

University of Groningen

Mean or green?

Groot, Judith Irene Maria de

IMPORTANT NOTE: You are advised to consult the publisher's version (publisher's PDF) if you wish to cite from it. Please check the document version below.

Document Version

Publisher's PDF, also known as Version of record

Publication date:

2008

[Link to publication in University of Groningen/UMCG research database](#)

Citation for published version (APA):

Groot, J. I. M. D. (2008). *Mean or green? value orientations, morality and prosocial behaviour*. [Thesis fully internal (DIV), University of Groningen]. [s.n.].

Copyright

Other than for strictly personal use, it is not permitted to download or to forward/distribute the text or part of it without the consent of the author(s) and/or copyright holder(s), unless the work is under an open content license (like Creative Commons).

The publication may also be distributed here under the terms of Article 25fa of the Dutch Copyright Act, indicated by the "Taverne" license. More information can be found on the University of Groningen website: <https://www.rug.nl/library/open-access/self-archiving-pure/taverne-amendment>.

Take-down policy

If you believe that this document breaches copyright please contact us providing details, and we will remove access to the work immediately and investigate your claim.

Downloaded from the University of Groningen/UMCG research database (Pure): <http://www.rug.nl/research/portal>. For technical reasons the number of authors shown on this cover page is limited to 10 maximum.

Chapter 6

Value orientations in the field

This chapter is based on:

De Groot, J. I. M. & Steg, L. (2006a). Notes and Comments. The role of value orientations in evaluating Quality of Life-effects of a transport pricing policy. *Transportation Research Part D*, 11, 160-165.

Abstract. Policy makers seem reluctant to implement restrictive policies aimed at reducing car use, for it is believed that such measures will reduce individual's quality of life. This study examines relationships between value orientations and perceived quality of life changes when the cost of car use is doubled. An Internet based survey shows that people expect only minor decreases in overall quality of life when costs of car use increases. People with a strong egoistic value orientation evaluate quality of life consequences of the policy more pessimistically than people who have a weak egoistic value orientation. On the other hand, people with a strong altruistic or biospheric value orientation are more optimistic compared to those with weak altruistic or biospheric value orientations. Practical implications for transport policies are discussed.

6.1 Introduction

It is hard to imagine a world without cars. For many, car ownership and car use is seen as a necessity instead of a luxury good. It's the envy of most developing nations and, as incomes rise, most nations observe increasing sales and use of cars (Environmental Defence, 2002). However, the current transport system is not sustainable in the long term, especially given the many environmental problems caused by traffic and transport (Geurs & Van Wee, 2000; Organisation for Economic Co-operation and Development [OECD], 1997). To overcome problems caused by car traffic, such as environmental pollution, noise and traffic congestion, reductions in car use are needed. However, most individuals prefer to travel by car because it is perceived to be more convenient, independent, flexible, comfortable and fast than alternative modes of transport (Anable & Gatersleben, 2005; Faishal Ibrahim, 2003; Hagman, 2003; Hiscock, Macintyre, Kearns, & Ellaway, 2002; Steg, 2003; Steg & Gifford, 2005). Consequently, we believe that car use contributes to individuals' quality of life, and reductions in car use may threaten quality of life. In this chapter, we examine how a transport pricing policy affects individual's quality of life. Furthermore, we investigate whether expected quality of life-changes are related to groups differing in egoistic, altruistic and biospheric value orientations.

6.1.1 Sustainability and quality of life

Reductions in the level of car use are needed to reach a more sustainable transport system (Greene & Wegener, 1997; OECD, 1996). However, it appears not to be easy to reduce car travel. In general, policies that seriously affect individual freedom to move by car are not acceptable to the public (Jakobsson, Fujii, & Gärling, 2000). Policy makers seem reluctant to implement such policies, for it is believed that such measures will reduce individual quality of life (QoL; De Groot & Steg, 2006b; Steg & Gifford, 2005). QoL may be defined as the extent to which important values and needs are fulfilled in people's lives (Diener, 1995; Diener, Suh, Lucas, & Smith, 1999). Because it is generally accepted that sustainable development implies balancing environmental, social and economic qualities now and in the future (e.g., OECD, 1996; World Commission on Environment and Development [WCED], 1987), policies that seriously decrease individual QoL can hardly be called sustainable. Therefore, it is important to assess possible QoL-effects of (transport) policies aimed to reduce car use. Policies are likely to be more acceptable, feasible and effective if they do not threaten individual QoL (Steg & Gifford, 2005).

Research on QoL and sustainability reveals a list of 22 QoL-indicators (e.g., Poortinga, Steg, & Vlek, 2004; see Table 6.1). They assume that these QoL-indicators point at aspects of QoL that are important to consumers. The list is based on research and theories on values and needs in relation to sustainable development (Gatersleben, 2000; Poortinga, et al., 2004). These indicators can be used to assess QoL-consequences of environmental (and transport) policies now or in the future by examining to what extent policies would affect these 22-indicators. The indicators proved to be helpful in assessing changes in QoL resulting from environmental policies in different domains including transport behaviour and car use (Gatersleben, 2000; Poortinga et al., 2004; see Steg & Gifford, 2005 for a review).

Theories of QoL and human well-being typically assume that a general set of QoL-indicators can be defined that does not differ in time or between cultures (Maslow, 1954, Max-Neef, 1992; Rokeach, 1973). However, the relative importance of these indicators may vary among groups. Indeed, the extent to

which people evaluate the 22 QoL-indicators as important to their lives appears to depend on socio demographics, such as gender (Poortinga, Wiersma, Steg, Vlek, Noorman, Moll, & Schoot Uiterkamp, 2001), household type (Poortinga et al., 2001; Gatersleben, 2000), and income (Gatersleben, 2000). Furthermore, how transport policies affect QoL-indicators varies between different groups. For example, a study of Jakobsson et al. (2000) showed that low income groups evaluated road pricing as less acceptable than did high income groups because road pricing was believed to reduce their freedom to move and was perceived to be unfair. As shown in Table 6.1, freedom and justice are considered to be important QoL-indicators. Other studies confirm that QoL of low income groups probably is more negatively affected by financial measures than QoL of high income groups (Black, 2000; Poortinga, Steg, Vlek, & Wiersma, 2003). Thus, which changes people expect when implementing sustainable transport policies may differ among various groups in society. Groups may be categorised based on socio demographics, but also on general antecedents of behaviour, such as values and beliefs.

6.1.2 Values and sustainability

In social and environmental psychology, various studies have been conducted to examine the relationship between value orientations, beliefs, and behaviour (Gärling, Fujii, Gärling, & Jakobsson, 2003; Joireman, Lasane, Bennet, Richards, & Solaimani, 2001; Nordlund & Garvill, 2002; Schultz & Zelezny, 1998; Stern & Dietz, 1994; Stern, Dietz, Abel, Guagnano, & Kalof, 1999). Values are considered to be important in this respect because they are general and therefore affect various beliefs and behaviours. Schwartz (1992; 1994) defines a value as “a desirable trans-situational goal varying in importance, which serves as a guiding principle in the life of a person or other social entity (p.21).” Values serve as a guiding principle for the selection and evaluation of behaviour, people and events (Rokeach, 1973; Schwartz, 1992). Therefore, we assume that values are also related to the evaluation of effects of policies on individual QoL.

Values do not stand on their own. They are related to each other and may be combined into value orientations. In this chapter, we define value orientations as a set of values that are highly related to each other and form a consistent

factor that can be interpreted univocally on theoretical grounds. Because people varying in value orientation may weight and evaluate consequences of policies on QoL differently, it is important to study how transport policies affect QoL of groups differing in value orientations. Based on this, recommendations may be given on how to adjust or supplement policies as to reduce negative impacts on QoL for various groups (for example, by emphasising the environmental advantages of using public transport instead of the car for people who strongly value the environment), and, consequently, to guarantee effective and efficient decision making.

Stern and colleagues (Dietz, Stern, & Guagnano, 1998; Stern, 2000; Stern & Dietz, 1994; Stern, Dietz, & Kalof, 1993; Stern, Dietz, & Guagnano, 1998) argue that three different value orientations affect environmental beliefs and behaviour, namely an egoistic, a social-altruistic and a biospheric value orientation. This distinction has been empirically validated in various studies (De Groot & Steg, 2007b; 2007c; García Mira, Real Deus, Durán Rodríguez, & Romay Martínez, 2003; Karp, 1996; Nilsson, Von Borgstede, & Biel, 2004). People with a strong egoistic value orientation will especially consider costs and benefits of transport policies for them personally, while people with a prevalent altruistic value orientation will evaluate consequences of transport policies based on perceived costs and benefits of these policies for other people. People with a strong biospheric value orientation will base their evaluation of policies on perceived costs and benefits for the ecosystem and biosphere. Most studies have found that people with a dominating altruistic or biospheric value orientation (sometimes referred to as self-transcendent or prosocial orientation) have stronger proenvironmental beliefs and are more likely to engage in proenvironmental behaviour than people who strongly value their own interests, that is, egoistic, self-enhancement or proself values (Cameron, Brown, & Chapman, 1998; Karp, 1996; Nordlund & Garvill, 2002; 2003; Stern & Dietz, 1994; Stern et al., 1998; Van Vugt, Meertens, & Van Lange, 1995). For example, a study of Nilsson and colleagues (2004) shows that biospheric value orientations were positively related to willingness to accept climate change policy measures for decision makers in the public sector. Altruistic and egoistic (i.e. self-enhancement) value orientations showed weak relationships with acceptance of climate change policies. However, neither the study of Nilsson nor other studies that related egoistic,

altruistic and/or biospheric value orientations to sustainable beliefs and behaviour did examine relationships between value orientations and changes in QoL-indicators when a transport pricing measure is introduced.

6.1.3 Aim of the present study

This study examines to what extent a transport pricing policy aimed at reducing car use affects individual quality of life for people differing in value orientations. Four hypotheses are tested. First, people's overall quality of life will decrease when transport pricing is implemented because the individual advantages of car use generally outweigh the collective problems resulting from such use (*Hypothesis 1*).

Second, transport measures aimed at reducing car use will have mainly individual disadvantages and collective advantages (Steg, 2003). People with strong egoistic value orientations focus on individual costs and benefits. Therefore, we hypothesise that people who strongly value egoistic values evaluate quality of life-consequences of the transport measure more negative than people who have a weak egoistic value orientation (*Hypothesis 2*). This is expected to become apparent in two different ways. First, people high in egoistic value orientations are more pessimistic about negative consequences for quality of life-indicators compared to people low in egoistic value orientation (*Hypothesis 2a*). Second, they are less optimistic about the expected positive changes in quality of life-indicators due to the transport pricing measure (*Hypothesis 2b*).

Third, altruistic value orientations are expected to be associated with environmental friendly beliefs and behaviours. Therefore, we hypothesise that people who are altruistically oriented are more optimistic about the possible quality of life-consequences of the policy (*Hypothesis 3*). More specifically, it is expected that the more people are altruistically oriented, the more positively they will evaluate the positive consequences of the transport measure (*Hypothesis 3a*). Further, people with strong altruistic value orientations will be less negative about the expected negative consequences for quality of life compared to people with weak altruistic value orientations (*Hypothesis 3b*).

Finally, people with strong biospheric value orientations will be more positive on the quality of life-consequences of the transport pricing policy

(*Hypothesis 4*): they will evaluate the positive consequences of the policy for their quality of life more positively (*Hypothesis 4a*), and the negative consequences less negative compared to people with low biospheric value orientations (*Hypothesis 4b*). Furthermore, we expect stronger differences in expected quality of life-changes for those low and high in biospheric value orientation than between groups varying in altruistic value orientation, because reduction in car use is especially associated with benefits for the environment (Gatersleben, 2000; Jakobsson et al., 2000; Loukopoulos, Jakobsson, Gärling, Schneider, & Fujii, 2005).

6.2 Method

6.2.1 Procedure and respondents

This study was part of a larger study that examined changes in QoL resulting from the implementation of transport policies. In May 2004, an Internet survey started in five different countries (i.e. Austria, Czech Republic, Italy, the Netherlands and Sweden). Among other things, the survey comprised questions on value orientations and questions aimed to assess effects of a transport pricing measure, that is, doubling prices of car use, on QoL and behaviour (see De Groot & Steg, 2006b). Questionnaires were distributed through email: acquaintances, family and colleagues were sent a link to the questionnaire with the request to fill out the questionnaire and to send the link to as many other persons as possible (snowball effect).

We used the full dataset of the survey for this chapter. In total, 490 respondents returned the questionnaire. Ninety-four respondents were from Austria, 106 from Czech Republic, 71 from Italy, 150 from the Netherlands, and 69 from Sweden. One respondent did not fill out the questions on value orientations and was therefore excluded from further analyses. Because the survey was conducted through the Internet, the exact response rate is not known. Forty-five percent of the respondents were male and 55% were female. Respondents' age ranged from 17 to 72 years ($M = 46.3$ and $SD = 18.39$).

6.2.2 Measures

Expected QoL-effects. Respondents were asked to indicate which consequences the following transport policy would have for their QoL:

“Imagine that the government doubled prices of car use. Increasing the costs of parking, fuel levies, transport pricing measures, and increases in insurance costs would mean that for each car you use, you would pay 100% more than you currently do.”

We formulated a general measure, because it was easy to understand and easy to imagine for people in all different countries. Also, the policy measure was quite extreme, to guarantee that QoL would actually be affected by it.

Respondents indicated effects of this policy on 18 QoL-aspects (see Table 6.1) on a seven-point scale ranging from -3 *would decrease dramatically* to 3 *would increase dramatically*. These QoL-indicators proved to be important in relation to mobility scenarios (Poortinga et al., 2001). Also, an overall judgement about the expected QoL change was given (“All things considered, to what extent this policy would influence your overall quality of life?”) on the same seven-point scale.

Value orientations. Measures of value orientations were based on the short value instrument conceived by De Groot and Steg (2007b). Three value orientations were distinguished: egoistic, altruistic and biospheric value orientations. The selection included the following values: social power, wealth, authority, influential, ambitious (egoistic value orientation), equality, a world of peace, social justice, helpful (altruistic value orientation), preventing pollution, respecting the earth, unity with nature and protecting the environment (biospheric value orientation). Respondents rated the importance of these 13 values “as a guiding principle in their lives” on a nine-point scale ranging from -1 *opposed to my values*, 0 *not important* to 7 *extremely important*. Following De Groot and Steg, respondents were urged to vary the scores and to rate a maximum of two values as extremely important. Multiple Group Method (Ten Berge & Siero, 2001) revealed that the three value orientations could indeed be distinguished. Cronbach’s alpha was .74 for the egoistic ($M_{\text{ego}} = 2.5$, $SD = 1.2$), .73 for the altruistic ($M_{\text{alt}} = 5.1$, $SD = 1.1$), and .86 for the biospheric value orientation ($M_{\text{bio}} = 5.0$, $SD = 1.3$).

Table 6.1

Description of 22 quality of life indicators and mean scores (M) of expected change in quality of life when prices of car use would double.

<i>Indicator</i>	<i>Description</i>	<i>M</i>
Comfort	Having a comfortable and easy life.	-0.9
Material beauty	Having nice possessions in and around the house.	-0.2
Status, recognition	Being appreciated and respected by others.	0.0
Aesthetic beauty	Being able to enjoy the beauty of nature and culture.	0.4
Security*	Feeling attended to and cared for by others.	0.2
Money, income	Having enough money to buy and do things that are necessary and pleasing.	-0.7
Partner and family*	Having an intimate relationship. Having a stable family life and good family relationships.	-0.1
Health	Being in good health. Having access to adequate health care.	0.2
Social justice	Having equal opportunities and the same possibilities and rights as others. Being treated in a righteous way.	-0.2
Leisure time	Having enough time after work and household work and being able to spend this time satisfactorily.	-0.5
Change, variation	Having a varied life. Experiencing as many things as possible.	-0.6
Freedom	Freedom and control over the course of one's life, to be able to decide for yourself, what you do, when and how.	-0.7
Privacy	Having the opportunity to be yourself, to do your own things and to have a place for your own.	-0.3
Environmental quality	Having access to clean air, water and soil. Having and maintaining a good environmental quality.	1.2
Identity, self-respect	Having sufficient self-respect and being able to develop an own identity.	0.0
Social relations	Having good relationships with friends, colleagues and neighbours. Being able to maintain contacts and to make new ones.	-0.3
Spirituality, religion*	Being able to live a life with the emphasis on spirituality and/or with your own religious persuasion.	0.1
Education	Having the opportunity to get a good education and develop one's general knowledge.	-0.1
Safety	Being safe at home and in the streets. Being able to avoid accidents and being protected against criminality.	0.6
Nature, biodiversity	Being able to enjoy natural landscapes, parks and forests. Assurance of the continued existence of plants and animals, maintaining biodiversity.	0.9
Challenge, excitement*	Having challenges and experiencing pleasant and exciting things.	-0.2
Work	Having or being able to find a job and being able to fulfil it as pleasantly as possible.	-0.5

* Attitude studies on car use and energy saving policies suggest that these indicators are not strongly related to transport policies aimed at reducing car use (Anable & Gatersleben, 2005; Ibrahim, 2003; Hagman, 2003; Hiscock et al., 2002), neither do they show strong face validity. They are excluded in further analysis.

6.2.3 Analyses

Differences between groups varying in value orientations in expected QoL-changes were tested by means of General Linear Modelling. For this purpose, groups with low respectively high scores on each value orientation were composed. Thirty-five percent of respondents who scored highest on each value orientation were compared to 35% of the respondents who scored lowest on the same value orientation. The middle group (30%) were excluded for these analyses.

6.3 Results

6.3.1 Descriptive statistics

In general, respondents expected a minor decrease in overall QoL when prices of car use would double ($M = -.2$, $t(488) = -3.95$, $p < .001$). Table 6.1 shows the expected consequences of this measure for the 18 QoL-indicators separately. Respondents indicated that especially the aspects comfort ($M = -.9$), money ($M = -0.7$), freedom ($M = -.70$), change/variation ($M = -.6$), leisure time ($M = -.5$) and work ($M = -.5$) would decrease when prices of car use would double. In contrast, environmental quality ($M = 1.2$), nature/biodiversity ($M = .9$) and safety ($M = .6$) were believed to improve if the government would implement this policy.

Table 6.2 shows Pearson correlations between the three value orientations and the eighteen QoL-indicators. Correlations are not strong, but significant in many cases. Correlations between the egoistic value orientation and changes in QoL-indicators are negative, suggesting that strong egoistic value orientations are associated with expecting more negative and less positive changes in QoL-indicators. The correlations were most strong for the QoL-indicators freedom ($r = -.16$, $p < .01$), comfort ($r = -.15$, $p < .01$), privacy ($r = -.15$, $p < .01$), environmental quality ($r = -.15$, $p < .01$), nature/biodiversity ($r = -.15$, $p < .01$), health ($r = -.14$, $p < .01$), education ($r = -.13$, $p < .01$), and work ($r = -.12$, $p < .01$). In contrast, altruistic and biospheric value orientations were positively correlated with most changes in QoL-indicators, indicating that strong altruistic and biospheric value orientations are associated with expecting less

negative and more positive changes in QoL-indicators. Biospheric value orientations showed the strongest positive relations with most QoL-aspects, among which nature/biodiversity ($r = .27, p < .01$), environmental quality ($r = .24, p < .01$), change/variation ($r = .22, p < .01$), aesthetic beauty ($r = .19, p < .01$) and safety ($r = .18, p < .01$).

For altruistic value orientations correlations were weaker and sometimes not significant. These results suggest that groups differing in egoistic, altruistic and biospheric value orientations indeed expect different changes in QoL-indicators.

Table 6.2

Pearson correlations between egoistic, altruistic, biospheric value orientations and expected changes in eighteen QoL-indicators.

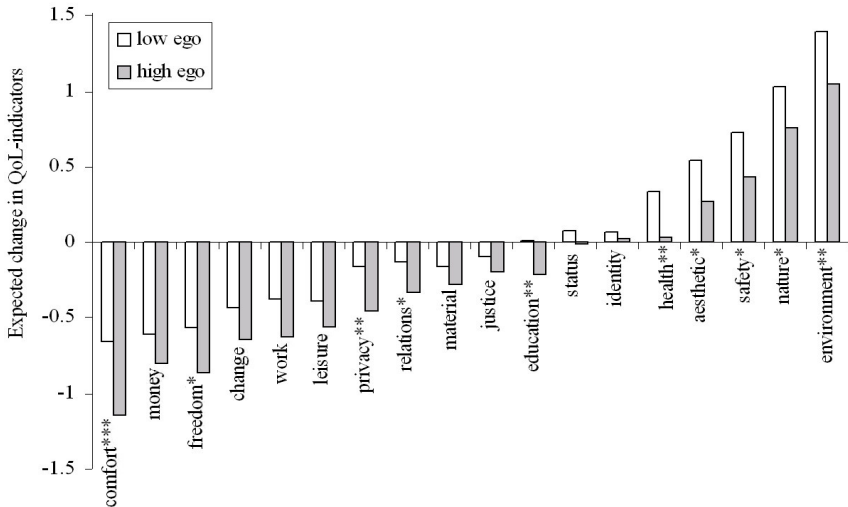
	Egoistic	Altruistic	Biospheric
Comfort	-.15**	.03	.10*
Material beauty	-.05	.07	.14**
Status, recognition	-.05	-.05	.06
Aesthetic beauty	-.09*	.11*	.19**
Money, income	-.07	.04	.11*
Health	-.14**	.02	.04
Social justice	-.04	.15**	.14**
Leisure time	-.09	.06	.15**
Change, variation	-.09*	.10*	.22**
Freedom	-.16**	.10*	.13**
Privacy	-.15**	.04	.06
Environmental quality	-.15**	.15**	.24**
Identity, self-respect	-.04	.09	.11*
Social relations	-.10*	.03	.13**
Education	-.13**	.10*	.08
Safety	-.11*	.04	.18**
Nature, biodiversity	-.15**	.11*	.27**
Work	-.12**	.08	.09*

* $p < .05$ ** $p < .01$

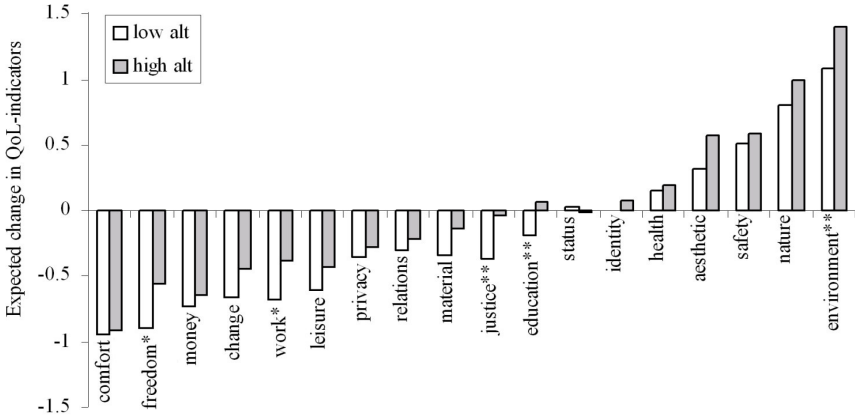
6.3.2 Group differences in value orientations and expected changes in QoL

Figure 6.1a shows that people with a high egoistic value orientation are consistently more pessimistic about the QoL-consequences of the policy compared to those who score low on the egoistic value orientation scale ($F(18, 337) = 1.62, p = .054$). More specifically, tests of between-subjects effects reveal they are more negative about the possible negative consequences for the QoL-indicators comfort ($F(1, 354) = 11.39, p < .001$), privacy ($F(1, 354) = 7.81, p < .01$) social relations ($F(1, 354) = 4.12, p < .05$) and education ($F(1, 354) = 7.20, p < .01$). Furthermore, people who strongly value egoistic aspects are more negative about the possible positive consequences for health ($F(1, 354) = 6.84, p < .01$), aesthetic beauty ($F(1, 354) = 3.90, p < .05$), safety ($F(1, 354) = 6.48, p < .05$), nature/biodiversity ($F(1, 354) = 4.92, p < .05$) and environmental quality ($F(1, 354) = 8.99, p < .01$). An overview of all relevant F-values for tests of differences between groups differing in egoistic, altruistic and biospheric value orientations is given in Table 6.3.

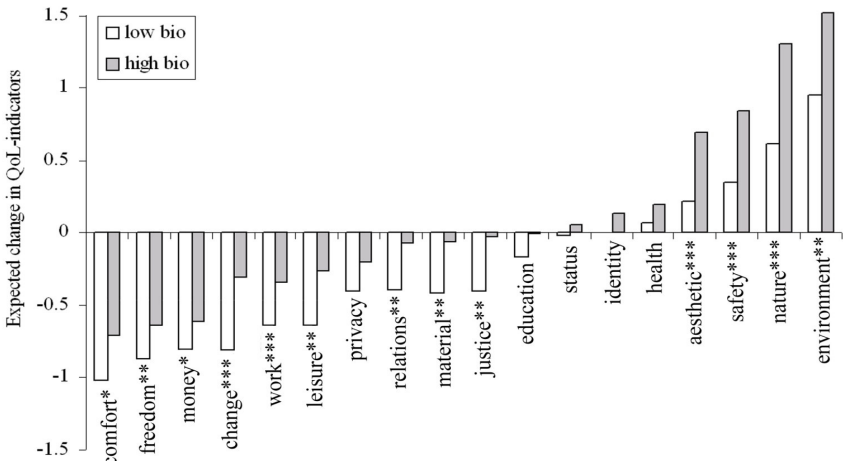
(a) Introducing transport pricing for people who score low and high on egoistic value orientations.



(b) Introducing transport pricing for people who score low and high on altruistic value orientations.



(c) Introducing transport pricing for people who score low and high on biospheric value orientations.



*p < .05 **p < .01 ***p < .001

Figure 6.1. Expected changes in quality of life indicators when: (a) introducing transport pricing for people who score low and high on egoistic value orientations, (b) introducing transport pricing for people who score low and high on altruistic value orientations, (c) introducing transport pricing for people who score low and high on biospheric value orientations.

Table 6.3

Between-subjects effects for expected changes in quality of life indicators between people varying in egoistic, altruistic and biospheric value orientations.

	<i>Egoistic F values</i>	<i>Altruistic F values</i>	<i>Biospheric F values</i>
Comfort	11.39***	0.06	4.11*
Money	1.31	0.46	4.76*
Freedom	6.03*	5.90*	7.01**
Change	2.36	2.79	19.48***
Work	3.67	5.90*	8.08**
Leisure	1.50	1.95	9.68**
Privacy	7.81**	0.46	3.70
Relations	4.12*	0.68	9.66**
Material beauty	0.94	2.92	7.27**
Justice	0.47	8.35**	9.82**
Education	7.12**	9.05**	3.22
Identity	0.52	1.38	2.99
Status	2.26	0.26	1.43
Health	6.84**	0.09	1.03
Aesthetic beauty	3.90*	3.48	12.03***
Safety	6.48*	0.38	16.60***
Nature	4.92*	2.29	31.65***
Environment	8.99**	6.85**	21.20***
	<i>df (1, 354)</i>	<i>df (1, 354)</i>	<i>df (1, 336)</i>

*p < .05 **p < .01 ***p < .001

As expected, results for both the altruistic and the biospheric value orientation show the opposite pattern. People high and low in altruistic value orientation differ significantly and systematically in perceived QoL-consequences of transport pricing ($F(18, 337) = 2.21, p < .01$; see Figure 6.1b). Tests of between-subjects effects reveal that people high in altruistic value orientation are less negative about the negative consequences of the policy for the QoL-indicators freedom ($F(1, 354) = 5.90, p < .05$), work ($F(1, 354) = 5.90, p < .05$), social justice ($F(1, 354) = 8.35, p < .01$) and education ($F(1, 354) = 9.05, p < .01$). They are more positive about the possible positive consequences for environmental quality ($F(1, 354) = 6.85, p < .01$).

When people are strongly biospherically oriented, a similar pattern of results is found ($F(18, 319) = 3.06, p < .001$). Here, the more optimistic view of people high in biospheric value orientation is shown by expecting less negative

changes in almost all QoL-indicators that are expected to decrease, with an exception of privacy ($F(1, 336) = 3.70, p = .06$) and education ($F(1, 336) = 3.22, p = .07$). Furthermore, the more people are biospherically oriented, the more strongly they expect positive effects in aesthetic beauty ($F(1, 336) = 12.03, p < .001$), safety ($F(1, 336) = 16.60, p < .001$), nature/biodiversity ($F(1, 336) = 31.65, p < .001$) and environmental quality ($F(1, 336) = 21.20, p < .001$). These results are shown in Figure 6.1c.

6.4 Discussion

The first aim of this study was to examine to what extent people's perceived quality of life would be affected when costs of car use would double. We expected that the policy would have more disadvantages than advantages and, therefore, overall QoL would decrease (Hypothesis 1). Results supported this hypothesis. However, it was shown that people expected only a minor decrease in their overall perceived QoL when costs for car use would double. Thus, even a stringent measure, such as doubling costs of car use, seems hardly to affect people's general well-being. An explanation of this result may be that respondents follow a compensatory decision-making model (Steg & Gifford, 2005; Greenwald & Leavitt, 1984). Some aspects, such as comfort, money, freedom, and change/variation, deteriorate, while other aspects (i.e. environmental quality, nature/biodiversity, safety and health) improve. Negative QoL-changes seem to be compensated by aspects that would improve when the transport measure would be implemented.

Furthermore, we examined how value orientations are related to expectations of possible consequences of transport pricing on QoL. We expected that doubling car costs aimed at reducing car use would especially have negative consequences for people having a strong egoistic value orientation while the measure would have more positive consequences for people with high altruistic and biospheric value orientations. The hypotheses related to this assumption are all validated by the results. People high in egoistic values evaluate the QoL-consequences of the transport measure more pessimistically than people who have a low egoistic value orientation. They are more negative about expected negative consequences and less positive about possible positive consequences for QoL-indicators. The opposite is true for people with strong

altruistic and biospheric value orientations. People who are altruistically or biospherically oriented are more optimistic about the possible consequences of the policy on their QoL. They evaluate possible positive consequences for their QoL more positively, and they are less negative about expected negative consequences for QoL compared to people with weak altruistic and biospheric value orientations. The latter is especially true for those with a strong biospheric value orientation.

This study provides further support for the claim that proenvironmental beliefs, among which the evaluation of sustainable transport policies, are positively related to altruistic and biospheric value orientations and negatively related to egoistic value orientations (see also, Stern & Dietz, 1994; Stern et al., 1998). Moreover, results show that altruistic and biospheric oriented people are similar to each other in evaluating transport policies because both groups expect QoL-indicators to change in the same direction when implementing a transport pricing policy. However, people endorsing biospheric and altruistic value orientations differ in the extent to which they think QoL would be affected by the policy. The biospheric value orientation shows medium to strong correlations with expected QoL-changes resulting from transport pricing for the aspects comfort, material beauty, money/income, leisure time, identity, safety and work, whereas the altruistic value orientation shows weak or even no correlations with changes in these QoL-indicators. Also, there are more significant differences in expected QoL-changes between those low and high in biospheric value orientation than between groups varying in altruistic value orientation. This may add some further support to the growing evidence that a biospheric value orientation may be differently related to evaluations of policies and behaviours with regard to sustainability issues than are altruistic value orientations (see for example, De Groot & Steg, 2007b; Nilsson et al., 2004).

The transport pricing measure evaluated in this study, that is, doubling prices of car use, was described in a very general way, because the measure had to be easy to understand and imaginable for people in all different countries. Respondents might have troubles imagining the QoL-consequences of such a general policy. Imagining the consequences of (transport) policies on people's QoL may be facilitated by describing policy measures in more detail, for example by making an exact calculation of increases in travel costs,

specifying the exact transport pricing policy (i.e., road pricing, fuel pricing, tax incentives) or by explaining how the revenues are used.

It would be useful to study the relationships between value orientations and QoL-effects for other transport measures as well to examine whether results may be generalised to other transport policies. Because value orientations are important general determinants of various environmental beliefs and behaviours (Schultz & Zelezny, 1999; Stern, 2000; Stern & Dietz, 1994), we assume that egoistic, altruistic and biospheric value orientations could also be useful in understanding expected QoL-changes when introducing other measures aimed at promoting sustainability. For example, instead of introducing a push-measure, that is, a measure directed at making car use less attractive, it is also possible to evaluate QoL-consequences of a pull-measure, aimed at improving alternatives for car use, or combinations of these two. Research shows that push-measures are less acceptable than pull-measures (Gatersleben, 2000; Steg & Vlek, 1997). Differences in expected changes for people's QoL could be an explanation for these outcomes. Pull-measures could be more acceptable because people are not forced to act against things they value, hereby not affecting QoL-changes negatively. Replication of results of the present study with the focus on concrete and different types of (transport) policies may be promising directions for future research.

Studies like these reveal whether and how transport pricing policies affect the perceived quality of life. Based on this, recommendations may be given on how to adjust or supplement policies to prevent or compensate negative outcomes or promote positive outcomes. Considering quality of life consequences of policies would be an improvement of the current situation, in which decisions are based on expectations set by some minority groups that have a powerful say in decision-making processes. These groups can obstruct particular solutions or compromises that leave governments with opinions that would have negative consequences for or would be unacceptable for the majority. Knowing how specific quality of life aspects may be influenced positively may enhance policy acceptability. This will facilitate the implementation of sustainability policies and guarantee effective and efficient decision making.

