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Environmental Values

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Abstract and Keywords

Values are desirable goals that serve as guiding principles in people's life. As such, values can influence multiple beliefs, attitudes, norms, and behaviors simultaneously. Values determine what people attend to, what knowledge becomes cognitively most accessible, how people evaluate various aspects of the situation, and what alternatives are being considered, which in turn affects actual behavior. Different individuals may endorse the same values, but they are likely to prioritize various values differently, resulting in different preferences, beliefs, attitudes, norms, and choices. In this chapter, we discuss relevant value theories and elaborate on four types of values that are particularly relevant in the environmental domain: hedonic, egoistic, altruistic, and biospheric values. Values typically influence behavior indirectly, via behavior-specific beliefs, preferences, attitudes, and norms. Values are particularly influential when they are strongly endorsed, and when they are activated, cognitively supported, central to the self, and part of our self-identity. Values reflect a broad range of motivations (notably hedonic, egoistic, altruistic, and biospheric motivations) and as such differ from ecological worldviews and environmental concerns that focus on environmental motivations.

Keywords: values, social value orientations, hedonic values, egoistic values, altruistic values, biospheric values, self-enhancement values, self-transcendence values, ecological worldviews, environmental concern, environmental beliefs, norms, environmental behavior

Introduction

Many pro-environmental actions involve a conflict between individual interests in the short term and collective interests in the long term: individuals need to restrain egoistic tendencies to benefit the environment (e.g., Nordlund & Garvill, 2003; Samuelson, 1990; Steg, Dreijerink, & Abrahamse, 2005). For example, traveling by car is generally believed to be more comfortable than using public transport, and organic products are often more expensive than regular produce, while environmental quality would improve if individuals reduced car use and bought organic products. Yet, many people do act pro-environmentally, even though this may be associated with higher individual costs in the short term.

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For example, in many countries recycling levels are high, and many people have insulated their homes. Besides the fact that people may benefit from environmental protection, at least indirectly and in the long term, one important reason for this may be that individuals value the environment and want to protect environmental quality. In other cases, people may refrain from pro-environmental actions because they value their comfort higher than the environment: for example, many people prefer to drive rather than to travel by public transport. Indeed, human values are believed to play an important role in pro-environmental actions (Dunlap, Grieneeks, & Rokeach, 1983; Naess, 1989). Some values may inhibit pro-environmental actions, while other values promote such actions.

(p. 82) In this chapter, we first provide a definition of values, and explain why it is important to study relationships between values, beliefs, attitudes, norms, and behavior in the environmental domain. Subsequently, we discuss some prominent theories on values and provide empirical evidence for the significance of values in predicting beliefs, norms, and behavior in the environmental domain. We also describe how values affect environmental behavior, and under which circumstances values are particularly influential. Finally, we discuss conceptual differences between values and other general antecedents of environmental beliefs, attitudes, norms, and behaviors, notably ecological worldviews and environmental concern.

What Are Values?

Schwartz (1992) defines values as “desirable goals, varying in importance, that serve as guiding principles in people’s lives” (p. 21). This definition highlights four key features of values. First, values reflect general beliefs concerning the desirability or undesirability of certain end-states, such as equality, ambition, or environmental quality. As such, values have an oughtness quality (Feather, 1995). Second, values are abstract and transcend specific situations, that is, values may affect beliefs, attitudes, norms, intentions, and behavior of different kinds. Values are relatively stable over time, whereas specific beliefs, attitudes, and norms can change more easily (Feather, 1995; Gardner & Stern, 2002; Rokeach, 1973). This implies that changes in (the priority of) values are likely to result in changes in a wide range of behavior-related beliefs and norms, intentions, and behaviors simultaneously. This feature makes it particularly relevant to understand the value basis of pro-environmental beliefs, attitudes, norms, intentions, and actions. Third, values serve as a guiding principle for the selection or evaluation of behavior, people, and events. Values determine what people attend to, what knowledge becomes cognitively most accessible, how people evaluate various aspects of the situation, and what alternatives are being considered. Also, values function as criteria or frameworks against which present experience can be tested (Feather, 1995). Fourth, individuals prioritize the importance of different values. Although values are culturally shared and different individuals may endorse the same values, they are likely to prioritize various values differently. This implies that when people face conflicting values, they will base their choice on the values that they consider the most important to act upon, resulting in different choices for people who prioritize their values differently. For example, individuals who prioritize environmental val-

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ues are more likely to buy organic produce than those who prioritize egoistic values, even though both may endorse environmental values. So, it is the relative importance of values that matters most.

Value Theories

Two prominent theories on values that are most widely used in the environmental domain are the theory on social value orientations (e.g., Messick & McClintock, 1968) and Schwartz's (1992) value theory. We briefly introduce both theoretical frameworks below. Next we explain the significance of biospheric values and explain why biospheric values are particularly relevant for understanding environmental beliefs, norms, intentions, and behavior. Furthermore, we discuss which values are most important to understand environmental action, and review relevant empirical evidence.

Social Value Orientations

Messick and McClintock (1968) proposed that choices in social dilemma situations depend on social value orientations. A social dilemma is a situation in which individual and collective interests are at odds. Many environmental decisions involve a social dilemma, as our examples in the introduction illustrate. For example, it is in one's individual interest to use a car rather than to travel by public transport, but collectively we would be better off if all people drove less. Also, an individual may prefer to take long showers, while society as a whole would be better off if all would save water and energy by reducing showering time. The extent to which people are likely to act in line with the collective interest is believed to depend not only on the costs and benefits of different alternatives, but also on social value orientations. Social value orientations reflect individual differences in which goals are prioritized (viz. individual or collective), which in turn influence the choices people make in social dilemma situations. Four social value orientations can be distinguished (but more simple as well as more differentiated distinctions have also been proposed in the literature) that differ in preferences for distributions of outcomes for oneself and others or the collective (e.g., Liebrand, 1984):

1. individualistic: preference to maximize own outcomes with no concern for the outcomes of others

(p. 83) **2.** competitive: preference to maximize own outcomes relative to the outcomes of others

3. altruistic: preference to maximize the outcomes of others

4. cooperative: preference to maximize joint outcomes

The four value orientations are often combined into two general, overarching social value orientations: proself values, in which people are concerned particularly with their own interests (ad. 1 and 2) versus prosocial values, in which individuals are concerned mainly with the interests of others (ad. 3 and 4).

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Some studies found that prosocial values were positively related, while proself values were negatively related, to pro-environmental preferences (Van Vugt, Meertens, & Van Lange, 1995) and intentions (Joireman, Lasane, Bennett, Richards, & Solaimani, 2001). Furthermore, preferences for traveling by public transport or for carpooling depended more strongly on the likelihood of congestion for those with strong proself values as compared to those with strong prosocial values, suggesting that possible negative individual consequences more strongly influenced preferences for choices in the collective interest of those with strong proself values than those with strong prosocial values (Van Lange, Van Vugt, Meertens, & De Ruiter, 1998). Also, egoistic environmental consequences appeared to be more salient to individuals with strong proself values, while social-altruistic environmental consequences appeared to be more salient to those who strongly endorsed prosocial values (Gärling, Fujii, Gärling, & Jakobsson, 2003; Joireman et al., 2001). However, relationships between social value orientations and environmental beliefs, preferences, and intentions are generally weak, and sometimes even not significant. For example, social value orientations were not significantly related to preferences for commuting by car versus public transport (Joireman, Van Lange, & Van Vugt, 2004) and environmental behavior (Joireman et al., 2001). In sum, empirical evidence of the relevance of social value orientation for pro-environmental beliefs, preferences, and actions is mixed.

Schwartz's Value Theory

Schwartz (1992, 1994) developed one of the most widely used value typologies. Schwartz's value theory is based on earlier work by Rokeach (1973), who aimed to develop a value hierarchy based on a universal set of values. Rokeach (1973) argued that a distinction should be made between instrumental values reflecting beliefs concerning desirable means (e.g., being honest, or "honesty") and terminal values reflecting preferable end-states of existence (e.g., a world at peace). Schwartz (1992) further developed and extended Rokeach's universal value typology and proposed a value typology comprising 56 values. However, Schwartz's (1992) typology no longer made a distinction between instrumental and terminal values, as he did not find empirical support for this distinction.

Schwartz (1992) found that values can be grouped into 10 value clusters that describe individual differences in value priorities: conformity, tradition, universalism, benevolence, power, achievement, hedonism, stimulation, self-direction, and security. The first four value clusters refer to social values, while the other six clusters reflect individualistic values. The 10 value clusters can be plotted in a two-dimensional space (see Figure 5.1). The first dimension distinguishes self-enhancement from self-transcendence values, which is similar to the distinction between proself and prosocial values in the social value orientation framework described above. The second dimension distinguishes openness to change from conservation values, reflecting whether individuals are open to new things and ideas versus whether they have a preference for tradition and conformity. Values in the same value cluster are prioritized in a similar way, while values belonging to clusters that are wide apart from each other are typically prioritized very differently. The closer together values are in this two-dimensional space, the more compatible they are, while values that

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are wide apart are more likely to conflict. When values conflict in a particular situation, people are most likely to act upon the values they prioritize.

Schwartz's value typology has been tested and validated in many countries and cultures around the world (e.g., Collins, Steg, & Koning, 2007; Schwartz, 1992, 1994; Schwartz & Sagiv, 1995; Spini, 2003), and the majority of the values demonstrate high cross-cultural consistency of meaning (Schwartz & Sagiv, 1995). This implies that the structure of values is the same in different cultures and countries; however, people may differ in the way they prioritize different values.

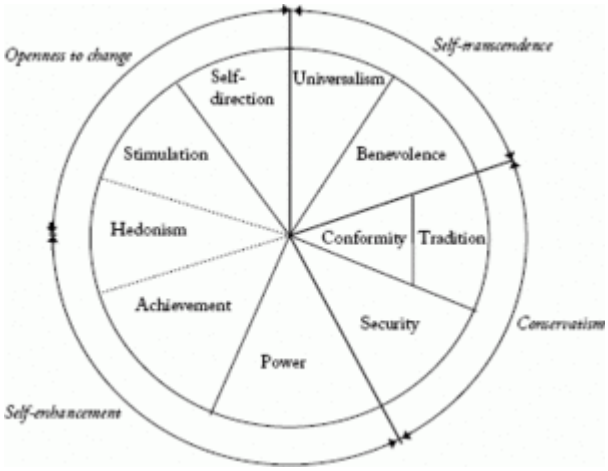

Figure 5.1 Schwartz's value typology: 10 value clusters in a two-dimensional space.

Studies in the environmental domain generally revealed that environmental beliefs, attitudes, norms, intentions, and actions are particularly related to the self-enhancement and self-transcendent values: individuals who strongly endorse (p. 84) self-transcendent values are more likely to have pro-environmental beliefs and norms and to act pro-environmentally, while the opposite is true for those who strongly endorse self-enhancement values (e.g., Collins et al., 2007; Kalof, Dietz, Stern, & Guagnano, 1999; Nordlund & Garvill, 2002, 2003; Schultz, Gouveia, Cameron, Tankha, Schmuck, & Franěk, 2005; Stern, Dietz, & Guagnano, 1998; Stern, Dietz, Kalof, & Guagnano, 1995; Thøgersen & Ölander, 2002; Stern, 2000). Thøgersen and Ölander (2003) also found that environmental-friendly behaviors are more likely to spread to other areas of one's consumption pattern among those with strong self-transcendence values, indicating that so-called spillover effects are more likely when self-transcendent values are strong. A few studies found (weak) relationships between openness to change and conservation values and pro-environmental beliefs, norms, intentions, and behavior (e.g., Karp, 1996; Kalof et al., 1999; Poortinga, Steg, & Vlek, 2004; Schultz & Zelezny, 1999; Stern et al., 1998). For example, the more strongly individuals endorsed openness-to-change values, the more energy they used for transportation purposes (Poortinga et al., 2004). Those who strongly endorse conservation values were less likely to be concerned about environmental problems (Schultz & Zelezny, 1999) and to be vegetarians (Kalof et al., 1999), and less willing to sacrifice to benefit the environment (Stern et al., 1998). In sum, self-enhancement and self-transcen-

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dence values seem to be particularly relevant to understand beliefs, preferences, attitudes, norms, and behavior in the environmental domain.

Biospheric Values

Recently, various environmental psychologists suggested that it is important to examine whether biospheric values can be distinguished as a separate cluster of self-transcendence values, next to altruistic values (e.g., Stern & Dietz, 1994; De Groot & Steg, 2008). These scholars proposed that biospheric values may play an important role in encouraging pro-environmental beliefs, norms, and behaviors. Biospheric values emphasize the intrinsic value of nature and the environment. The intrinsic value of nature has long been advocated within environmental ethics (e.g., Leopold, 1949; Naess, 1989; Reid, 1962; Singer, 1975), but the significance of biospheric values was not studied systematically until recently. Biospheric values reflect a concern with the quality of nature and the environment for its own sake, without a clear link to the welfare of other human beings. As such, they differ from altruistic values that reflect a concern with the welfare of other human beings. Both altruistic and biospheric values reflect self-transcendence or prosocial values. This means that altruistic and biospheric values are expected to correlate positively, that is, those who endorse altruistic values are also likely to endorse biospheric values, and vice versa. Also, in many cases both altruistic and biospheric values are likely to promote pro-environmental beliefs, norms, and actions, because such actions generally benefit the (p. 85) well-being of others and the biosphere. However, in some situations altruistic and biospheric values may conflict, for example, when one has to decide to vote for a green or a social party, or to buy fair-trade or organic products.

Recent studies revealed that altruistic and biospheric values can indeed be distinguished empirically (De Groot & Steg, 2007, 2008, 2010; Grønhøj & Thøgersen, 2009; Nilsson, von Borgstede, & Biel, 2004; Steg et al., 2005; Steg, De Groot, Dreijerink, Abrahamse, & Siero, 2011). Altruistic and biospheric values are positively correlated (e.g., De Groot & Steg, 2007, 2008; Nilsson et al., 2004), which is in line with Schwartz's value theory, as both reflect self-transcendence values. However, not surprisingly, biospheric values are generally more predictive of pro-environmental beliefs, norms, and actions than are altruistic values (e.g., De Groot & Steg, 2007, 2008; Nilsson et al., 2004; Steg et al., 2005). More important, when choices affect altruistic and biospheric values differently, and thus when altruistic and biospheric values conflict in a particular situation, they predict intentions differently, in the expected direction. For example, De Groot and Steg (2008) examined relationships between values and likelihood of donating money to either environmental or humanitarian organizations. Respondents were forced to make a choice between donating 10 euros to an environmental or a humanitarian organization. Respondents were offered five choice sets, each comprising one humanitarian and one environmental organization that were similar with regard to (internationalization) of aid and publicity. A brief description of the mission of each organization was added. It appeared that people with strong biospheric values were more likely to donate money to environmental rather than humanitarian organizations, while those with strong altruistic values were more likely to

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donate money to humanitarian rather than environmental organizations (De Groot & Steg, 2008).

In sum, recent studies have suggested that it is indeed important to make a distinction between altruistic and biospheric values. First, even though altruistic and biospheric values are correlated, they can be distinguished empirically. Second, biospheric values appear to be more predictive of pro-environmental beliefs, intentions, and behaviors than are altruistic values. Third, when altruistic and biospheric values conflict, strong biospheric values promote pro-environmental choices, while strong altruistic values make pro-environmental choices less likely.

Based on the above, it has been proposed that three types of values are particularly relevant to understanding pro-environmental beliefs, norms, intentions, and actions: egoistic values, reflecting a key concern with individual outcomes, altruistic values, reflecting a concern with the welfare of others, and biospheric values, reflecting a concern with nature and the environment (see also Stern, Dietz, & Kalof, 1993; Steg et al., 2005; De Groot & Steg, 2007, 2008). Individuals who strongly endorse egoistic values will particularly consider costs and benefits of environmental actions for them personally, and act pro-environmentally when the perceived benefits of such actions exceed the perceived costs (and vice versa). For example, a person who strongly endorses egoistic values is likely to act pro-environmentally if the pro-environmental option also happens to be the cheapest or most comfortable option. In contrast, individuals who strongly endorse altruistic values will focus on the perceived costs and benefits of actions for other people. They may, for example, engage in pro-environmental actions, such as purchasing organic produce, when this benefits the health of their children. Finally, individuals who strongly endorse biospheric values will mainly base their choices on the perceived costs and benefits of actions for nature and the environment, and act pro-environmentally when these actions are likely to reduce environmental problems. Although all three value types provide a distinct basis for pro-environmental actions, and thus all may promote pro-environmental beliefs and choices, studies generally reveal that individuals who more strongly endorse altruistic and particularly biospheric values have more positive pro-environmental beliefs and norms, and are more likely to engage in pro-environmental behavior than those who strongly endorse egoistic values (e.g., Honkanen & Verplanken, 2004; De Groot & Steg, 2008, 2010; Karp, 1996; Nilsson et al., 2004; Steg et al., 2005; Steg et al., 2011; Stern et al., 1998), probably because many pro-environmental behaviors have individual disadvantages, as explained at the very start of this chapter.

The significance of biospheric values implies that environmental considerations are part of people's morality and that both human and nature rights are protected by values (cf. Lindenberg & Steg (in press)). Inglehart (1977) proposed that the concern about environmental issues in Western societies is due to the emergence of so-called post-materialistic values in post-industrial societies. The basic idea of Inglehart's (1977) value revolution theory is that **(p. 86)** improvements in standards of living and education levels in Western societies resulted in improved physical and economic security, which makes it more likely that basic materialistic values are fulfilled. Because of this, individuals can prioritize post-

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materialistic values that emphasize autonomy and self-expression. Inglehart (1977) assumed that people will prioritize post-materialistic values only when materialistic values are fulfilled and survival needs can be taken for granted. This implies that biospheric values will emerge only when basic needs are fulfilled and that biospheric values are more likely to emerge in Western industrialized societies where affluent levels are high, while poor people probably cannot afford to support biospheric values since their basic levels of subsistence are not fulfilled. However, recent studies found support for the distinction between altruistic and biospheric values in non-Western countries (e.g., Mexico and Indonesia; Helbig, 2010; Hiratsuka, 2010) as well, even among relatively poor populations (Helbig, 2010). This suggests that the emergence of biospheric values is not mainly a product of a post-materialist cultural shift, but rather results from multiple sources, such as observation of or information on environmental degradation (cf. Brenchin and Kempton, 1994), or a stronger reliance on environmental systems. This implies that biospheric values may be important and a separate cluster of values in developing countries and cultures that did not face a post-materialism shift as well.

Hedonic Values

Above we argued that studies generally revealed that values from the self-enhancement versus self-transcendence value dimension are most strongly related to environmental beliefs, preferences, norms, and actions. Also, we showed that when studying environmental issues, it is important to make a distinction between altruistic and biospheric values, representing subclusters of self-transcendence values.

It may be useful to distinguish two types of self-enhancement values to understand environmental beliefs, attitudes, norms, and actions as well. This proposition is based on two lines of research. First, goal framing theory (Lindenberg & Steg, 2007) proposes that (environmental) behavior is guided by three overarching goals: hedonic goals “to feel better right now,” gain goals “to improve one’s resources,” and normative goals “to act appropriately.” Goal framing theory suggests that one goal is focal (i.e., one goal is strongest) in a particular situation and influences preferences and decisions most, while the other goals are in the background and influence the strength of the focal goal. A priori, hedonic goals are strongest, while normative goals are most in need of external support. Values determine the likelihood that a particular goal is focal in any situation, as they influence the extent to which goals are chronically accessible. This implies that normative goals to act appropriately are more likely to be focal in a particular situation when people strongly endorse altruistic or biospheric values, while gain goals are more likely to be focal when people strongly endorse egoistic values. In a similar vein, hedonic goals are more likely to be focal when people strongly endorse hedonic values. So, based on goal framing theory, we would expect that hedonic values are an important predictor of environmental beliefs, attitudes, norms, and behavior, as hedonic goals are more likely to be activated among those who strongly endorse hedonic values.

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Second, research on the hedonic value of the possession and use of consumption goods (which are typically associated with environmental impact and are thus examples of environmentally harmful behavior) also suggests that environmental behavior may be rooted in hedonic values. Indeed, many material products with environmental impact, such as cars, are purchased and used because of their hedonic value (e.g., Dittmar, 1992; Hirschman & Holbrook, 1982), and because people derive pleasure from using these products (Steg, Vlek, & Slotegraaf, 2001; Steg, 2005; Gatersleben, 2007). It is likely that hedonic consumption is rooted in hedonic values, as those with strong hedonic values are more likely to appreciate hedonic consequences of behavior. So, both goal framing theory and theories on consumer behavior, in particular the theory on the meaning of material possessions (e.g., Dittmar, 1992), suggest that it may be important to distinguish two types of self-enhancement values to understand environmental beliefs, attitudes, norms, and actions: hedonic and egoistic values.

There is some empirical evidence for the significance of hedonic values in the environmental domain. For example, Honkanen and Verplanken (2004) found that positive attitudes toward genetically modified (GM) food, and intention to buy GM food, were more likely among those who strongly endorsed hedonic values, and less likely among those who strongly endorsed biospheric values. More recently, Steg and colleagues (2012) systematically examined whether it is worthwhile to include hedonic values in studies in the (p. 87) environmental domain. First, they found that hedonic values can indeed be clearly distinguished empirically from egoistic values. Not only studies in the Netherlands, but also in Japan, Indonesia, and Mexico validated the distinction between hedonic, egoistic, altruistic, and biospheric values (Helbig, 2010; Hiratsuka, 2010), indicating that hedonic and egoistic values form distinct value clusters. Hedonic and egoistic values were correlated, which is in line with Schwartz's (1992) value typology, as both reflect self-enhancement values. In many cases, hedonic values appeared to be more strongly and negatively related to environmental beliefs, preferences, norms, and actions than were egoistic values, suggesting that particularly hedonic values may inhibit pro-environmental actions (Steg et al., 2012). Furthermore, Steg et al. (2012) found that the four types of values were systematically and consistently related to value-congruent preferences. In this study, individuals were asked about their preference for a series of restaurants that systematically varied in hedonic, egoistic, altruistic, and biospheric aspects. Individuals who strongly endorsed hedonic values were more likely to base their choice of restaurant on the hedonic attribute varied in the restaurant descriptions (i.e., whether the food served was tasty), while those who strongly endorsed altruistic values more strongly based their choice on the working conditions in the restaurant (representing the altruistic attribute included in the description of the restaurants) and those who endorsed biospheric values particularly considered whether organic products were served (i.e., the biospheric attribute). So, preferences were systematically linked to values; people particularly considered the characteristic of the restaurant that was congruent with their values. Together, these studies indicate that it is indeed important to include hedonic values in studies on environmental beliefs, preferences, norms, and actions.

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How Do Values Affect Behavior?

We indicated above that values appear to be correlated with various psychological constructs including preferences, beliefs, norms, intentions, and even behavior. But how do values affect behavior? Do they affect behavior directly, or mainly indirectly, via, for example, beliefs and preferences? Value theories generally assume that values are general beliefs reflecting stable dispositions that structure and guide specific beliefs, norms and attitudes that are more likely to change over time (Feather, 1995; Rokeach, 1973). These beliefs, norms, and attitudes in turn affect behavior. So, it is assumed that the effect of values on behavior is mediated by more specific beliefs, attitudes, and norms. Indeed, various studies showed that values mostly influence behavior indirectly, via behavior-specific beliefs, attitudes, and norms (e.g., De Groot, Steg, & Dicke, 2008; Gärling et al., 2003; Kalof et al., 1999; Nordlund & Garvill, 2002, 2003; Nilsson et al., 2004; Poortinga et al., 2004; Steg et al., 2005). For example, Nordlund and Garvill (2003) found that values were related to awareness of environmental problems and personal norms (that is, feelings of moral obligation) to reduce car use, while personal norms were the only significant predictor of willingness to reduce car use, suggesting that the effects of values on willingness to reduce car use is mediated by behavior-specific beliefs and norms. Similarly, Steg et al. (2005) found that values (in particular biospheric values) predicted general awareness of environmental problems (i.e., NEP; we explain this concept in the section "Distinction Between Values, Ecological Worldviews, and Environmental Concern") and behavior-specific beliefs (in this case awareness of consequences of energy problems, feelings of responsibility for energy problems, and personal norms to reduce energy use) but that personal norms were the only significant predictor of acceptability of energy policies. So behavior-specific beliefs and norms mediated the effects of values on non-activist behavior in the public sphere as well (in this case acceptability of energy policies; cf. Stern, 2000).

However, some studies showed that values can affect behavior directly as well, even when mediating variables such as specific beliefs, attitudes, and norms are controlled for (e.g., Schultz & Zelezny; 1998; Stern, Dietz, Abel, Guagnano, & Kalof, 1999; cf. Stern, 2000). For example, Schultz and Zelezny (1998) found that self-transcendence values were significantly related to self-reported pro-environmental behavior, even when general awareness of environmental problems and feelings of responsibility for environmental problems in general were controlled for. However, these studies typically measured general beliefs toward the environment, while studies that showed that values affect environmental behavior indirectly typically included behavior-specific or context-specific beliefs, attitudes, and norms. This suggests that the influence of values on behavior is most likely to be mediated by behavior-specific beliefs, attitudes, and norms, but not by general environmental beliefs.

(p. 88) It is generally believed that values, and particularly values that are strongly endorsed by a person, direct attention to value-congruent information, which in turn affects beliefs and norms related to pro-environmental action and (willingness to) act pro-environmentally (Stern & Dietz, 1994; Stern et al., 1995; Nordlund & Garvill, 2002, 2003). Val-

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ues affect the way a person perceives a situation so that some actions and potential outcomes are seen as attractive whereas other actions are seen as aversive (Feather, 1995).

Values are more influential when they are activated in the particular situation. For example, Verplanken and Holland (2002) found that people were more likely to acquire information on the environmental performance of a TV set and, in turn, to actually choose a TV set with a better environmental performance when biospheric values were activated, but only when they strongly endorsed biospheric values in the first place. In this study, biospheric values were activated via a scrambled word task in which participants had to make sentences out of words presented to them, where many of the resulting sentences happened to refer to environmental issues; the true aim of the task was masked via a cover story. This suggests that priming particular values to make them salient in the particular situation enhances attention to and the weight of information related to these values. This increases the likelihood of value-congruent actions, but only when the relevant values are central to the particular person. On the other hand, priming values is less likely to promote pro-environmental preferences and choices when people do not strongly endorse these values in the first place. Verplanken and Holland (2002) also found that enhancing a self-focus (in this case by circling self-related words in a text, such as “I,” “me,” “my,” “mine” as opposed to “the,” “it,” “a,” “an”) activates central values, which promotes value-congruent actions. More specifically, they found that people were more likely to donate money to a humanitarian organization (i.e., Amnesty International) when self-focus was high and when participants strongly endorsed altruistic values. However, a self-focus did not significantly increase donations to a humanitarian organization when people did not strongly endorse altruistic values, suggesting that a self-focus particularly promotes value-congruent actions among those who strongly endorse the relevant values. Together, these results indicate that strong values promote value-congruent actions, especially when the relevant values are activated and/or when people are self-focused. When altruistic or biospheric values are linked to or integrated in our self-concept, acting pro-environmentally can make us feel like a moral person (rather than a selfish person), which is likely to promote pro-environmental actions as people like to see themselves as morally right (Aronson, 1969; Bolderdijk, Steg, Geller, Lehman, & Postmes, 2012).

Maio and colleagues (Maio & Olson, 1998; Maio, Olson, Allen, & Bernard, 2001) argued that making values cognitively more accessible is not sufficient to promote value-congruent actions. Rather, values need to be cognitively supported; that is, individuals should be able to provide reasons for their values. Maio et al. (2001) argued that value-incongruent actions may result from seeing values as truisms, where people lack cognitive support for values. In such situations, values are vulnerable to change when they are challenged, because people have no clear rationale for defending them. In contrast, when values are cognitively supported, they are perceived to be more rational and activated and people can generate counterarguments when these values are challenged, thereby counterbalancing situational factors to engage in value-incongruent actions. For example, when the value helpfulness is cognitively supported and activated, people may help another in need even though this may be costly to them, while they are less likely to do so when this value is not cognitively supported. In sum, values are most strongly related to specific beliefs,

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attitudes, norms, and consequently to behaviors when they are strongly endorsed, and when they are activated, part of one's self-concept, and cognitively supported.

When values are closely linked to or integrated in one's self concept, they may become an important part of one's identity, that is, people may mention values to describe themselves (Hitlin, 2003). Indeed, research has shown that an environmental identity, that is, the extent to which individuals indicate that environmentalism is a central part of the self, correlates strongly with biospheric values. Moreover, relationships between biospheric values and environmental behavior are mediated by environmental identity: values were no longer significantly related to environmental behavior when environmental identity was controlled for (Van der Werff, Steg, & Keizer, 2012), suggesting that values affect behavior indirectly, via self-identity. When people strongly endorse biospheric values, it is likely that these values become part of one's self-identity, resulting in a strong environmental (p. 89) identity, which in turn increases the likelihood of pro-environmental actions.

Distinction Between Values, Ecological Worldviews, and Environmental Concern

Besides values, various other general antecedents of environmental behavior have been studied, notably worldviews and environmental concern. Like values, worldviews and environmental concern are also believed to influence a wide range of specific beliefs, attitudes, norms, and behaviors. It is important to make a clear conceptual distinction between these different general antecedents of environmental behavior, to avoid misinterpretations.

It is commonly understood that values are central and relatively stable elements of one's personality that reflect the relative importance of different guiding principles in life. The previous sections demonstrated that values reflect multiple motivations, that is, they reflect hedonic (e.g., pleasure), egoistic (e.g., power), altruistic (e.g., equality), as well as biospheric (e.g., unity with nature) motivations (Steg et al., 2011). In contrast, ecological worldviews and environmental concern reflect less general beliefs and focus on environmental issues (see Steg et al., 2011). More specifically, ecological worldviews reflect primitive beliefs (i.e., basic truths) on relationships between humans and the environment. The most popular conceptualization of ecological worldviews is the New Environmental (or: Ecological) Paradigm (NEP; Dunlap & Van Liere, 1978; Dunlap, Van Liere, Mertig, & Jones, 2000), which reflects people's beliefs about humanity's ability to upset the balance of nature, the existence of limits to growth for human societies, and humanity's right to rule over the rest of nature.

Environmental concern refers to the evaluation of environmental issues, including beliefs on the need for environmental protection; the severity, likelihood, and immediacy of environmental problems; the seriousness of environmental problems; worries about environmental problems; general attitudes toward the environment; the importance of conse-

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quences of environmental problems for oneself, others, and the biosphere; and affective responses to environmental problems (e.g., Axelrod & Lehman, 1993; Baldassare & Katz, 1992; Bamberg, 2003; Biel & Nilsson, 2005; Fransson & Gärling, 1999; Gatersleben, Steg, & Vlek, 2002; Maloney & Ward, 1973; Schultz, 2000, 2001; Schultz et al., 2005; Schultz, Shriver, Tabanico, & Khazian, 2004; Stern et al., 1993; Weigel & Weigel, 1978).

So, values reflect a broader range of motivations and are more encompassing than ecological worldviews and environmental concern, as values reflect multiple motivations, and not only environmental considerations. Based on this, one could argue that values should affect ecological worldviews and environmental concern, which in turn affect behavior-specific beliefs, norms, and environmental actions. In fact, this is exactly what is proposed by the value-belief-norm theory of environmentalism (Stern, 2000; Stern et al., 1999). Indeed, studies have shown that values predict NEP and environmental concern (De Groot & Steg, 2008; Schultz et al., 2005; Schultz & Zelezny, 1999; Steg et al., 2005). However, a recent study by Steg et al. (2011) showed that egoistic, altruistic, and biospheric values predicted a significantly higher proportion of the variance in personal norms toward energy conservation and in environmental activism, respectively, than did ecological worldviews and environmental concern. This suggests that values are better predictors of pro-environmental norms and intentions than are ecological worldviews and environmental concerns, probably because values reflect a wider range of motivations (rather than only environmental concerns). So, although worldviews and environmental concerns may be rooted in values, they do not necessarily fully mediate the effects of values on environmental beliefs, norms, and actions, and values are generally more predictive of pro-environmental beliefs, norms, intentions and behavior than are ecological worldviews and environmental concern.

Future Directions

In this chapter, we discussed the importance of values in understanding and promoting pro-environmental behavior. We indicated which values are particularly important in the environmental domain, and how values affect environmental actions. Also, we described under which circumstances values are particularly predictive of environmental beliefs, norms, intentions, and behavior, and indicated important conceptual differences between values and other types of general antecedents of environmental beliefs, attitudes, norms, and behaviors, notably ecological worldviews and environmental concern. Throughout the chapter, we discussed relevant empirical evidence on these topics.

Although a rich body of literature is available on values and environmental beliefs, attitudes, norms, and behavior, there are some important topics to be addressed in future studies. First, studies revealed (p. 90) that particularly biospheric values strengthen pro-environmental beliefs, attitudes, norms, and action. An important topic for future research is therefore how biospheric values can best be strengthened and activated to enhance pro-environmental actions. Such studies can build on the important work by Verplanken and Holland (2002) and Maio et al. (Maio & Olson, 1998; Maio et al., 2001) dis-

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cussed in this chapter. Second, future studies could examine under which circumstances values are more likely to affect behavior indirectly, and when direct influences are likely as well. We suggested that values may be less likely to affect behavior directly when behavior-specific or context-specific (rather than general) beliefs, attitudes, and norms are controlled for, but this assumption needs to be tested empirically. A third important topic for future research is to examine how people manage possible conflicts between values, such as conflicts between hedonic or egoistic values with biospheric values. Which factors affect the likelihood that one value will be prioritized over other values, and how can we promote that people act upon their biospheric values when they strongly endorse such values? We hope to be able to provide answers to these questions in the coming years.

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