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Environmental Choices: Hypocrisy, Self-Contradictions and the Tyranny of Everyday Life

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5   Environmental choices

Hypocrisy, self-contradictions and the tyranny of everyday life

Quentin Gausset, Jens Hoff, Christian Elling Scheele and Emilie Nørregaard

Introduction

There is a broad consensus today around the threat posed by global warming and the need to address the problem. A large percentage of carbon dioxide (CO_2) emissions come from consumption patterns found at the household or individual level. In 2011, transport accounted for 33 per cent of the total CO_2 emissions in Denmark (of which more than two-thirds come from private transport), and household energy consumption – mainly for heating houses – accounted for 22 per cent of total emissions (Energistatistik 2011).

Although Denmark's energy strategy to make the country independent from fossil fuel by 2050 focuses on systemic and infrastructure changes, it also relies on significantly reducing citizens' energy consumption by 6 per cent by 2020, as compared to 2006 (Regeringen 2011). In the long-term perspective, this percentage probably needs to increase in order to reach a carbon-free society by 2050.

Such goals cannot be reached without citizens changing their environmental behaviour substantially. For this reason, this chapter looks at the factors that motivate people to reduce their CO_2 footprint in various areas of consumption, and the barriers that stand in the way of such reductions. We analyse these questions theoretically as well as empirically, using pooled survey data from 2,005 respondents in three Danish municipalities.

Theories on environmental behaviour change

There are a variety of primarily economic and socio-psychological theories and models that identify the factors that determine environmental behaviour. Many of these theories take *rational choice theory* as their point of departure. This theory, a central tenet of economic theory, assumes that individuals, when faced with the choice between two options, will choose the one that maximises their private benefits and minimises their costs.

The *expectancy value model* builds on this idea, stating that behaviour depends on how individuals believe they can gain the benefit that they seek, and on how they evaluate (positively or negatively) the outcome of the behaviour (Fishbein

1967, 1968; Fishbein and Ajzen 1974, 1975; Palmgreen 1984). The *theory of reasoned action* elaborates on the expectancy value model by adding norms to beliefs and attitudes, and by introducing intentions as an intermediary factor between these beliefs and attitudes and behaviour. Thus, according to the theory of reasoned action, an individual's behaviour depends on his or her intentions, which depend, in turn, on attitudes and beliefs towards the outcome of that behaviour (as in the expectancy value model), and on the subjective norms and normative beliefs (i.e. on their belief regarding how people will judge their behaviour) (Fishbein and Ajzen 1975; Ajzen and Fishbein 1980).

Over time, a third factor was introduced into the mix that focuses on whether individuals perceive that they can control behaviour and its outcome. This new model is called the *theory of planned behaviour* (Ajzen 1985, 1991). Emotions have also been identified as an important aspect of attitudes and beliefs, e.g. people might strongly react to fear (Jackson 2005, 35; Uzzell *et al.* 2006, 19). Even though emotions might not appear to be rational, this theoretical approach shares with other approaches (including the rational choice theory) the idea that behaviour choices are determined by the individual's own values and/or knowledge.

Although the theories of reasoned action and planned behaviour accept that norms and the social influence of others have a place in the discussion, they still focus very much on individuals and private benefits. Other scholars have attempted to shift the focus towards collective altruism and ethics, or towards social pressure as determinants for behaviour. For example, the model of the new environmental paradigm holds that people do not behave selfishly just to maximise benefits or to avoid social disapproval; they also behave for social and altruistic reasons according to what they believe is ultimately ethical and moral (Dunlap and van Liere 1978; Stern *et al.* 1995).

The *norm-activation theory* argues that two crucial aspects determining altruistic behaviour are whether people are aware of the consequences that their actions have on others, and whether they accept the responsibility for these consequences (Schwartz 1977). Stern attempted to merge the theories of the new environmental paradigm and norm-activation into a new *value-belief-norm model*. He argues that people who hold biospheric and altruistic values are the most aware of the consequence of their actions, take responsibility for them, change their personal norms and adopt environmentally friendly behaviour, whilst people holding egoistic values prefer to ignore the consequences of their actions and/or deny any responsibility (Stern 2000).

The focus on collective norms has been further refined by studies arguing that behaviour might depend less on private benefit or on the desire to do good and behave well than on social compliance and the desire to behave as others do (regardless of the material benefit for oneself or for others, and regardless of ethical considerations) (Cialdini *et al.* 1990). Using social networks can therefore be a crucial approach to anchoring identity and behaviour (Uzzell *et al.* 2006, 14). This approach links to political theories that study not just compliance to social norms, but also compliance to rules and regulations prescribing and proscribing

certain behaviours, and to the study of the importance of citizen participation in decision making (see Chapter 4 in this book).

As we can see, there are two broad clusters of theories on environmental behaviour. On the one hand, theories developed around the rational choice theory focus on individuals who are presumed to behave in order to maximise their own benefit and welfare. On the other hand, theories focusing on social responsibility, social norms or social pressure focus on groups that influence individual behaviour. The first cluster of theories locates behaviour change within individual choices, while the second locates it within social relations. Although they differ in focus, these different models overlap and combine a limited number of recurrent factors. Therefore, in our survey, we selected the following seven factors that we think are the most influential in determining environmental behaviour:

1   *Economic considerations*: People adapt their behaviour and consumption patterns to the means they have at their disposal. They try to minimise expenses/costs and maximise benefits. Following this approach, environmental behaviour can be promoted by subsidising sound behaviour and taxing unsound behaviour.
2   *Values*: People behave according to a certain morals and ethics. They work to create a better world for their children and refrain from behaving in ways that harm others. But ecological or biospheric values can contradict each other and can compete with other sets of values (such as private and/or collective welfare). Environmental policy must therefore promote ecological values over others.
3   *Norms*: People adapt their behaviour to social expectations, i.e. to what they believe people expect from them. They conform to norms, behave like others or avoid behaving in ways that are considered to be anti-social, which would risk the disapproval of others. Large-scale behaviour change can be triggered when a certain critical mass of people (preferably role models) change their behaviour, pulling a larger part of the population along with them. In these cases, environmental policy can rely more heavily on role models and promote collective environmental action or collective green identities.
4   *Legislation:* People adapt their behaviour according to legislation, both out of a social and moral drive to avoid social judgement and ostracism (see point 2) but also to avoid the sanctions and penalties that might derive from contravening laws and regulations.
5   *Responsibility and empowerment*: People might be willing to change their environmental behaviour if it proves detrimental to their neighbours or to future generations (point 2). But they will only do so if they are aware of the consequences of their actions, and if they are convinced that changing their behaviour will have a direct and immediate impact on the well-being of others.
6   *Knowledge*: People's behaviour depends on the knowledge they have of the different costs and benefits of their behaviour and consumption patterns

(point 1), what is socially expected from them (point 3), legislation (point 4) and the consequences that their behaviour can have on themselves and on others (point 5). Providing information to the public can therefore be an important tool for triggering environmental behaviour change.

7   *Social categories*: Gender, age, income and political orientation can correlate with different needs or interests, types or levels of knowledge, sets of values and sense of responsibility or powerlessness (points 1–6) and can also be factors that determine behaviour.

Data and method

The results reported in this chapter are based on a survey of 2,005 adults over 18 years old from the Danish municipalities of Kolding, Køge and Herning Kommune. The survey was conducted by computer-assisted telephone interviews in April 2012. The respondents were selected on the basis of an extract from the Central Person's Register (CPR) (the Danish Government Register of all citizens) containing approximately 10,500 people, which sets the response rate of this survey at 19 per cent.

However, even though the survey's response rate was modest, the data are considered representative for the population in Denmark with respect to age and gender. Because the data were deemed representative, the dataset was not weighed. Although there are 2,005 respondents in the dataset, *n* ranges from 1,323–1,371 in the logistic regression analyses. Cases with missing values in any variable used in the analysis have been dropped (list-wise deletion). The survey contains information on environmental behaviour, environmental attitudes, knowledge, motivation to take action on climate change and socio-demographic questions.

Dependent variables

We used four parameters that track specific choices made by survey respondents. We asked if they:

- Look for eco-labels when shopping;
- Wash clothes at the lowest possible temperature;
- Own a car; and
- Travelled by plane for leisure and family visits (non-business flights) in the past year.

These factors cover different aspects of environmental behaviour relating to consumption and transport, and also cover both daily choices and choices that are made less frequently, e.g. plane travel. These choices have different impacts on carbon emissions. However, even choices that do not have a strong and direct implication with regard to carbon emissions, such as 'look for eco-labels when shopping', are relevant. This is because the behaviour is easy to adopt and denotes a certain awareness of and responsibility for environmental problems.

The survey contained more parameters, including the annual amount of elec-
tricity consumed, annual expenditures associated with domestic heating, the
annual distance driven in private cars and a set of twelve self-reported questions
concerning environmental habits. The questions, which called for a specific
numerical answer, resulted in a high amount of 'don't know' answers, blanks and
inconsistencies. We chose to leave them out of the analysis.

The twelve self-reported questions regarding environmental behaviour
addressed whether respondents take action to protect the environment (e.g.
buying seasonal fruits and vegetables produced locally, eating less meat, recy-
cling). Responses included, 'I do it as much as I can', 'I am considering doing it
more' and 'I don't do it and I am not considering doing it'. Items were re-coded
in such a way that the answers 'doing it' and 'considering doing it more' scored
with a value of 1 and the answer 'not doing it or not considering doing it' scored
0 (see the distribution of the variable in Table 5.1). Experimentation with index
construction of behaviour through a factor analysis resulted in unsatisfactory
Cronbach's Alpha values, indicating that there is a lack of co-variation between
the variables. This demonstrated that the respondents do not behave in the same
way across different climate-changing actions. Instead of using indices, we
selected only two specific variables, washing clothes at the lowest temperature
and looking for eco-labels when shopping, as indicators of climate-friendly
behaviour. These items were selected because they turned out to be the most
representative for shopping and for energy-saving actions in the home.

Independent variables

The seven factors hypothesised to determine environmental behaviour were
operationalised in our questionnaire as follows:

1) and 2) *Economic considerations and values* (egoism and altruism): In our
questionnaire, we asked informants what motivates them most when adopting an
environmentally friendly behaviour: a) economic benefit, b) improving the
health of the family, c) protecting threatened species, d) reducing climate
changes, e) improving the resource base of future generations or f) having a good
conscience. The first answer was coded as an egoistic dummy variable (0–1) and
was taken as an indicator of economic considerations. In our analysis, this was
equated to an indicator of egoistic values. Answers c), d) and e) were merged and

Table 5.1 Frequency of dependent variables, eco-labels, laundry, car and flight

	Looking for eco-labels when shopping		Washing clothes at lowest possible temperature		Own a car		Flew privately in the last year	
	No	Yes	No	Yes	No	Yes	No	Yes
N	673	1299	242	1686	246	1753	1043	962

coded as one altruistic dummy variable and were interpreted as an indicator of altruistic values.

3) *Norms*: To uncover normative behaviour in our survey, we asked whether respondents could be motivated to adopt more environmentally friendly behaviour if a) they were part of a group sharing the same environmental goals, or b) if they were encouraged to do so by friends, family members or colleagues. Responses were the degree of motivation coded into a dummy of 1 = 'it motivates me greatly' and 'it motivates me to some extent', and 0 = 'it motivates me poorly'.

4) *Personal responsibility*: The issue of awareness and empowerment is covered by a series of questions asking respondents whether it is worth changing behaviour in Denmark if a) the bigger nations do not move in the same direction, b) whether it is worth changing behaviour if others do not do the same, c) whether the effects of climate change are too far in the future to worry about today and d) whether the threats of global warming are exaggerated. These are four continuous variables with scores ranging from 1 to 5, with 5 = 'strongly agreeing' and 1= 'strongly disagreeing'.

5) *Legislation*: We asked respondents to what extent they agreed with the idea that the government should increase taxes so that people would pay the full environmental cost of travelling by plane or driving cars, and whether there should be more regulations to force people to adopt more environmentally friendly behaviour. These variables also have scores ranging from 1 to 5 (5 = 'strongly agreeing' and 1= 'strongly disagreeing', and are coded in the same way as the variables above.

6) *Knowledge:* We did not try to measure respondents' environmental knowledge; instead, we asked them to judge their own levels of knowledge about climate change in particular. The answers were recoded into a dummy variable with 'a lot' and 'some' coded as 1 and 'a little' and 'nothing' coded as 0.

7) *Social categories*: Six demographic variables were included to control for potential confounding (i.e. gender, age, education, household income, political orientation and a dummy variable for having children under 18 years of age in the household).

Method

We examined which factors influence environmental behaviour by analysing the data from the questionnaire. We addressed the magnitude of the relationship between different set of variables using Pearson correlations. We explained the differences in environmental behaviour through the four dependent variables covering different aspects of environmental behaviour.

For these dichotomous variables, we employed a binary logistic regression procedure that uses maximum likelihood estimation to estimate the probability of pro-environmental behaviour (see Table 5.2). To facilitate the interpretation, the odds ratio and standard errors are also presented as marginal effects. These demonstrate the change in the probability of the outcome occurring as one moves from minimum to maximum in the given independent variable with all other variable held at their means.

Table 5.2 (Binary) logistic regression, eco-labels, laundry, car and flight (dep.)

	Looking after eco-labels when shopping	*Washing clothes at lowest possible temperature*	*Own a car*	*Flew privately in the last year*
Egoism (economic motivation) (dichotomous)	0.68* (0.14)	1.05 (0.29)	1.04 (0.38)	0.86 (0.17)
Altruism (dichotomous)	1.27 (0.25)	1.67* (0.45)	0.93 (0.31)	0.98 (0.18)
Being leftist (dichotomous)	1.41** (0.19)	1.74*** (0.37)	0.77 (0.18)	0.82 (0.10)
Motivated by community (dichotomous)	1.37** (0.18)	1.45** (0.27)	1.13 (0.28)	1.07 (0.13)
DK is too small to make a difference	0.93 (0.05)	0.97 (0.07)	1.19* (0.12)	0.94 (0.05)
The effects of climate change are too far in the future	0.87** (0.06)	0.85* (0.07)	1.03 (0.12)	1.03 (0.06)
Not worth changing behaviour if others do not do the same	0.89** (0.05)	0.98 (0.07)	0.97 (0.09)	1.01 (0.05)
Plane travellers should pay the full environmental cost	1.09 (0.06)	0.98 (0.08)	0.96 (0.10)	0.72*** (0.04)
Increase environmental taxes	1.03 (0.06)	1.06 (0.09)	0.79** (0.08)	1.02 (0.06)
More environmental regulations	1.22*** (0.06)	0.92 (0.07)	1.02 (0.10)	1.20*** (0.06)
Climate knowledge (dichotomous)	1.58*** (0.21)	1.76*** (0.32)	0.62** (0.15)	1.21 (0.15)
Education	1.00 (0.03)	0.96 (0.05)	0.90* (0.05)	1.11*** (0.04)
Gender (dichotomous, woman=1)	1.26* (0.16)	1.31 (0.25)	0.88 (0.21)	0.74** (0.09)
Age	1.01** (0.00)	1.02*** (0.01)	1.03*** (0.01)	1.00 (0.00)
Income	1.04 (0.03)	1.02 (0.04)	2.26*** (0.18)	1.15*** (0.03)
Children (dichotomous)	0.80 (0.12)	1.17 (0.25)	2.24** (0.73)	0.56*** (0.08)
N	1356	1325	1369	1373
pseudo R^2	0.101	0.084	0.327	0.078
Log lik.	−776.84	−443.66	−282.92	−877.35
LR Chi-squared	173.92	81.04	275.34	148.56
Correctly classified	69.62%	88.15%	91.96%	63.15%

Notes: Odds ratio/Exponentiated B-coefficients. Standard errors in parentheses. * $p<0.10$, ** $p<0.05$, *** $p<0.01$.

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Although not presented, a test of co-linearity between the independent variables was conducted by examining the VIF, tolerance and eigenvalues. No significant co-linearity was indicated. All of our analyses were run in STATA SE 12.0.

Results

Generally speaking, all of the seven factors explained above do influence environmental behaviour. However, they do so in different and sometimes subtle ways.

1) Informants who declared that saving money is their primary motivation to change their environmental behaviour tend to exhibit less environmentally friendly behaviour than informants whose motivation to change environmental behaviour is not primarily economic. A total of 53 per cent of those primarily motivated by economic benefits look for eco-labels and 83 per cent wash clothes at the lowest temperature possible, compared to 71 per cent and 89 per cent respectively for those whose primary motivation is not economic (see Table 5.3).

When controlling for other variables, respondents primarily motivated by economic savings are less likely to look for eco-labels when shopping than those having another primary motivation (odds = 0.68, see Table 5.2), while the correlation with washing clothes in lower temperatures disappears. These results may seem puzzling, since environmentally friendly behaviour (buying non-food items with low-energy eco-labels, washing clothes at lower temperature or using public transport instead of private cars) often allows people to save money. The paradox is that people who declare to be primarily motivated by saving money tend in fact to save less money (or in any case, not more) than those who do not have

Table 5.3 Value variables by four environmental behaviour determinants (cross-tabulation)

	Looking after eco-labels when shopping		Washing clothes at lowest possible temperature		Own a car		Flew privately in the last year	
	%	Sig.	%	Sig.	%	Sig.	%	Sig.
Egoistic values								
No	71	***	89	***	87	—	48	—
Yes	53		83		88		48	
Altruistic values								
No	57	***	84	***	87	—	46	—
Yes	73		90		88		49	
Political orientation								
Right	60	***	85	***	91	***	51	—
Left	75		92		85		47	

Notes: Chi-square significance test (H_0 the variables are statistically independent. H_A the variables are statistically dependent.) * $p<0.10$, ** $p<0.05$, *** $p<0.01$.

economic factors as their primary motivation. If we interpret the motivation to save money as an egoistic and individualistic value, as opposed to an altruistic value, we might conclude that the behaviour of people holding egoistic values is less environmentally friendly than the behaviour of people holding altruistic values, and also that their behaviour is self-contradictory. This will be verified when discussing the next point.

2) Altruistic values (declaring that caring for others, caring for nature, or caring for future generations is the primary driver of one's environmental behaviour) correlates positively with greener behaviour. A total of 73 per cent of respondents holding altruistic values look for eco-labels when shopping and 90 per cent wash clothes at lowest temperature, compared to 57 per cent and 84 per cent respectively for those who do not have altruistic values as their primary motivation (see Table 5.3). When controlling for other variables (see Table 5.2), people holding altruistic values are more likely to look for eco-labels (a result that is not statistically significant, however) and also more likely to wash clothes at the lowest temperature than respondents whose primary motivation is not altruistic (odds ratios = 1.27 and 1.67 respectively).

People who define themselves as leftists also tend to exhibit greener behaviour than others, and do so in a proportion comparable to people holding altruistic values (see Table 5.3, and note the high odds ratios of 1.41 and 1.67 in Table 5.2). In Denmark, when it comes to taxation and socio-economic policies, left-wing voters tend to give more support to state interventionism, the welfare state and community solidarity, whilst right-wing voters tend to support free market solutions and policies rewarding individuals for their personal achievements.

Schematically, one could say that left-wing voters hold more altruistic values while right-wing voters hold more egoistic values. Thus, political values can be a good indicator of egoistic/altruistic values, and therefore environmentally related values (there is a strong correlation between the two factors; see Table 5.6 below). People who generally put collective interests before individual interests are more willing to sacrifice some of their private benefit for the collective environmental benefit, whilst those who hold egoistic values might not be ready to sacrifice their comfort or welfare for the environment. (This is especially true when it is difficult to establish a clear link between individual local behaviour and its global and future negative consequences.)

3) Following social norms (behaving like others, or in a way that is approved of by others) can be an important motivation to adopt more environmentally friendly behaviour. When considering whether to adopt a greener behaviour, some informants are highly influenced by what others think or do. Our results show that 71 per cent of people who said they are influenced by their community look for eco-labels when shopping and 91 per cent wash at lowest possible temperature, compared to 58 per cent and 82 per cent respectively for those who declare they are immune to the influence of others (see Table 5.4). In our regression analysis, people who declare they are influenced by the community are more likely to look for eco-labels and more likely to wash clothes at the lowest possible temperature than other respondents (odds = 1.37 and 1.45, see Table 5.2).

Table 5.4 Motivation and knowledge by four environmental behaviour determinants
(cross-tabulation)

	Looking after eco-labels when shopping		Washing clothes at lowest possible temperature		Own a car		Flew privately in the last year	
Motivated by community	%	Sig.	%	Sig.	%	Sig.	%	Sig.
No	58	***	82	***	89	—	48	—
Yes	71		91		87		48	

Notes: Chi-square significance test (H_0 the variables are statistically independent. H_A the variables
are statistically dependent) * $p<0.10$, ** $p<0.05$, *** $p<0.01$.

Because few people want to be perceived as 'environmental pigs', norms can be
effective in inducing a behaviour change.

4) Legislation is an important tool for encouraging environmentally friendly
behaviour. Legislators have the power to distribute economic rewards and to levy
taxes on behaviour or consumption that is detrimental to the environment. A
total of 45 per cent of our respondents support more environmental regulation
and 41 per cent support more environmental taxation, compared to 37 per cent
and 39 per cent respectively who oppose such policies (the rest were undecided).

However, there are disparities among the different categories of informants.
As Table 5.5 indicates, there are more supporters of an increase in environmen-
tal regulation and taxation among those who look for eco-labels when shopping
and wash at lowest temperature possible than among others. Table 5.5 also shows
that plane travellers tend to oppose paying the full environmental cost of plane
travel, but, surprisingly, they also tend to support a more global approach to
increasing environmental regulations. This is confirmed in our regression analy-
sis (odds = 0.72 and 1.20 respectively, see Table 5.2).

Owning a car does not seem to make a big difference in terms of attitudes
towards environmental taxation and regulations, but when controlling for other
variables, car owners tend to oppose an increase in environmental taxes (odds =
0.79, see Table 5.2). This paints a mixed picture of attitudes towards more envi-
ronmental regulations and taxation. On the one hand, people whose daily
behaviour is environmentally friendly tend to support increasing environmental
regulation, and also tend to support (or at least do not oppose) increasing envi-
ronmental taxation. Car owners and plane travellers, on the other hand, tend to
oppose increasing taxation but also tend to support (or at least do not oppose)
increasing environmental regulation.

5) Some people are sceptical regarding the difference they can make as indi-
viduals. For example, 29 per cent of our respondents agree that it is useless for
them to change behaviour if others do not follow suit, compared to 61 per cent
who disagree and 10 per cent who are undecided. Likewise, 23 per cent of our
respondents agree that it is useless to take action in Denmark unless the bigger

Table 5.5 Attitude towards legislation by four environmental behaviour determinants

	Looking after eco-labels when shopping		Washing clothes at lowest possible temperature		Own a car		Flew privately in the last year	
	%	Sig.	%	Sig.	%	Sig.	%	Sig.
Plane travellers should pay the full environmental cost								
Strongly disagree/ disagree	60	***	86	—	89	*	55	***
Strongly agree/agree	72		88		86		38	
Increase environmental taxes								
Strongly disagree/ disagree	58	***	85	***	89	—	48	—
Strongly agree/agree	73		90		87		47	
More environmental regulations								
Strongly disagree/ disagree	57	***	85	**	88	—	45	**
Strongly agree/agree	74		89		88		50	

Notes: Chi-square significance test (H_0 the variables are statistically independent. H_A the variables are statistically dependent) * $p<0.10$, ** $p<0.05$, *** $p<0.01$.

countries (China, the United States) also take action, compared to 64 per cent who disagree and 13 per cent who are undecided.

Logically, the sceptics are also significantly less willing to adopt a greener behaviour (look at eco-labels, wash clothes at lower temperature and refrain from flying or owning a car) than those who believe that individual and national action does make a difference, even if others do not follow suit. In Table 5.6, for example, only 55 to 58 per cent of those who think that Denmark is too small to make a difference, that it is not worth changing behaviour if others don't do the same, and that the effects of climate change are too far in the future to be worried about look for eco-labels when shopping, compared to 70 to 72 per cent who think the opposite. These results are partially confirmed in our regression analysis, at least for climate changes in the future and for the idea that it is not worth changing behaviour if others do not follow (odds = 0.87 and 0.89 respectively, see Table 5.2). People who fly non-business flights tend to be more sceptical: 50 per cent of those who think Denmark is too small to make a difference or that the effects of climate change are too far in the future flew non-business flights in the past year, compared to 42–43 per cent of those who did not fly.

When controlling for other variables, these correlations disappear; one finds instead a correlation between car owners and the perception that Denmark is too small to make a difference (odds = 1.19, see Table 5.2). All this confirms the

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Table 5.6 Personal and collective responsibility by four environmental behaviour
         determinants

	Looking after eco-labels when shopping		Washing clothes at lowest possible temperature		Own a car		Flew privately in the last year	
	%	Sig.	%	Sig.	%	Sig.	%	Sig.
Denmark is too small to make a difference								
Strongly disagree/ disagree	71	***	89	***	87	*	50	**
Strongly agree/agree	58		82		90		43	
The effects of climate change are too far in the future								
Strongly disagree/ disagree	70	***	90	***	89	*	50	**
Strongly agree/agree	55		80		85		42	
Not worth changing behaviour if others do not do the same								
Strongly disagree/ disagree	72	***	89	**	88	—	49	—
Strongly agree/agree	55		84		87		45	

Notes: Chi-square significance test (H_0 the variables are statistically independent. H_A the variables are statistically dependent) * $p<0.10$, ** $p<0.05$, *** $p<0.01$.

general picture that people who adopt environmentally friendly behaviour (in both home and transport habits) tend to 'think globally and act locally', e.g. they are more convinced than others that their own individual behaviour can or does make a difference on a larger scale.

6) Knowledge plays an important role in several theoretical models, whether it is knowledge to maximise benefit, to understand the consequences of one's action, knowledge about legislation and social norms/expectations or actual knowledge about climate change issues. A total of 65 per cent of the respondents believe that they possess a good knowledge of environmental issues; these informants do indeed exhibit a greener behaviour than those who think that they have only a little knowledge.

For example, 70 per cent of those who think that they have a lot of knowledge look for eco-labels and 90 per cent wash clothes at lower temperature, compared to 50 per cent and 83 per cent respectively for people who say they have not much knowledge (see Table 5.6). People who say they have adequate knowledge seem to fly more than others (52 per cent as compared to 42 per cent, see Table 5.7), although this correlation disappears when controlling for other parameters in a regression analysis (see Table 5.2). When it comes to owning a car, however, a regression analysis demonstrates that people who say they have

Table 5.7 Climate knowledge by four environmental behaviour determinants

	Looking after eco-labels when shopping		*Washing clothes at lowest possible temperature*		*Own a car*		*Flew privately in the last year*	
	%	*Sig.*	*%*	*Sig.*	*%*	*Sig.*	*%*	*Sig.*
Climate knowledge								
Small	58	***	83	***	87	—	42	***
Large	70		90		88		52	

Notes: Chi-square significance test (H_0 the variables are statistically independent. H_A the variables are statistically dependent). * $p<0.10$, ** $p<0.05$, *** $p<0.01$.

adequate environmental knowledge are less likely to own a car than others (odds = 0.68, see Table 5.2). This leads us to conclude that knowledge is one of the most important factors in determining environmental behaviour.

The level of education does not have significant effect on either 'look for eco-labels' or 'wash clothes at lowest possible temperature' in the logistic regression analysis. However, education does correlate strongly with knowledge, and just as knowledge does, it correlates negatively with owning a car and positively with flying (see Table 5.2). This indicates that the level of education does indeed have an effect, even though it sometimes affects behaviour through specific knowledge of climate change issues, as illustrated in a path analysis (see Figure 5.1).

7) Social (or demographic) categories correlate with environmental behaviour in different ways. First, women perform more positively than men on all indicators of environmental behaviour, but especially when it comes to looking at eco-labels, buying local and seasonal fruits or owning a car (odds = 1.26 and 0.74 respectively) (see Table 5.2). Women are also more likely than men to be leftist and to hold altruistic values (see Table 5.8).

Second, the environmental behaviour of elderly people is significantly greener than the behaviour of younger people (see Table 5.2). But older people also tend
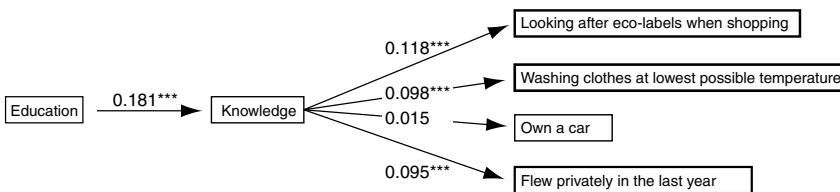

Figure 5.1 Path analysis of education

Note: Pearson's R correlations

Table 5.8 Sociodemographics variables by climate engagement: Correlation matrix

	Egoism (economic motivation) (dichotomous)	Altruism (dichotomous)	Being leftist (dichotomous)	Motivated by Community (dichotomous)	DK is too small to make a difference	The effects of climate change are too far in the future	Not worth changing behaviour if others do not do the same	Plane travellers should pay the environmental cost	Increase environmental taxes	More environmental regulations	Climate knowledge (dichotomous)
Gender (dichotomous, woman=1)	−0.180***	0.164***	0.120***	0.040	−0.171***	−0.059**	−0.154***	−0.093***	−0.011	0.048*	−0.077***
Age	−0.086***	−0.014	0.049*	0.017	0.040	0.088***	0.026	0.138***	0.000	−0.093***	−0.034
Education	−0.002	0.067**	0.049*	−0.070**	−0.146***	−0.180***	−0.073**	−0.022	0.050*	−0.000	0.181***
Income	0.002	0.076**	−0.057*	−0.090***	−0.074***	−0.176***	−0.070**	−0.086***	0.013	0.023	0.128***
Children (dichotomous)	0.001	0.077***	−0.047	−0.032	−0.060**	−0.140***	−0.066**	−0.052*	0.030	0.083***	0.033

Notes: * *p*<0.05, ** *p*<0.01, *** *p*<0.001.

to think that climate change is too far in the future to concern them and to oppose more environmental regulations (see Table 5.8). Their relatively sound environmental behaviour seems therefore to be more motivated by habits than by ideological reasons or a stronger environmental consciousness. (However, they are less likely to declare that money is their primary motivation to adopt more environmentally friendly behaviour.)

Third, wealthier people are more likely to have a car and to make holiday-related trips by plane than poorer people (odds = 2.26 and 1.15 respectively, see Table 5.2). Interestingly, income does not correlate with declaring that saving money is the primary motivation for changing behaviour (see Table 5.8). In other words, the desire to save money is not a characteristic specific to poorer respondents: it is a concern that cuts across all categories of income. Moreover, income does not correlate with a call for more legislation and eco-taxes (see Table 5.8), which means that poorer people are as likely to support eco-taxes as wealthier people. Another finding that has relevance for the issue of environ-mental justice is that poorer respondents tend to support the idea that travellers should pay the full environmental cost of plane travel, while wealthier people tend to oppose it (see Table 5.8), even though an increase in eco-taxes would probably strike poorer people harder.

Fourth, like knowledge, the impact of education is somewhat ambivalent. Although people who have higher levels of education are more likely to own a car or fly, when controlling for other factors (such as income or having children), higher education correlates negatively with owning a car (odds = 0.90) but still correlates positively with flying (odds = 1.11, see Table 5.2).

Fifth, almost all families with children at home own a car, but (when control-ling for other factors) they also tend to fly less than families without children at home (odds = 0.56, see Table 5.2). This might be because it is cheaper and often more convenient for families with children to go on holiday by car rather than by plane. People with children also tend to be more altruistic, to disagree with the idea that the effects of climate change are too far in the future to be concerned and to support eco-taxes and more environmental legislation (see Table 5.8). This may indicate that parents are concerned about the consequences of global warming on their children and not just on themselves.

Discussion

Our survey clearly shows that environmental behaviour is multi-faceted, and that behaviours relating to daily consumption, i.e. looking for eco-labels or wash-ing clothes at lower temperatures, differ from choices relating to transport. Daily consumption choices are influenced first of all by altruistic values, norms, feel-ings of personal responsibility and knowledge about climate change, while transport choices are influenced particularly by people's social identity (gender, age, education, income and family structure), even though knowledge, gender and age influence both types of behaviour. In general, we can say that our respon-dents are willing to change some of their behaviour as a result of increased

Table 5.9 Correlation matrix by climate engagement

	Egoism (economic motivation) (dichotomous)	Altruism (dichotomous)	Being leftist (dichotomous)	Motivated by Community (dichotomous)	DK is too small to make a difference	The effects of climate change are too far in the future	Not worth changing behaviour if others do not do the same	Plane travellers should pay the environmental cost	Increase environmental taxes	More environmental regulations	Climate knowledge (dichotomous)
Egoism (economic motivation) (dichotomous)	1										
Altruism (dichotomous)	–0.738***	1									
Being leftist (dichotomous)	–0.096***	0.081**	1								
Motivated by community (dichotomous)	–0.116***	0.085***	0.092***	1							
DK is too small to make a difference	0.107***	–0.127***	–0.207***	–0.036	1						
The effects of climate change are too far in the future	0.126***	–0.149***	–0.162***	–0.001	0.367***	1					

Table 5.9 continued

	Egoism (economic motivation) (dichotomous)	Altruism (dichotomous)	Being leftist (dichotomous)	Motivated by Community (dichotomous)	DK is too small to make a difference	The effects of climate change are too far in the future	Not worth changing behaviour if others do not do the same	Plane travellers should pay the full environmental cost	Increase environmental taxes	More environmental regulations	Climate knowledge (dichotomous)
Not worth changing behaviour if others do not do the same	0.112***	−0.129***	−0.159***	−0.051*	0.334***	0.358***	1				
Plane travellers should pay the full environmental cost	−0.006	−0.001	0.102***	0.113***	0.002	−0.013	−0.014	1			
Increase environmental taxes	−0.062**	0.088***	0.176***	0.126***	−0.104***	−0.133***	−0.092***	0.397***	1		
More environmental regulations	−0.110***	0.097***	0.156***	0.157***	−0.060**	−0.090***	−0.076***	0.194***	0.320***	1	
Climate knowledge (dichotomous)	−0.040	0.059**	0.118***	−0.001	−0.082***	−0.149***	−0.064**	0.012	0.059**	0.016	1

Notes: * $p<0.05$, ** $p<0.01$, *** $p<0.001$.

climate knowledge or social pressure, but that when it comes to transportation, neither of these 'drivers' seem to do the job.

Parallel to this divide between daily consumption and transport, one finds a general divide between economic motivation on the one hand, and moral or social motivation on the other. If daily consumption behaviour can be influenced by the 'soft power' of social pressure and persuasion, it is much more difficult to convince people to change their transport choices, unless one relies on harder tools such as eco-taxes. But even eco-taxes might be insufficient if people are unwilling to save money because it goes against their comfort, their values, or because the savings realised are marginal with regard to their income.

Moreover, there is also a group of people who are sceptics, i.e. those who do not wish to or do not see the point of changing behaviour. These people tend to hold egoistic values, refuse taking responsibility for the collective consequence of individual behaviour, are more immune to social pressure and less inclined to believe that they possess the necessary knowledge regarding climate change.

One can read a certain 'bad faith' among environmental sceptics. They claim to be willing to change behaviour if it allows them to save money, but they nevertheless do not systematically choose the environmentally friendly options that allow them to save money. They claim that it is useless to change behaviour unless everyone else does the same, but they nevertheless are opposed to state intervention that would encourage everybody to change behaviour at the same time (see Table 5.9). They behave as if what mattered most was to be able to continue living as before, without changing anything in their level of current comfort or habits. When people are unwilling to reflect upon the consequences of their acts, are immune to social pressure and insensitive to rational calcula- tions, when two-thirds of the people declare to have a fair knowledge of environmental problems (and are presumably uninterested in learning more) and when behaviour is determined in part by social identity rather than by deliberate choices, the best or only option left to trigger behaviour change might be new legislation, regardless of how unpopular this might be among sceptics.

On the other hand, there is also a core of informants convinced of the urgency of climate problems and the need to change behaviour. They tend to hold altru- istic values, reflect upon the consequences of their actions and take responsibility for them, they respond to social pressure and believe that they have knowledge regarding climate change. This group plays an important role in redefining collective norms, encouraging others to change behaviour and petitioning policy makers to develop new environmental regulations and eco-taxes. They defend altruistic values as well as the personal responsibility of each and every person vis-à-vis the collective consequences of individual behaviour.

Conclusion

In general, our results give greater support to theories that stress the importance of altruism, social pressure, personal ethics and knowledge rather than to theo- ries relying on the maximisation of private benefits when it comes to explaining

people's climate-relevant behaviour. Thus, we found that altruistic values corre-
lated positively with

green behaviour in a number of areas. The same was the case for the motiva-
tion or social pressure brought about by friends, family, colleagues and/or local
community.

Knowledge of climate change issues was also found to be an important factor
in determining climate-friendly behaviour. However, all of these positive 'drivers'
of behaviour change did not have an impact on people's transportation habits
(car ownership and holiday-related plane travel). We conclude that the
car–airline travel category is basically determined by people's social identity
(here measured by gender, age, education, income and family structure, but prob-
ably also related to living and work patterns), and therefore is presumably much
harder to change than behaviour that has to do with shopping routines or energy
savings in the home. It is sometimes not so much what people believe (about the
global or future consequences of local behaviour), what people have become
(altruist, leftist) or what people wish to do (save money), but rather *who people
are* (in terms of age, gender, income and education), which determines how they
behave. This is an important point, although it is usually overlooked by the
different theories on environmental behaviour. The policy implications of our
results are that it is unlikely that 'soft tools' such as information campaigns or
community activities will be able to influence transport behaviour significantly.
In order to do this, 'harder' regulations like taxes or other types of systemic
changes (e.g. improvement of public transportation systems, etc.) are necessary.
And as we can see from our survey, a majority of people support this type of
approach.

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