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THE USE OF HOPE AND FEAR IN PRO-
ENVIRONMENTAL MESSAGES: SOME INSIGHTS
FROM THE PSYCHOLOGY LITERATURE



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The use of hope and fear in pro-environmental messages: Some insights from the psychology literature

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1. Introduction

A quick look at some of the campaigns that have been used in the past to motivate people to behave more pro-environmentally reveals that many of them attempt to evoke some kind of emotion from the public. This is often related to fear, worry or another negative emotion. There is good reason for targeting emotions when attempting to motivate a change towards more pro-environmental behaviours. Research has shown that emotionally interesting information can have a stronger impact on people's judgements (Chaiken, Liberman, & Eagly, 1989). Following from the way emotions and language evolved, visual images in particular can be used to reach this emotional side. Basic emotions evolved relatively early, before the development of higher level conscious processes such as language. Therefore, emotions are more dependent and respond quicker to information in visual, sensory form (Holmes & Mathews, 2010).

Different types of emotional appeals are used, but overall when a message has a so-called positive frame individuals are presented with the positive consequences of adherence to a message. A negative frame on the other hand tends to present individuals with the negative consequences of non-adherence to a message (Block & Keller, 1995). For the environmental domain this is reflected in messages representing what the future could be like if people changed their behaviour towards more environmental goals, or a message representing what the future could be like if people do not behave in a more environmentally friendly manner. A negative message is also sometimes referred to as a fear appeal. However, fear is not the only negative emotion which can act as a motivator for pro-environmental behaviour.

In this brief paper we will discuss a selection of psychological literature that supports the use of negative appeals and positive appeals, some of the issues surrounding research into this area, and finally the possibility of combining positive and negative appeals.

2. Support for the Use of Negative Appeals

Cognitive psychology has indicated that people tend to be more influenced by the threat of loss than by the promise of gain (Constanzo, Archer, Aronson, & Pettigrew, 1986). This could indicate that persuasive appeals are more effective when they emphasise the environmental losses due to inaction, instead of simply emphasising the benefits of action (Constanzo et al., 1986). Also, negative appeals could be effective because humans seem to generally pay more attention to negative than positive issues (Baumeister, Bratslavsky, & Finkenauer, 2001).

The beneficial effect of negative appeals on environmental behaviour has been illustrated by a number of studies. Compared to a low fear appeal, high fear appeals can be more effective in changing attitudes toward energy consumption (Hass, Bagley & Rogers, 1975). A more recent study compared low, moderate and high fear appeals (Meijnders, Midden & Wilke, 2001); the results indicated that a high fear appeal led to more positive attitudes towards using energy saving light bulbs. Preventing feelings of guilt can also be a reason to engage in pro-environmental behaviour (Pelletier, Tuson, Green-Demers, Noels, & Beaton, 1998). If individuals anticipate feeling guilty when they do not act according to the behaviours outlined in the message, they are more likely to engage in the behaviour (Messi Lindsey, 2005).

Two factors have been identified by research on negative appeals that seem to be particularly important in determining the effectiveness of a negative appeal: perceived fear and perceived efficacy.

Perceived Fear

According to Drive Reduction Models moderate levels of fear arousal are expected to lead to maximum persuasion, whereas high levels of fear arousal might lead to defensive processes preventing acceptance of the message (Higbee, 1969). These models assume that there is a point where the threat seems so unlikely that the fear level drops and message acceptance decreases. Although evidence for drive reduction models is relatively weak (Ruiter, Abraham, & Kok, 2001), more recent studies have emphasised the importance of considering perceived susceptibility and perceived severity of a fear appeal. Individuals need to perceive that the negative consequences depicted in the fear appeal apply to them personally and that the consequences are severe enough to warrant immediate action (Witte & Allen, 2000). This is a challenge in the context of most environmental risks.

Perceived Efficacy

Another important factor in the effectiveness of fear appeals is perceived efficacy. Two types of efficacy are commonly distinguished in psychology research (Witte & Allen, 2000):

1. Perceived self-efficacy: beliefs about the ability to perform the response recommended in the message to avert the threat.
2. Perceived response efficacy: beliefs about effectiveness of the response to avert the threat.

Perceiving the recommended response as ineffective and impossible can lead to a process called fear control. Here an individual tends to try to reassure him- or herself by denial or discounting of the message (Ruiter et al., 2001). On the other hand, perceiving the recommended response as effective and feasible can lead to a more adaptive process of danger control. In this case, an individual focusses on finding a solution to the presented threat instead of focussing on the evoked fear (Ruiter et al., 2001). The latter can lead to more effective behaviour change in line with the recommendations proposed in the message.

For environmental issues specifically, it has been suggested that it is important to focus on collective efficacy. This concept relates to beliefs about the group's ability to achieve group goals (Homburg & Stolberg, 2006). Because of the collective nature of climate change and other environmental issues it is important not to focus solely on self-efficacy. Pro-environmental actions will only be effective if repeated by enough individuals (Hardin, 1968).

In conclusion, research on negative appeals has found support for the use of fear when motivating behaviour change and has identified factors important for the design of an effective fear appeal. However, evidence on the effectiveness of fear appeals seems to be inconclusive. Especially in the health literature, support has been found for the use of fear in behaviour change messages (cf. Higbee, 1969; Witte & Allen, 2000). However, fear arousal has not been identified as a feature that distinguishes between effective and ineffective interventions by reviews of intervention effectiveness. It is suggested that not the capacity to arouse fear but the reassurance provided in the message leads to a change in behaviour (Ruiter et al., 2001). So, when communicating environmental change it might be more important to emphasise the feasibility and effectiveness of protective action, compared to how severe the outcomes can be following non-adherence to the message. Furthermore, there are indications that dramatic messages need to include a sense of connection with the causes and consequences of environmental change in a positive manner. That is, individuals need to be able to perceive environmental change as a personally relevant issue to which they can positively respond (O'Neill & Nicholson-Cole, 2009). The next section will discuss research on the use of positive appeals.

3. Support for the Use of Positive Appeals

Despite some support for fear appeals, counter-productive effects of fear appeals have been identified. There is a danger that individuals may become desensitised to fear appeals, fear may damage trust in communicating organisation, and fear appeals might have unintended reactions (O'Neill & Nicholson-Cole, 2009; Witte & Allen, 2000). If a fear appeal is too extreme and shows unlikely impacts on individuals it can lead to disbelief and denial (Lowe et al., 2006; O'Neill & Nicholson-Cole, 2009). Given these potentially negative effects of fear appeals, hope appeals, using a positive frame might provide an alternative method to motivate pro-environmental behaviour.

To support the use of positive emotional appeals, or 'hope appeals', as an effective method to motivate pro-environmental behaviour, it could be argued that research needs to provide evidence for at least one of the following (Lewis et al., 2007):

1. Positive, hope, appeals, are more effective than negative, fear, appeals in motivating behaviour change.
2. Whether a negative or positive appeal is more effective depends on characteristics of the issue, message or individual.

Recent studies have found support for the former. For instance, focusing on potential solutions and opportunities was more effective in promoting positive intentions toward energy and environmental problems compared to focusing on the gravity of the problem (Van der Velde, Popp, & Van Huylenbroeck, 2010). In another study (Gifford & Comeau, 2011), participants were asked questions to prime them towards a sacrifice view of environmental problems or a motivational view. That is, individuals primed towards a sacrifice view were asked questions such as: "To stop climate change, I have to make sacrifices" and "I am going to have to get used to driving less, turning off the lights, and turning down the heat". Whereas individuals primed towards a motivational view were asked questions such as: "The economy will be stronger if we act first to cut greenhouse gases" and "My neighbourhood will be a healthier place to live if we walk more to cut greenhouse gases". Compared to the sacrifice frame, exposure to the motivational frame was associated with climate change engagement and to some extent behavioural intentions. The authors conclude that there is a need for more positively framed messages:

The results demonstrate, for the first time to our knowledge, the value of what some observers have been calling for: messages that employ motivational-orientated and causative language rather than the sacrifice framing that has been employed by some climate change advocates and agencies.

(Gifford & Comeau, 2011; p.1305)

A similar conclusion follows from another study comparing negative and positive appeals (Spence & Pidgeon, 2010). According to this study, when statistically controlling for fear responses, a message depicting the gains from climate change mitigation is more effective in promoting positive attitudes towards pro-environmental behaviour, compared to a message depicting the losses due to failed climate change mitigation. Note that this is contrary to much of the above-mentioned research on “loss aversion” (Constanzo et al., 1986).

There is also support for the second point mentioned above; research has demonstrated that both message types can be effective depending on certain characteristics. Examples of these characteristics include: issue salience (Obermiller, 1995), processing motivation (Block & Keller, 1995; Das et al., 2008), and (un)certainly (Block & Keller, 1995; Morton, Rabinovich, Marshall, & Bretschneider, 2011).

Issue Salience

When issues are low in salience an appeal that focuses on the problem and its severity can be more effective because negative appeals increase concern. In contrast, for issues that are high in salience, an appeal focussing on the affirmation of individual action and its potential in positively affecting the issue appears to be more effective. When individuals are already concerned about the problem, increasing concern by providing them with a message that focuses on the severity of the problem might make the problem seem overwhelming. On the other hand, a message focusing on individual action and possible positive consequences of action might reduce concern and make the problem more tangible (Obermiller, 1995).

Processing Motivation

People’s motivation to process the message can influence whether a positively or negatively framed message is more effective in changing behaviour. If people are not motivated to process the message, positively framed messages appear to be more influential. On the other hand, when people are motivated to process the message, negatively framed messages can be more influential (cf. Block & Keller, 1995; Maheswaran & Meyers-Levy, 1990; Rothman, Salovey, Antone, Keough, & Martin, 1993). This has been applied to research on the effectiveness of fundraising messages for

charities; in this specific setting individuals tend not to be strongly motivated to process the message. So, a positive message might be more effective in persuading individuals to donate to the charity (Das et al., 2008).

Uncertainty

Climate change and other environmental issues tend to involve a high level of uncertainty. Environmental change is a complex issue, moreover there is natural variability in the climate system and it is difficult to predict human behaviour (Center for Research on Environmental Decisions, 2009). A theory that can inform how this uncertainty should be taken into account when communicating environmental change is Prospect Theory (Tversky & Kahneman, 1981). This theory suggests that individuals tend to avoid risk when considering gains; however individuals' choices are more risky when considering losses. Thus, in uncertain circumstances – such as those surrounding environmental change - individuals need to be in a mind-set to avoid risk, so a positive, gain frame, might be more effective in changing intentions (Morton et al., 2011).

In conclusion, research so far shows that both positive and negative frames could work depending on the situation and characteristics of the individual. Research on the use of positive frames is limited: studies on fear appeals tend to compare high and low fear messages. However, the possibility of motivating people with positive emotions instead of negative emotions should not be ignored. Although negative emotions such as fear have been identified as a powerful motivator for pro-environmental behaviour (Hass et al., 1975; Meijnders et al., 2001), negative appeals have possible detrimental consequences, such as disbelief and denial (O'Neill & Nicholson-Cole, 2009; Lowe et al., 2006; Witte & Allen, 2000). Using hope to motivate pro-environmental behaviour has received support within environmental psychology (Gifford & Comeau, 2011; Spence & Pidgeon, 2010; Van der Velde et al., 2010). But there might be downsides to the use of positive appeals as well. Given the less dramatic nature of positive appeals, these might be less attention grabbing and less memorable compared to a negative appeal (O'Neill & Nicholson-Cole, 2009). Positive appeals miss the 'shock' factor of a fear appeal, and concerns have been voiced about the long-term effectiveness of positive appeals (Lewis et al., 2007). Taking into account the strengths and weaknesses of both appeals the question that could be raised is: should both appeals be combined to overcome their respective limitations?

4. Combining Positive and Negative Appeals

“The notion of adopting one appeal type in place of another is likely to be too simplistic given that each appeal type is associated with different roles and respective shortcomings”

(Lewis et al., 2007; p.69).

Several scholars have noted that in order to overcome feelings of helplessness which can be evoked by a negative message it is necessary to combine a negative frame with positive implications. These provide a sense of connection with the causes and consequences of climate change in a positive manner (Kollmuss & Agyeman, 2002; O’Neill & Nicholson-Cole, 2009). The addition of positive aspects to a negative appeal might help overcome the negative associations resulting from the unpleasant feelings evoked by the negative message (Nicholson-Cole, 2005). Additionally, positive appeals can provide a prevention motivation, depicting the ‘right’ behaviour and the attached prevention of negative consequences (Lewis et al., 2007).

Although there seems to be agreement in the literature on the importance of combining positive and negative appeals to motivate pro-environmental behaviour, research specifically comparing positive, negative, and combined appeals is lacking. We conducted a study attempting to fill this research gap, the study is summarised in Box 1.

Box 1. A Study on the Use of Combined Messages

For this study participants (N = 171) were randomly divided into three groups. All groups viewed a message on marine plastic pollution. The first part of this message consisted of some general information on the topic; this was the same for all groups. The remainder of the message depended on the condition to which the participants were assigned to:

Negative message condition

The background information was followed by this sentence: *“Despite these alarming facts, there are actions we can take to address the problem of plastics. If we do not act now the future might look like this....”*. Then participants were exposed ten images depicting the negative effects of plastic pollution on marine animals and wildlife.

Positive message condition

The background information was followed by this sentence: *“Despite these alarming facts, there are actions we can take to address the problem of plastics. If we act now we can make sure the future will look like this....”*. Then participants were exposed to ten images depicting healthy marine animals and wildlife.

Combined message condition

The background information message was followed by the negative sentence: *“If we do not act now the future might look like this....”*, and five negative images. Then participants saw the positive message: *“Despite these alarming facts, there are actions we can take to address the problem of plastics. If we act now we can make sure the future will look like this....”*, followed by five positive images.

Results & Conclusion

The participants indicated that they came back to the images from the slideshow more often, and experienced more vivid thoughts about them when they had been exposed to the negative and combined message compared to the positive message. Also, participants reported stronger intentions to take action to reduce plastic waste when they had seen the negative or combined message, compared to the positive message. The results seem to suggest that adding negative images to a positive appeal can increase its motivational impact. On the other hand, adding positive images to a negative appeal does not necessarily reduce the effect of a negative message. Moreover, the combined message led to stronger feelings of optimism and less negative feelings compared to the negative message. These feelings could indicate that a combined message can overcome the defence mechanisms that could be evoked by a negative message, such as disbelief and denial.

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5. Summary and Conclusion

Negative messages such as fear appeals are often used to promote pro-environmental behaviours. However, recent studies in the environmental psychology domain have suggested that positive-‘hope’ – appeals can motivate behaviour as well. But research comparing positive and negative appeals is limited and often makes use of verbal messages while public campaigns tend to use visual messages. More research on positive appeals in the environmental field is needed; in particular, combining positive and negative appeals seems to be a promising solution to some of the problems associated with targeting only negative or positive emotions.

In the process of writing this review several other issues have emerged that are important to take into account when studying and designing negative and positive appeals. First, how can it be determined what a positive or negative appeal entails? What will be perceived as positive or negative depends to a large extent on the individual. Contested subjects such as wind energy can be interpreted, and in fact, imagined in many ways: a cleaner healthier environment due to the use of renewable energy or large wind farms obstructing views. It can therefore not be assumed that a positive message is automatically interpreted in a positive manner by an individual, and the same can be said for a negative message. Moreover, the development of negative messages, especially negative future scenarios, involves another potential problem. Negative future scenarios aimed at promoting appropriate behaviours might involve images of others acting inappropriately (e.g. littering or using non-renewable forms of energy). According to the social psychology literature, this is important to take into account because providing individuals with conflicting information can be detrimental to behaviour (Keizer et al., 2008; Lindenberg & Steg, 2007). Finally, it is important to note that in experimental studies, such as those described in this review, participants are in general not presented with a choice. Participants are either presented with a negative message or a positive message and there is less of an opportunity to ignore the message as might happen in real-life. This is important to take into account when interpreting the data, and suggests that it might be particularly important to combine positive and negative appeals in real-life settings to prevent individuals from ignoring the message in reaction to the negative feelings associated with a fear appeal.

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