standards that are understood by members of a group, and that guide and/or constrain human behaviour” ([Cialdini and Trost, 1998](#), p. 152). Two types of social norms can be distinguished ([Cialdini et al., 1990](#)). Beliefs about which actions are common in a given situation are referred to as descriptive social norms. Beliefs about what “ought” to be done in a given situation are referred to as injunctive social norms. When used in interventions to encourage resource conservation, information can be conveyed about what other people are doing, and/or what other people approve or disapprove of doing.

Social norms are cues that help people make sense of social situations (especially those characterised by a high degree of uncertainty or ambiguity) in terms of how people are expected to behave ([Cialdini and Goldstein, 2004](#)). People adhere to social norms to gain social approval or to avoid social sanctions, so that other people will like them ([Cialdini and Goldstein, 2004](#); [Keizer and Schultz, 2012](#)). Studies show that our behaviour can even be guided by social norms when we are not aware of it ([Aarts and Dijksterhuis, 2003](#); [Keizer et al., 2008](#); [Nolan et al., 2008](#)). According to focus theory of normative conduct ([Cialdini et al., 1991](#)), norms guide behaviour when they are made salient. For example, people are more likely to litter in littered environments (i.e. where the descriptive norm in favour of littering is made salient) – even when the prevailing norm favours not littering.

### 2.2. Block leaders and social networks

Block leaders are volunteers who help inform other people about a certain issue. The approach is based on the assumption that information provision will be more effective when conveyed by somebody from the same social network. According to diffusion of innovation theory ([Rogers, 1995](#)), social networks play an important role in the diffusion of information. The extent to which information spreads through a social network depends on the number and the strength of social ties ([Granovetter, 1973](#)). Research indicates that social networks play a powerful role in the spread of a range of phenomena, including voting behaviour and the spread of obesity ([Christakis and Fowler, 2009](#)). Information spreads more quickly when a social network has more ties. Information is likely to affect behavioural decisions when the

information is provided through strong ties (e.g. family member), compared to weak ties (e.g. acquaintance).

The effectiveness of block leaders may be attributed to the so-called ‘liking’ principle. The more we like someone, the more we try and form meaningful relationships with them ([Cialdini, 2001](#); [Cialdini and Goldstein, 2004](#)). Also, people are more likely to comply with a request when they perceive some similarity with the other person, even when this similarity is futile, such as sharing the same first name or birthday ([Burger et al., 2004](#)). So, a block leader may be effective because the use of existing social networks increases the chances of information reaching a certain group (diffusion of information), as well as increasing the chances that people in this network act on this information because it comes from someone they know personally (liking/similarity).

### 2.3. Public commitment making

Commitment making is generally defined as the binding of an individual to a certain opinion or behaviour ([Kiesler, 1971](#)). In a commitment making procedure, people are asked to make a pledge, for instance to start recycling. Commitment making has been linked to an individual's need for consistency, for example between attitudes and behaviour ([Cialdini, 2001](#)). Indeed, a study using the foot-in-the-door technique (whereby a first, small request is followed by a second, larger one) found that people with a high preference for consistency were more likely to commit to a large target request (fill out a long survey), when this followed an earlier commitment to a small request (fill out a short survey), compared to those with a low preference for consistency ([Cialdini et al., 1995](#)).

Commitment making can be especially effective when the commitment is made in public, or has the potential to be publicised ([Cialdini, 2001](#)). Different mechanisms for how public commitments encourage behaviour change have been proposed. One line of reasoning holds that when people commit themselves publicly to engage in a certain behaviour, attitudes and beliefs that are relevant for this behaviour are more salient ([Kiesler, 1971](#)) and remain stable over time ([Pallak et al., 1980](#)). People are more likely to act in accordance with publicly held attitudes, as compared to privately held attitudes. In addition, publicly committed individuals are assumed to be more susceptible to information that is in line with the position they committed to ([Pallak et al., 1972](#)) and more resistant to changes to the position they committed to ([Kiesler and Sakumura, 1966](#)). Public commitments may also encourage behaviour change through social pressure (e.g. protecting one's public image) to stick to the commitment ([Lokhorst et al., 2013](#); [Shippee and Gregory, 1982](#)).

### 2.4. Modelling

As an intervention, modelling entails the use of confederates (“models”) who demonstrate a recommended behaviour. The assumption is that people will start engaging in a behaviour when they observe other people who engage in this behaviour. Behaviour will especially be modelled when it is understandable, relevant, meaningful, and rewarding (in terms of favourable outcomes) to people. Modelling can be considered a social influence approach, as it is not solely about learning by observing. According to social learning theory ([Bandura, 1977](#)), the learning of, for example, new skills occurs in a social context, highlighting that social influence plays a key role in the learning process.

While it is assumed that the effectiveness of modelling to encourage behaviour change occurs through social learning, relatively little is known about whether its effectiveness depends on who is used as a model (similarity), or whether people like the model (liking). Descriptive social norms may play a role as well.

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