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Behaviour Change: Insights for Environmental Policy Making

from Social Psychology and Behavioural Economics

This paper surveys research on behaviour change and identifies ways that social psychology and behavioural economics can assist with environmental policy making. By understanding why and how people make decisions – and how decisions are affected by framing, habits, cognitive biases, and risk perception and interpretation – we can design policies that are more effective, less costly and more acceptable to the public.

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Neoclassical economic theory

Environmental policy making based solely on neoclassical economic theory is insufficient, and sometimes totally misguided, for achieving the desired public response. Neoclassical economic theory describes how people *should* choose in certain situations, but it also claims to describe how people *do* choose (Thaler, 1979). Neoclassical economic theory is built on the assumptions that people ‘maximise utility’ (satisfaction), have rational economic preferences among identifiable outcomes, and act independently on the basis of complete and relevant information.

However, in certain situations people often act in ways that are inconsistent with neoclassical theory (Kahneman and Tversky, 1984; Thaler, 1979). Thaler (1979) found that, in these situations, neoclassical economic theory makes ‘systemic errors in predicting behaviour’ (p.39). Dawney and Shah (2005) identify problems with neoclassical economic theory as a tool for motivating effective behaviour change, specifically because it:

- doesn’t explain where preferences come from, and assumes preferences are fixed;
- finds altruism difficult to explain;
- disregards self-expectations and commitments;
- assumes loss aversion does not exist; and
- assumes people always act rationally and logically and have the ability to make the complex calculations required to make the best choices from many alternatives.

Insights from social psychology and behavioural economics

Behavioural economics is an emerging branch of economics that integrates findings from social and cognitive psychology to better understand and predict people's economic choices.

Loss aversion, the endowment effect and the status quo bias mean that people can be resistant to change

Research shows that people dislike losing something more than they like gaining it, and will often take large risks to avoid losses while avoiding small risks to make gains (Kahneman and Tversky, 1984; Thaler, 1992; Dawney and Shah, 2005). This is called loss aversion. People also place extra value on things they consider theirs, and are systemically unwilling to give their things up. This is known as the endowment effect (Thaler, 1992; Bender, Kandel and Goldstone, 2004; Sunstein and Thaler, 2008; Dawney and Shah, 2005).

Loss aversion and the endowment effect mean that people demand much more to give something up than they would be prepared to pay to acquire it. This is contrary to neoclassical economic theory, which states that people should be willing to pay the same amount to acquire something as they will accept in compensation to be deprived of it (Thaler, 1992). Cost-benefit analysis to value environmental goods typically involves using willingness-to-pay surveys ('how much would you be prepared to *pay* to prevent X happening or to gain X?') or willingness-to-accept surveys ('how much would you be prepared to *accept* as compensation for X?'). Neoclassical economics assumes that there is no difference between the two survey types. However, in practice people's willingness-to-accept price has been shown to be up to 20 times their willingness-to-pay price (Dawney and Shah, 2005).

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Loss aversion and the endowment effect help to produce inertia, meaning that people are generally resistant to changes to the status quo (Thaler, 1992). Thaler describes this as the status quo bias: a preference for the current state that biases people against change unless there are persuasive incentives to change. Samuelson and Zeckhauser's 1988 experiments showed that people have a strong inclination to retain the status quo. They found that when an option is presented as the status quo it becomes significantly more popular; and the more options people are given, the stronger the bias for the status quo (Thaler, 1992).

Because of the status quo bias, default options attract large market share (Sunstein and Thaler, 2008). Default options are pre-set choices – such as the chosen electricity provider

when you move into a new house. People can opt to change providers, but it requires making an effort to switch. Research has shown that people generally stay with the default option (Pichert and Katsikopoulos, 2007). People's bias for defaults is reinforced by a common assumption that the default setter has implicitly endorsed the default (Sunstein and Thaler, 2008).

Implications for environmental policy

- Policy makers should be aware of the discrepancies between willingness-to-pay and willingness-to-accept surveys. Dawney and Shah (2005) warn that, in some situations, the type of survey used may determine the outcome of an analysis.
- The status quo bias suggests that policy makers may face resistance if they frame a choice as a departure from the status quo.
- The endowment effect could suggest that people will be more open to environmental protection if they consider the environmental goods as 'theirs'.
- There is considerable opportunity to nudge people into environmentally desirable behaviour through 'green' defaults (for example, carbon neutral electricity providers). However, this raises the question of which default should be set, and who determines it.

Framing and ordering affect the choices people make

People are very susceptible to how questions and problems are framed. Depending on how it is framed, the same information can lead to different outcomes. Framing information means presenting it in a way that will resonate in a certain way with a particular group of people. Framing leads to predictably different choices (Kahneman and Tversky, 1986; Milch et al., 2009). Because people are loss averse, whether information is framed in terms of losses or gains leads to systemically different decisions (Kahneman and Tversky, 1992). For example, telling people that conserving electricity will *save* them \$X per year is significantly less effective than telling them that not conserving electricity will *lose* them \$X per year (Sunstein and Thaler, 2008).

The order in which people consider benefits and costs has been shown to affect their choices (Milch et al., 2009; Swim et al., 2009). Hardisty, Johnson and Weber in 2006 conducted an experiment where an optional 2% fee was added to airline tickets, alternatively described as a 'carbon tax' and a 'carbon offset' to fund carbon reduction technologies (Gertner, 2009). Passengers were asked to identify with a political group (Republican or Democrat, as it was an American experiment), and to write down their thoughts in order as they decided whether to pay. They found that 65% of those identifying as Republicans were willing to pay for a carbon offset, but only 27% were prepared to pay for a carbon tax (Swim et al., 2009). Democrats were largely willing to pay for both. When Republicans considered a carbon tax they

had very negative early thoughts about the costs of the tax (resulting from a strong aversion to the tax frame), leading to strongly negative conclusions. When considering the carbon offset, both Republicans' and Democrats' early thoughts were more positive as they considered the benefits of funding clean technology before the costs of funding the offset, leading to positive overall conclusions and willingness to pay. People's initial willingness to pay the 2% fee was determined by their receptiveness to the 'tax' and 'offset' frames (not the tax mechanism itself), which in turn affected whether they considered benefits or costs first (Gertner, 2009).

Implications for environmental policy

- Framing policies as avoiding losses is more effective than framing in terms of gaining benefits.
- The *order* in which people consider benefits and costs can influence their decisions. Prompting people to consider benefits before costs can make them more accepting of policy proposals.

Social norms are powerful influences on behaviour

Social norms are behavioural expectations and signals within groups and societies that directly and significantly encourage and guide behaviour (Schultz et al., 2007). The main influence on people's behaviour is the behaviour of other people, particularly people they like (long-lasting influence) and people in authority (shorter-term effects) (Sunstein and Thaler, 2008; Finkelstein, 2009; Dawney and Shah, 2005). People learn their behaviour from watching others, and look to others for guidance on how to act (a phenomenon called social proof), deriving norms about what is appropriate and accepted behaviour (Swim et al., 2009; Finkelstein, 2009). Social norms are particularly influential in ambiguous or stressful situations, or when others are experts (Sunstein and Thaler, 2008; Dawney and Shah, 2005).

Sunstein and Thaler (2008) describe the extent to which people conform to social norms. They describe an experiment where taxpayers were sent four kinds of information. One group was told that their tax money funded public goods, such as environmental protection; another group was threatened with information about the legal risks of not paying their taxes; a third group was given increased information on filling out their tax return form; and the final group was told that 90% of people had already fulfilled their tax return obligations. The only intervention that had any effect on people's behaviour was the final one, which told people that there was a high compliance rate. Direct appeals to altruism, increased information and threats did not have a noticeable effect on behaviour.

Research shows that people often assume that undesirable behaviours are more common than they really are (Schultz et al., 2007). Social norms marketing campaigns (campaigns that use normative messages to try to change 'socially significant' behaviour, such as alcohol consumption or recycling, for example) are increasingly being used as an alternative to

more traditional approaches to behaviour change (such as information campaigns, appeals to altruism or appeals to people's fears). These campaigns attempt to reduce undesired behaviour by letting people know that the behaviour is not as prevalent as they think (perceptions of what is commonly done in a given situation are known as *descriptive norms*) However, this can have an undesired, 'boomerang' effect by increasing the behaviour in people who previously avoided it. Schultz et al. found that it was possible to avoid the boomerang effect by introducing another type of norm to social norms marketing campaigns: a norm describing perceptions of what is commonly approved of or disapproved of within the society or group (an *injunctive norm*). They found that when household power bills displayed the average amount of electricity that other households in the same community were using (descriptive normative information), people tended to decrease or increase their electricity use to fit the norm. The undesired boomerang effect (low-energy users increasing their energy use to fit the norm) was prevented by giving people positive feedback (injunctive normative information). High-energy users received frowning-face emoticons ☹ on their power bills, while low-energy users received smiley-face emoticons 😊 (Schultz et al., 2007; Swim et al., 2009; Sunstein and Thaler, 2008). The combination of descriptive and injunctive normative messages meant that heavy users made even bigger cuts, and the light users remained frugal (Schultz et al., 2007).

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Implications for environmental policy

- Public policy should marginalise undesired behaviour and refer to undesired behaviour as an individual action that can be controlled, not something that everyone is already doing (Finkelstein, 2009).
- Public policy should promote desired behaviour as the norm.

Group cooperation can lead to better public outcomes

Numerous group and individual decisions pave the way for widespread support for policies (Gertner, 2009). To promote cooperation in making these decisions, it is crucial to understand the dynamics of group and individual decision making (Gertner, 2009; Krantz et al., 2008). Research shows that, while both are important, the order in which they occur is significant (Gertner, 2009; Milch et al., 2009).

People inherently enjoy being part of groups and display strong biases to in-group members (Dawnay and Shah, 2005; Gertner, 2009). The more that people identify with a group, the more willing they are to make decisions that benefit the group as a whole (Van Vugt, 2009). Van Vugt's (2001) water conservation experiments found, for example, that households with strong senses of community identity did not need a financial incentive to conserve water during a water shortage.

Group decision making has both advantages and disadvantages over individual decision making. Milch et al. (2009) found that groups tend to be more accurate in certain judgement tasks (such as estimating numbers and risk assessment) than individuals. However, group members often do not share information with the rest of the group, and groups are sometimes more susceptible than individuals to decision-making biases.

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Experiments simulating shared-resource (commons) dilemmas have shown that cooperation deteriorates when people experience (or believe that they are experiencing) inequality or inequity (Swim et al., 2009). Trust and fairness are crucial for overcoming commons dilemmas. Krantz et al. (2008) describe how environmental decisions often appear to be commons dilemmas, where 'non-cooperation is the dominant strategy', even though it makes everyone worse off in the long run. Activating cooperation within groups helps to overcome this problem. Krantz et al. suggest:

- encouraging individuals to conform to group norms;
- enabling individuals to share group successes; and
- ensuring individuals carry out group-role obligations.

Experiments at Columbia University's Center for Research on Environmental Decisions (CRED) have shown that introducing arbitrary group symbols – such as a blue star – and telling people that they belong to the 'blue star team' can increase group participation from 35 to 50%; while simply seating people at a table together can increase participation rates to 75% (Krantz et al., 2008).

CRED researchers have also found that the order in which people consider decisions (group versus individual) has a significant effect on cooperation. When people make decisions as members of groups before making them as individuals, their conversations involve more inclusive words like 'us' and 'we' than when they make them in the opposite

order. Groups also tend to be more patient than individuals when considering delayed benefits (Gertner, 2009; Milch et al., 2009).

Implications for environmental policy

- Building people's sense of community belonging and identity could lead to greater cooperation.
- Structuring the public decision-making process to involve groups early in the process could lead to a better balance between social outcomes and individual outcomes.

Altruism and people's sense of fairness affect behaviour

Dawnay and Shah (2005) identify situations where people do not expect or even want payment, and find that financial rewards in fact occasionally act as a disincentive to desirable behaviour: for example, volunteer work where payment could detract from the warm fuzzy feeling of doing a good deed. Ariely and Heyman (2004) found that in non-monetary exchange relationships, altruism leads to a performance level that is 'high, constant, and insensitive to payment level' (p.788). Financial penalties are usually expected to act as a disincentive to undesired behaviour, but have been found to sometimes have the unintended effect of legitimising, and thus increasing, such behaviour (Gneezy and Rustichini, 2000; Ariely and Heyman, 2004). People feel guilty when they go against social norms and 'do the wrong thing', but fines have been shown to sometimes offset guilt by making people feel

as though they have been punished and have atoned for their behaviour (Dawnay and Shah, 2005). To address problems with public goods allocation, neoclassical economic policies often redistribute tax revenue from polluting activities to the people most adversely affected. However, Dawnay and Shah found that this approach often makes people feel as if they are being bribed to accept the polluting activity, which undermines their motivation to 'do the right thing'. They found that it is more effective to directly address people's concerns.

People's willingness to pay for public goods is affected by how fairly they think costs and benefits are distributed. The more fairly people perceive the process and the outcome to be, the more they will contribute. Bender et al. (2004) found that when people were given money to allocate between their own use and a public good, most contributed about 50% to a public good. However, Fehr and Gächter (2002) found that without altruistic punishment, cooperation breaks down. Altruistic punishment is when people punish those who do not cooperate, even though punishment is expensive and there is no material gain for the punisher. Fehr, Fischbacher and Gächter (2002) found that, if treated fairly, people often both cooperate voluntarily and apply altruistic punishment. This is called strong reciprocity. They found that strong reciprocity can lead to 'almost universal cooperation in circumstances in which purely self-interested behavior would cause a

complete breakdown of cooperation' (Fehr, Fischbacher and Gächter, 2002, p.1). Fehr and Fischbacher's 2004 research found that altruism can evolve so that cooperation becomes the default behaviour in large groups – so long as people not only altruistically punish those who do not cooperate, but also punish people who fail to apply altruistic punishment (Fehr, Fischbacher and Gächter, 2002; Fehr and Fischbacher, 2004; Buchanan, 2005).

Care needs to be taken when appealing directly to people's altruism. Kaplan (2000) found that the usual altruism-centred approach to promoting environmentally responsible behaviour is generally unhelpful, as it leads to feelings of helplessness by 'concentrating on sacrifice rather than quality-of-life-enhancing solutions' (p.1). Likewise, attempting to motivate people with fear can be unhelpful, as it can lead people to minimise or ignore problems (Stern, 2005). When people feel they don't have control over a situation, they are much less likely to cooperate or to see much point in changing their behaviour (Zax, 2009; Dawney and Shah, 2005).

Implications for environmental policy

- To prevent people feeling helpless, policy makers should take a participatory approach to forming policy or choosing policy instruments, and also avoid overloading people with excess information and choice (Dawney and Shah, 2005).
- Policies should build on the control people do have over their environment, and empower people to help manage their local resources.
- Policy makers should be cautious with financial incentives and penalties, as they can have unintended consequences.

Habits are significant obstacles to behaviour change

Bender et al. (2004) describe how following others' behaviour, and our own habits, creates shortcuts, allowing us to 'economise on mental effort'. Whenever we make a decision we have three options: follow others, repeat an action we've previously taken, or choose anew. Because it is much easier for us to take a shortcut – and follow others or our own previous behaviour – we generally do take shortcuts rather than choose anew. Easy decisions with known, hassle-free outcomes produce rewarding feelings, which in turn reinforce those decisions in a feedback loop, creating habits. Habits can be difficult to change if they are frequently repeated and if there are strong associated rewards, particularly immediately following the action (Dawney and Shah, 2005).

Dawney and Shah found that the first step to breaking undesirable habits is simply being made aware of them. Once we are conscious of a habit, we can assess the benefits and costs of other behaviours. We may then choose to adopt a new behaviour, which, in time, becomes a new habit. Visual cues can be helpful in changing habits, as they can remind us of desirable behaviour.

Implications for environmental policy

- Where public policy is trying to change behaviour, particularly something that is clearly a habit, then social psychology and behavioural economics become significantly more important than simple neoclassical economic incentives.
- Policy makers should be aware of the existence and strength of pre-existing habits that may hinder people in changing their behaviour.
- Environmental policy should make people aware of their unconscious habits and of preferred alternative behaviours, and should provide a variety of incentives to adopt environmentally conscious habits, as well as providing people with prompt feedback to spur and reinforce desired behaviour change, such as visual cues (for example, colourful recycling bins with bottle-shaped holes).

When our actual behaviour diverges from our expectation of how we usually behave (or from our perception of how others expect us to behave) we often feel uncomfortable.

Divergence of self-expectations and behaviour can lead to cognitive dissonance

When our actual behaviour diverges from our expectation of how we usually behave (or from our perception of how others expect us to behave) we often feel uncomfortable. This is known as cognitive dissonance, and either our self-expectations or our behaviour must change to resolve it (Dawney and Shah, 2005; Stoll-Kleemann, O'Riordan and Jaeger, 2001). Stoll-Kleemann, O'Riordan and Jaeger (2001) showed that people find the consequences of climate change alarming. However, they also found that people find the idea of changing their energy-intensive lifestyles more daunting. These competing tensions create cognitive dissonance, and people form 'socio-psychological denial mechanisms', meaning they overestimate costs and underestimate benefits of shifting to less energy-intensive behaviour while blaming other people's and government's inaction.

If we have publicly expressed our attitudes or beliefs, we are more likely to change our behaviour so that it remains consistent with them (Dawney and Shah, 2005). Therefore, commitments and promises are important for ensuring people stick to behaviour. When people make a small commitment (for example, signing a petition), they are more likely to agree to make a much larger commitment a few days later (for example, donating money). People are also more likely to stick to a commitment if it is public, if they verbally agree or write down their intentions, or if they make the commitment as a member of a group (Finkelstein, 2009).

Implications for environmental policy

- Knowledge of the effect of commitments and promises would help policy makers design better policy options. Understanding key public perceptions would help avoid undesirable policy responses, such as those arising from cognitive dissonance.
- Policies should encourage people to make small commitments, make commitments public and build on small commitments.

Asymmetric discounting biases people towards the present

As part of cost-benefit analysis, economists typically discount future costs and benefits relative to present costs and benefits. The discount rate is the rate at which future outcomes are devalued. Determining the correct discount rate to make cost-benefit choices between different environmental policy proposals is one of the biggest uncertainties in environmental economics, particularly the economics of climate change. However, to predict how people will respond to different

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environmental policy proposals, we need to understand people's perceptions of intertemporal trade-offs (for example, between the economy and the environment). This requires understanding the *actual* discount rates that are *implicit* in people's intertemporal decisions (Hardisty and Weber, 2009).

Research shows that people often implicitly discount 'irrationally'; that is, in ways contrary to the predictions of neoclassical economic theory (Weber et al., 2008; Dawney and Shah, 2005; Hardisty and Weber, 2009; Thaler, 1992). People underestimate future benefits and overestimate future costs, and they also over-value present benefits and under-value future benefit. People typically discount gains more than losses and discount small outcomes more than large outcomes. Weber et al.'s (2008) experiments showed that people demand more in compensation for delaying consumption than they are prepared to give up in order to accelerate consumption.

This asymmetrical intertemporal discounting of costs and benefits poses problems in dealing with environmental issues like climate change. Actions to mitigate climate change incur

immediate, tangible costs and sacrifice immediate, tangible benefits. Their future, uncertain and abstract benefits are discounted. Hardisty and Weber's (2009) research found that people's strong negative reactions to immediate costs and sacrifices mean that it is unlikely that people will make decisions leading to long-term sustainable behaviour.

Weber et al. (2008) greatly reduced intertemporal discounting in people's choices by manipulating the order in which the participants in their research considered the benefits of immediate or delayed consumption. When prompted to argue for delayed consumption first, participants showed 'drastically reduced' intertemporal discounting. Hardisty and Weber (2009) found that social norms typically determine the order that people consider different options.

Implication for environmental policy

- Controlling the order in which individuals and groups consider the benefits of immediate or delayed consumption can reduce intertemporal discounting.

People use both analytical and emotional decision-making processes to process risk; risk experienced via personal experience is more motivating than risk experienced via description

People use two systems to process and assess risk: analytical (or reflective) and emotional (or associative, affective) (Gertner, 2009; Sunstein and Thaler, 2008; Swim et al., 2009). When we experience risk through our analytical system we consciously consider costs and benefits. Analytical risk processing is a rigorous and therefore slower process that must be explicitly taught (Swim et al., 2009). When we experience risk through our emotional system, it is a

non-formal, automatic, individual process – we experience risk as an instinctive feeling, an urgent gut reaction (Weber, 2006). The two systems reinforce each other, but in situations where their outputs differ, the emotional system generally dominates. In the case of climate change there seems to be a conflict between the two systems: the emotional system is not sending warning signals, even though analytical assessment tells us that it is a huge problem (Swim et al., 2009).

People's fear of risk often does not correspond to objective risk assessment. The same information can lead to different choices depending on how a risk is assessed (Weber, 2006). Experiments in analytical risk assessment have shown a bias for immediate benefits and a tendency to undervalue future outcomes (Gertner, 2009). When assessing risk emotionally, people tend to underestimate the danger of events they have never experienced and events that appear physically and temporally distant, and to overestimate the likelihood of low-probability events if they have personally experienced them (Gertner, 2009; Weber, 2006). People generally overestimate the likelihood of easily imagined risks, and underestimate the risk of things that happen relatively frequently (Sunstein

and Thaler, 2008; Dawney and Shah, 2005). People also discount the risk of things they enjoy doing, as well as the risk of things that they are familiar with (i.e. where they have daily exposure to a risk) (Bender et al., 2004; Swim et al., 2009). The American Psychological Association warns that 'greater familiarity with climate change and its risks, unless accompanied by alarmingly large negative consequences, may actually lead to smaller rather than larger perceptions of its riskiness' (Swim et al., 2009, p.46).

Risk experienced via description is risk that is learned from experts, usually in the form of statistical information. Risk experienced by recalling personal (bad) experience is more effective at prompting action than risk experienced via description, as it usually produces a strong visceral response (Gertner, 2009; Weber, 2006). Because climate change is characterised by uncertainty, and its effects are not yet being widely experienced (or at least noticed), people have to rely on descriptions of the risks – scientific models and expert judgement, or media interpretations of these – which do not favour immediate action. By the time we experience strong emotional responses to climate change that are based on personal experience, it may be too late to avoid particularly adverse outcomes (Swim et al., 2009; Weber, 2009; Zax, 2009). Lejarraga (2009) found that people are willing to trade off complicated, detailed information experienced by description for less accurate but simpler personally experienced information.

Research also shows that many people do not trust risk messages that come from scientists or government officials. This lack of trust helps create reactance: a negative reaction towards policy or advice that appears to threaten individual freedom. The American Psychological Association emphasises that changing behaviour requires trust, especially when people believe that the change involves a cost (Swim et al., 2009).

Implication for environmental policy

- Weber argues that we need to find ways to evoke visceral reactions in people, by emphasising the local and short-term effects of climate change rather than trying to muster empathy for things that could happen to someone else, somewhere else (Weber, 2006; Zax, 2009).

People have a finite pool of worry and are susceptible to the single-action bias

Weber (2006) found that people have a finite pool of worry. This means that we often struggle to maintain our fear of one problem when a new problem comes along. She also identifies the single-action bias occurring when one action (such as buying a hybrid car, or voting for a green candidate) effectively assuages the fear (climate change) that prompted the action, meaning that we don't take further actions and are back where we started (Gertner, 2009; Weber, 2006).

Implication for environmental policy

- Policy makers need to be aware of these biases so that they do not abandon policy efforts aimed at one risk (climate

change) in favour of another (financial recession), and to ensure that they apply a range of policy instruments that target problems most effectively.

Increased information does not necessarily lead to behaviour change

Abrahamse et al. (2005) found that increased information leads to higher levels of knowledge, but not necessarily to behaviour change. McKenzie-Mohr and Smith found that campaigns relying only on providing information often have 'little or no effect' on behaviour, and insist that most complex behaviour needs a multifaceted approach, which will also need to change over time (McKenzie-Mohr and Smith, 1999, p.7).

Changing human behaviour is an important part of addressing the problem of climate change

Stern (2005) found that single-strategy approaches to behaviour change have largely been ineffective. This is because behaviour change depends on many factors, and targeting only one type of behaviour is likely to make a difference to only a small percentage of people.

Implications for environmental policy

- When distributing information, policy makers should look at the quality and framing of the information, not the quantity.
- Policies should address actual and perceived barriers to behaviour change.
- Policies should use multifaceted, contextualised approaches to behaviour change rather than single-strategy approaches.

Conclusion

Kaplan (2001) found that effective environmental policies 'must be based on a coherent conception of human nature that speaks to the relationship between how people approach new information, how information relates to motivation, and how information and motivation relate to behavior change' (p.1). Social psychology and behavioural economics offer effective, and potentially inexpensive, approaches to addressing these questions. Anthropogenic climate change is caused by human behaviour. Changing human behaviour is an important part of addressing the problem of climate change – whether it is changing individuals' consumption habits, or enhancing decision-making processes to favour social outcomes over individual outcomes. If policy makers apply an understanding of social norms, cognitive biases, competing motivations, group dynamics, and other insights from social psychology and behavioural economics, they have the potential to significantly motivate environmentally beneficial changes in individual and group behaviour.

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