aptara | CONL | conl˙448 | Dispatch: January 28, 2009 | CE: VBA
Journal | MSP No. | No. of pages: 6 | PE: Allie Struzik

POLICY PERSPECTIVE

# Mean or green: which values can promote stable pro-environmental behavior?

Judith I. M. de Groot[1] & Linda Steg[2]

[1] Psychology, Poole House, Bournemouth University, Fern Barrow, Poole BH12 5BB, UK.
[2] Linda Steg, Department of Psychology, University of Groningen, Grote Kruisstraat 2/I, 9712 TS Groningen, the Netherlands.

**Keywords**
Environmental policies; moral considerations; pro-environmental behavior; values; biospheric values.

**Correspondence**
Judith de Groot, Psychology, Poole House, Bournemouth University, Fern Barrow, Poole BH12 5BB, UK. Tel: + 44 1202 961557; fax: + 44 1202 965314.
E-mail: jdgroot@bournemouth.ac.uk

Received: 31 July 2008; accepted 9 December 2008

doi: 10.1111/j.1755-263X.2009.00448.x

## Abstract

In most cases, pro-environmental behavior does not maximize individual interests, but mainly benefits other people or the environment. We propose that although acting on the basis of egoistic considerations may result in pro-environmental behavior, altruistic and biospheric considerations provide the most stable basis for pro-environmental behavior. We present two strategies to promote stable pro-environmental behavior. The first way is increasing the saliency of altruistic and biospheric values in specific situations, thereby reducing the relative strength of egoistic values. The second way is making the often "anti-environmental" egoistic values compatible with "pro-environmental" altruistic and biospheric values. We explain these options and translate it to possible interventions, policy implications, and follow-up research to promote "green" behavior.

There is a growing awareness that human behavior contributes to environmental problems such as water pollution, decline of biodiversity, and desertification (IPCC 2007). Therefore, it is relevant to study factors influencing behaviors to reduce these problems. Following Stern (2000), we define pro-environmental behaviors as "those behaviors that change the availability of materials or energy from the environment or alters the structure and dynamics of ecosystems or the biosphere positively." Acting pro-environmentally entails that people benefit others or the environment, whereas often, no direct individual benefits are received by engaging in these behaviors. For example, reducing car use is beneficial for society and the environment because it reduces environmental pollution, extensive land use, and congestion. However, reducing car use has individual disadvantages, such as decreased freedom or increased travel times. Pro-environmental behavior often implies acting morally right, that is, acting on considerations of what is the right or wrong thing to do (Thøgersen 1996), as it often does not benefit individual interests in the short term, but mainly benefits other people or the environment (Bagozzi & Dabholkar 1994; Thøgersen 1996).

In this article, we discuss possible ways to promote stable pro-environmental behavior. We argue that although egoistic values can trigger pro-environmental behavior, they should always be supported by altruistic and biospheric values. Interventions to promote "green" behavior will be more effective in the long term when altruistic and biospheric values are taken into account. We will first explain in which sense egoistic, altruistic, and biospheric values are important when explaining pro-environmental behavior (values, morality, and pro-environmental behavior section 1). Then, we discuss possible conflicts between egoistic, altruistic, and biospheric values and why such conflicts are problematic, especially in the case of high-cost pro-environmental behavior (acting "mean" or "green"? section). Finally, we present two ways to support acting on altruistic and biospheric values in order to promote stable pro-environmental behavior (how to promote pro-environmental behavior: acting "green" instead of "mean" section).



  

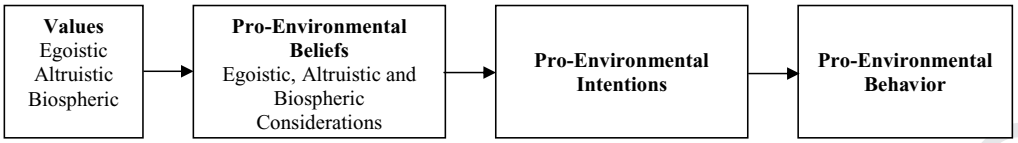


**Figure 1** A model of how egoistic, altruistic, and biospheric values influence pro-environmental beliefs, intentions, and behavior.

## Values, morality, and pro-environmental behavior

Many scholars have emphasized the importance of studying human values when explaining pro-environmental behavior (e.g., Naess 1989: Fransson & Gärling 1999;). Schwartz (1992) defines a value as "a desirable transsituational [relatively stable, manifesting itself in different situations] goal varying in importance, which serves as a guiding principle in the life of a person or other social entity (p. 21)." Although all values are important, they are ordered in a system of value priorities (Schwartz 1992). This feature implies that when different competing values are activated in a certain situation, choices are based on the values that are considered to be most important to act upon in a specific situation.

Most scholars assume that egoistic, altruistic, and biospheric values are indirectly related to pro-environmental behavior, through behavior specific beliefs, norms, and intentions (e.g., Stern 2000). It is assumed that values influence behavioral beliefs and thus which aspects are considered in a given situation, which in turn influences intentions and behaviors (see Figure 1). Changes in the priority of values may result in changes in many different behavior-specific beliefs, intentions and pro-environmental behaviors simultaneously. Therefore, this article focuses on the relationships between values and pro-environmental behavior.

Three types of values are important when explaining pro-environmental behavior (Stern 2000; De Groot & Steg 2008): egoistic (i.e., self-enhancement or pros-elf), altruistic (i.e., self-transcendent or prosocial), and biospheric (i.e., ecocentric) values. People with a strong egoistic value orientation will especially consider costs and benefits of pro-environmental behavior for them personally: when the perceived benefits exceed the perceived costs they will behave in an environmentally friendly manner and vice versa. People with strong altruistic values will base their decision on behaving pro-environmentally or not on perceived costs and benefits for other people. Finally, people with a strong biospheric value orientation will mainly base their decision to act pro-environmentally or not on the perceived costs and benefits for the ecosystem and biosphere as a whole. All people hold egoistic, altruistic, and biospheric values to some extent and all three types of values may provide a distinct basis for pro-environmental behavior. For example, a person may reduce car use because the financial costs of driving a car are too high (egoistic), because driving a car endangers the health of people due to pollution or accidents (altruistic), or because it harms plants and animal species (biospheric). Therefore, in principle, people who prioritize an altruistic or biospheric value orientation above an egoistic value orientation do not necessarily act in more ecologically sound ways than people with a predominating egoistic value orientation.

However, in many cases acting on egoistic values implies not behaving pro-environmentally because the personal costs associated with the pro-environmental behavior outweigh the personal benefits (i.e., from an egoistic value perspective). In contrast, acting on altruistic and biospheric values mostly entails acting pro-environmentally, because pro-environmental behavior is often associated with high societal and environmental benefits. Therefore, pro-environmental behavior is typically seen as acting morally right: in most cases, you act pro-environmentally when altruistic and/or biospheric values are strong. Empirical evidence suggests that pro-environmental behavior is indeed a function of moral considerations and altruistic and/or biospheric values (e.g., Guagnano 2001; Joireman *et al.* 2001; Schultz *et al.* 2005) and people evaluate altruistic and biospheric values as important (De Groot & Steg 2007, 2008).

## Acting "Mean" or "Green"?

Why do people not always act in line with their altruistic and biospheric values? Why do some people persist on driving by car, why do they not buy organic food, and why do they not accept policies in favor of the public good, although they do believe that doing the right thing for others and the biosphere is important? We argue that when altruistic and biospheric values are in conflict with egoistic values in a particular situation, people are tempted to base their decision on egoistic values, as we will explain in this section.

Various studies showed that egoistic values are mostly negatively and altruistic and biospheric values are mostly positively related to pro-environmental beliefs and



 

behaviors (Stern & Dietz 1994; Honkanen & Verplanken 2004; De Groot & Steg 2007), probably because many pro-environmental behaviors require individuals to restrain egoistic tendencies. Sometimes altruistic and biospheric values conflict as well, for example when choosing between donating money for an environmental or humanitarian organization or buying fair-trade or organic food (De Groot & Steg 2008), but this is less often the case. Thus, in many cases acting in congruence with altruistic and biospheric values suggests acting "green," while acting in line with egoistic values mostly implies choosing less pro-environmental behavioral options.

This conflict between values seems problematic because research shows that people act a priori more on egoistic considerations and less on altruistic and biospheric considerations. Egoistic values will especially play an important role when individual behavioral costs of acting pro-environmentally are relatively high (Moore & Loewenstein 2004; Lindenberg & Steg 2007). Diekmann & Preisendörfer (2003) used a hypothesis by Kirchgässner (1992), which states that concerns with gain (e.g., egoistic considerations) will quickly displace concerns with norms (e.g., altruistic or biospheric considerations) when costs increase. This assumption is called the "low-cost hypothesis" of normative behavior. Various studies support the hypothesis that high-cost behaviors are less strongly related to altruistic and biospheric considerations than low-cost behaviors (Guagnano *et al.* 1995; Hunecke *et al.* 2001; Bamberg & Schmidt 2003). This does not mean that altruistic and biospheric considerations are not influential at all in high-cost situations. Rather, they play a less prominent role than other, notably, egoistic, considerations. Indeed, altruistic and biospheric values may at times be associated with high-cost behavior, although these relationships are usually weak (Nilsson & Küller 2000; Gatersleben *et al.* 2002).

We assume that *stable* pro-environmental behavior can be promoted only when people act in line with altruistic and biospheric values, even in high-cost situations. Although in some cases acting egoistically may concur with acting pro-environmentally, self-interests provide a too fickle basis for achieving stable pro-environmental behavior. As soon as the personal costs and benefits of the behavior change, for example, as a consequence of changes in the structural or personal circumstances, individuals can decide not to act pro-environmentally in the particular situation. In contrast, acting on altruistic or biospheric values provides a stable basis for acting pro-environmentally because people can flexibly react to changing circumstances and remain reliably pro-environmental as long as altruistic and biospheric values are associated with acting pro-environmentally. In other words, acting on the basis of trying to do "the right thing," which generally implies acting on altruistic and biospheric values, is hardly influenced by personal or situational circumstances and will consequently lead to more stable pro-environmental behavior (e.g., Lindenberg & Steg 2007). Although it makes theoretical sense that especially altruistic and biospheric values result in stable pro-environmental behavior, this assumption has not been validated empirically.

Because acting on the basis of altruistic and biospheric values generally benefits collective interests and/or society, it is important to examine *when* people are more willing to act on altruistic and biospheric values. Research shows that behaving morally often requires external support, be it through institutions, moralization (Lindenberg 1983), or explicit disapproval for not following these values or norms (Tangney & Dearing 2002). In other words, in many cases altruistic and biospheric values need to be supported. In how to promote pro-environmental behavior: acting "green" instead of "mean" section, we will present two strategies for increasing the relative importance of altruistic and biospheric values in specific situations, which may promote stable pro-environmental behavior.

## How to promote pro-environmental behavior: Acting "Green" instead of "Mean"

There are two possibilities that may enhance stable pro-environmental behavior. The first way is by strengthening the saliency of altruistic and biospheric values in specific situations, hereby reducing the relative strength of egoistic values when promoting pro-environmental behavior (making altruistic and biospheric values more salient section). The second way is by making acting on egoistic values compatible with acting on altruistic and biospheric values, making it easier to act green (reducing conflicts between egoistic, altruistic, and biospheric values section). We will consider both options and translate it to possible interventions, policy implications, and follow-up research to enhance pro-environmental behavior.

### Making altruistic and biospheric values more salient

The first way to promote stable pro-environmental behavior may be by strengthening the relative importance of altruistic and biospheric values in specific situations or increasing the cognitive accessibility of these values. This does not imply that values change, as values are relatively stable and enduring over time (Schwartz 1992).

However, it is possible to make values more salient or to increase the cognitive accessibility of values, which will affect the way people prioritize their values in specific situations and consequently the extent to which different values influence beliefs, intentions, and behavior in a particular situation (see e.g., Maio & Olson 1998; Verplanken & Holland 2002).

For example, acting on altruistic and biospheric values is more likely when people receive information on why someone should engage in specific pro-environmental actions. Informational strategies can be aimed at increasing actors' awareness of environmental problems, their knowledge of the environmental impacts of their behavior, and their perception of (dis)advantages of behavioral alternatives (e.g., Abrahamse *et al.* 2005). Because altruistic and biospheric values are highly abstract (what does it mean "to be helpful?" or "to protect the environment?" in specific situations; see Maio & Olson 1998), thorough knowledge may clarify how to act in line with altruistic and biospheric values. Such information is crucial to support people to act on their altruistic and biospheric values, which will make pro-environmental actions more likely.

Information campaigns by governments assume that people are persuaded more by arguments based on egoistic considerations rather than altruistic or biospheric considerations, at least in The Netherlands. These campaigns often fail to promote sustainable behavior because they are designed to motivate egoistic considerations only. By doing so, it is likely that egoistic values are being prioritized, while altruistic and biospheric values are perceived as less important in that context. For example, information provided by the Dutch government to introduce policies aimed at reducing $CO_2$ emissions by decreasing car use often focuses on egoistic consequences (e.g., reducing car use causes reductions in congestions which will reduce your travel time and increase your traffic safety; or, car use is more expensive than public transportation). Governments rarely try to promote reductions in car use by stressing altruistic or biospheric interests. They could emphasize that car use, hence roads and motorways, lead to a deterioration of nature and wildlife conservation areas, a disturbance of the ecological balance and a decrease in biodiversity, emphasizing that this influences people's living environment and health. We propose that information on altruistic and biospheric benefits of behaving pro-environmentally is important in increasing the saliency of altruistic and biospheric values and to strengthen their influence on the particular behavior. Providing information will be especially effective if pro-environmental behaviors are associated with low costs.

Another way to strengthen the influence of altruistic and biospheric values on beliefs, intentions, and behavior may be to make them subject to a process of moralization (Lindenberg 1983; Rozin *et al.* 1999). During this process, values are linked to supporting emotions ranging from "you are a bad person if you act against biospheric values and norms" all the way to expressions of disgust as reaction to deviance, say to somebody who uses a "gas guzzler" car just for fun (Lindenberg & Steg 2007). Both information and moralization strategies are used in social movements and government campaigns. One approach to induce moralization and to effectively change behavior is by asking people to commit themselves to certain behavior, that is, to pledge or promise to act pro-environmentally (Pallak & Cummings 1976; Katzev & Johnson 1983). We assume voluntary commitments are more likely to activate altruistic and biospheric considerations to act pro-environmentally (Osbaldiston & Sheldon 2003).

In conclusion, we assume that one strategy to promote pro-environmental behavior is making altruistic and biospheric values more salient, in order to increase the likelihood that people will act upon these values. We provided two possibilities to bring about this change in value-saliency (i.e., knowledge and moralization). Future research should reveal under which circumstances each of these strategies will be most effective in making people act in line with their altruistic or biospheric values.

When the egoistic costs of acting sustainably are perceived to be high, many individuals will just refuse to meet them. Focusing on altruistic and biospheric considerations may be a risky strategy in this case, as this may result in reactance when people see no feasible behavioral alternatives available. Therefore, a second strategy may be needed to avoid reactance, which we describe in the subsequent section.

## Reducing conflicts between egoistic, altruistic, and biospheric values

When the conflict between egoistic and altruistic/biospheric considerations is strong, strengthening altruistic and biospheric values alone may not be sufficient to enhance pro-environmental behavior because the individual costs of acting pro-environmentally will be too high. For example, reducing car use will benefit society by reducing noise in public areas (i.e., altruistic considerations) or $CO_2$ emissions (i.e., biospheric considerations), which makes acting on these two types of values relevant. However, when these considerations strongly conflict with egoistic considerations (e.g., "driving a car makes me happy" or "reducing car use will limit my personal freedom"), acting on the basis of altruistic and biospheric values can be perceived as too costly. Therefore, a second way to support pro-environmental behavior may



 

be reducing the conflict between altruistic and biospheric values that promote environmentally friendly behavior on the one hand and egoistic values that demote this behavior on the other hand. This strategy will be particularly important in the case of high-cost behaviors. Here, interventions are needed to render "anti-environmental" egoistic considerations less incompatible or even compatible with altruistic and biospheric considerations. Interventions could concentrate on actually changing the costs and benefits of a specific pro-environmental behavior. For example, pro-environmental actions can be made more attractive through the use of incentives, and/or behavior with a negative environmental impact can be made less attractive by the use of disincentives (Geller 2002). Intervention programs can also focus on changing the perception or evaluation of individual costs and benefits of acting in an environmentally friendly manner to reduce the conflict between values. This strategy will work best when it focuses on the most important egoistic disadvantages of behavior that is environmentally harmful (e.g., emphasizing the extra time lost in congestion when using the car), and/or on the most important egoistic advantages of the environmentally friendly alternative (e.g., focusing on the money saved by cycling short distances instead of driving a car).

The two strategies we suggest—making altruistic and biospheric values more salient and reducing conflicts between egoistic, altruistic, and biospheric values—seem to stand in contradiction to one another. On the one hand, it is important to make altruistic and biospheric considerations dominant and therefore not focus too much on egoistic outcomes. On the other hand, merely focusing on altruistic and biospheric outcomes is in many cases not sufficient to move toward pro-environmental behavioral change, especially in the case of high-cost behaviors. The question, then, is how to solve this problem and move to stable pro-environmental behavior?

We argue that interventions that focus only on the second strategy (rendering egoistic considerations less incompatible or even compatible with altruistic and biospheric considerations) include an important risk. When pro-environmental behavior depends only on egoistic considerations, people will no longer perform the behavior as soon as the individual benefits are low or when the individual costs are relatively high (e.g., when people reduce their car use because of time loss in congestion, they may decide to start driving again when the roads are less congested, making driving yet again a better option). But also changes in personal circumstances, such as how an individual feels at a specific moment, can induce a change in cost-benefit analysis and consequently, inhibit pro-environmental actions. Thus, as argued in the previous section, although acting egoistically may concur with pro-environmental behavior, it seems too fickle to act only on these interests.

Egoistic values should *always* be linked to altruistic and biospheric values because it is ultimately the altruistic and biospheric values that need to be salient to reach stable pro-environmental behavior. For example, Frey (1997) showed that financial incentives that make egoistic values more salient can lower or totally crowd out motivations based on altruistic and biospheric considerations. Similarly, Steglich (2003) showed that sanctions that are seen as supporting altruistic values strengthen the influence of these values on behavior, whereas sanctions that are not linked to these values strengthen the influence of egoistic values. This suggests that biodiversity can best be conserved depending on how egoistic considerations are stressed. When egoistic considerations are not linked to altruistic and biospheric considerations, we believe, stable pro-environmental behavior and thus energy conservation is less likely. Thus, we argue that in most cases a combination of both strategies is needed to come to stable pro-environmental behaviors.

## Conclusion

Altruistic and biospheric considerations provide the most stable basis for pro-environmental behavior. When designing interventions to promote stable pro-environmental behavior, it is important to strengthen altruistic and biospheric values and, at the same time, decrease the conflict between egoistic versus altruistic and biospheric values. First, interventions should focus on making altruistic and biospheric values more salient in specific situations, for example, by informing people how to act on these values. Second, interventions should be aimed at lowering the competition of egoistic values with altruistic and biospheric values by rendering egoistic values less incompatible or even compatible with altruistic and biospheric values. By doing so, it will be easier for people to shift from being "mean" to "green."

### References

Abrahamse, W., Steg, L., Vlek, C., Rothengatter J.A. (2005) A review of intervention studies aimed at household energy conservation. *J Environ Psychol* **25**, 273–291.

Bagozzi, R.P., Dabholkar P.A. (1994) Consumer recycling goals and their effect on decisions to recycle: a means-end chain analysis. *Psychol Market* **11**, 313–340.

Bamberg, S., Schmidt S. (2003) Incentives, morality or habit? Predicting student's car use for university routes with the models of Ajzen, Schwartz and Triandis. *Environ Behav* **35**, 264–285.

De Groot, J.I.M., Steg L. (2007) Values, beliefs and environmental behavior: validation of an instrument to measure egoistic, altruistic and biospheric value orientations in five countries. *J Cross Cult Psychol* **38**, 318–332.

De Groot, J.I.M., Steg L. (2008) Value orientations to explain environmental attitudes and beliefs: how to measure egoistic, altruistic and biospheric value orientations. *Environ Behav* **40**, 330–354.

Diekmann, A., Preisendörfer P. (2003) Green and greenback. The behavioural effects of environmental attitudes in low-cost and high-cost situations. *Ration Soc* **15**, 441–472.

Fransson, N., Gärling T. (1999) Environmental concern: conceptual definitions, measurement methods, and research findings. *J Environ Psychol* **19**, 369–382.

Frey, B.S. (1997) *Not just for the money. A theory of personal motivation*. Edward Elgar, Cheltenham, UK.

Gatersleben, B., Vlek, C., Steg L. (2002) Measurement and determinants of environmentally significant consumer behavior. *Environ Behav* **34**, 335–362.

Geller, E.S. (2002) The challenge of increasing proenvironmental behavior. Pages 525–540 inR.B. Bechtel & A. Churchman, editors. *Handbook of environmental psychology*. Wiley, New York.

Guagnano, G.A. (2001) Altruism and market-like behavior: an analysis of willingness to pay for recycled paper products. *Popul Environ* **22**, 425–438.

Guagnano, G.A., Stern, P.C., Dietz T. (1995) Influences on attitude-behavior relationships: a natural experiment with curbside recycling. *Environ Behav* **27**, 699–718.

Honkanen, P., Verplanken B. (2004) Understanding attitudes towards genetically modified food: the role of values and attitude strength. *J Consum Policy* **27**, 401–420.

Hunecke, M., Blöbaum, A., Matthies, E., Höger R. (2001) Responsibility and environment. Ecological norm orientation and external factors in the domain of travel mode choice behavior. *Environ Behav* **33**, 830–852.

Intergovernmental Panel on Climate Change [IPCC] (2007) *Climate change 2007: the physical science basis. Summary for policy makers*. IPCC, Geneva, Switzerland.

Joireman, J.A., Lasane, T.P., Bennet, J., Richards, D., Solaimani S. (2001) Integrating social value orientation and the consideration of future consequences within the extended norm activation model of proenvironmental behaviour. *Brit J of Soc Psychol* **40**, 133–155.

Katzev, R.D., Johnson T.R. (1983) A social psychological analysis of residential electricity consumption: the impact of minimal justification techniques. *J Econ Psychol* **3**, 267–284.

Kirchgässner, G. (1992) Towards a theory of low-cost decisions. *Eur J Polit Econ* **8**, 305–320.

Lindenberg, S. (1983) Utility and morality. *Kyklos* **36**, 450–468.

Lindenberg, S., Steg L. (2007) Normative, gain and hedonic goal frames guiding environmental behavior. *J Soc Issues* **63**, 117–137.

Maio, G.R., Olson J.M. (1998) Values as truisms: evidence and implications. *J Pers Soc Psychol* **74**, 294–311.

Moore, D.A., Loewenstein G. (2004) Self-interest, automaticity, and the psychology of conflict of interest. *Soc Justice Res* **17**, 189–202.

Naess, A. (1989) *Ecology, community, and lifestyle: an outline of an ecosophy*. Cambridge University Press, Cambridge.

Nilsson, M., Küller R. (2000) Travel behaviour and environmental concern. *Transport Res D TR E* **5**, 211–234.

Osbaldiston, R., Sheldon K.M. (2003) Promoting internalized motivation for environmentally responsible behavior: a prospective study of environmental goals. *J Environ Psychol* **23**, 349–357.

Pallak, M.S., Cummings N. (1976) Commitment and voluntary energy conservation. *Pers Soc Psychol B* **2**, 27–31.

Rozin, P., Lowery, L., Imada, S., Haidt J. (1999) The CAD triad hypothesis: a mapping between three moral emotions (contempt, anger, disgust) and three moral codes (community, autonomy, divinity). *J Pers Soc Psychol* **76**, 574–586.

Schultz, P.W., Gouveia, V.V., Cameron, L.D., Tankha, G., Schmuck, P., Franěk M. (2005) Values and their relationship to environmental concern and conservation behaviour. *J Cross Cult Psychol* **36**, 457–475.

Schwartz, S.H. (1992) Universals in the content and structure of values: theoretical advances and empirical tests in 20 countries. Pages 1–65 inM. Zanna, editor. *Advances in experimental social psychology*. Academic Press, Orlando.

Steglich, C. (2003) *The framing of decision situations. Automatic goal selection and rational goal pursuit*. University of Groningen (NL), Department of Behavioral and Social Sciences, ICS Dissertation Series, Groningen, The Netherlands.

Stern, P.C. (2000) Toward a coherent theory of environmentally significant behaviour. *J Soc Issues* **56**, 407–424.

Stern, P.C., Dietz T. (1994) The value basis of environmental concern. *J Soc Issues* **50**, 65–84.

Tangney, J.P., Dearing R.I. (2002) *Shame and guilt*. Guilford Press, New York.

Thøgersen, J. (1996) Recycling and morality. A critical review of the literature. *Environ Behav* **28**, 536–558.

Verplanken, B., Holland R.W. (2002) Motivated decision making: effects of activation and self-centrality of values on choices and behaviour. *J Pers Soc Psychol* **82**, 434–447.

**Editor:** Krannich Richard

## Queries

**Q1** Author: Only one correspondence address has been retained as per journal style. Please check.

**Q2** Author: Numbered sections are not allowed as per journal style. Please check that section numbers have been replaced with the correct section name in the text.