



Utrecht University

MSc Social Policy and Public Health

Thesis on Existing Data

**Do moral values mediate the political divide on
climate change in the Netherlands?**

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Abstract

Previous research has consistently reported on the association between political ideology and environmentalism. More specifically, that left-wing individuals engage more with environmentalism compared to right-wing individuals. Previous studies in the US indicate that this relationship may be mediated by endorsement in the moral concerns related to care and fairness, also known as individualizing moral foundations. Regression models and multiple mediation models were used to investigate whether this interaction holds true in a non-US context, namely the Netherlands. The results supported the predicted mediating role of individualizing moral foundations, with no mediating effects of the binding moral foundations of loyalty, authority and purity, in the relationship between political ideology and environmentalism. These results indicate that right-wing individuals endorse less in environmentalism due to lower concerns for individualizing moral values compared to left-wing individuals. These findings confirm the important role of moral values in addressing environmentalism to mitigate climate change.

1. Introduction

1.1. Problem statement

Scientists agree that substantial behavioral changes are needed to avert the adverse effects of climate change. The global environment is changing. Although this is a natural phenomenon, human action is accelerating these processes (Doran & Zimmerman, 2009; IPCC Panel, 2014; Oreskes, 2004). It is estimated that the continuation of our current actions will result in substantial consequences for public health (Parise, 2018). To mitigate such problems, lifestyle changes are needed (IPCC Panel, 2014). These lifestyle changes may include support for pro-environmental attitudes, intentions, and behaviors. These aspects together can be broadly defined as 'Environmentalism' (Milfont et al., 2019). Thus, it is important to investigate the determinants of environmentalism.

One of the determinants that is consistently found to impact environmentalism is political ideology (Dunlap et al., 2001; Hornsey et al., 2016; McCright et al., 2016). More specifically, liberal or left-wing oriented individuals demonstrate more engagement with environmentalism compared to conservative or right-wing orientated individuals. As both groups constitute a substantial part of the population, it is important to investigate what factors may explain why these groups differ in environmentalism.

Another determinant of environmentalism is whether an individual perceives climate change as a moral issue (Bamberg & Möser, 2007; Markowitz & Shariff, 2012; Stern et al., 1999). The issue of climate change is mostly framed in moral concerns related to harm and care (Feinberg & Willer, 2013). The level of engagement with environmentalism may be influenced by whether the moral concerns addressed in climate change communication resonate with the morals of the individual receiving that communication (Feinberg & Willer, 2015). Considering the importance of moral arguments in effective communication surrounding climate change and as moral values are stable across cultures, this area requires further research (Doğruyol et al., 2019; Gifford, 2011).

The moral values an individual find most important may be influenced by their political ideology (Hatemi et al., 2019). Liberals are mostly concerned with moral issues regarding harm and fairness, whereas conservatives are equally concerned with issues regarding authority, loyalty, and purity (Graham et al., 2009). These findings suggests that political ideology and moral concerns might interact to explain environmentalism.

To extent on current research, future research could investigate the potential mediating effect of moral values on the relationship between political ideology and environmentalism. Although these previous findings suggest an interaction between political ideology, moral values and environmentalism, studies investigating how these constructs interact to explain environmentalism are scarce (Milfont et al., 2019). To test the implicit interaction suggested by previous findings, a mediation study could be conducted.

Moreover, investigating this interaction in non-U.S. countries may serve as a basis for guiding future climate change interventions. In the U.S., experimental studies demonstrated that climate change communication using moral framing has shown to be effective in decreasing the political divide on environmentalism (Feinberg & Willer, 2019; Wolsko et al., 2016). If these strategies are effective in other countries as well, this may mitigate behavioral issues contributing to climate change across the globe. Investigating the mediating effect of moral values on the relationship between political ideology and

environmentalism in countries other than the U.S. may serve as a basis to guide future climate change interventions on moral framing.

The Netherlands is a potential context to investigate whether the mediating effect of moral concerns on the relationship between political ideology and environmentalism. As mentioned above, the relationship between political ideology and environmentalism, as well as certain moral foundations, is consistent across many countries. Nevertheless, differences in political context may affect the way moral values and political ideology interact. A country that is comparable to the U.S., but has a different political context, is the Netherlands. Therefore, this study will investigate the potential mediating effect of moral values on the relationship between political ideology and environmentalism in the Netherlands.

1.2. Existing research

1.2.1. Political ideology and environmentalism

Political ideology has consistently been associated with environmentalism in the U.S.. A nationwide study, found that conservatives and Republicans were more likely to express beliefs and risk attitudes in contrast with the scientific consensus on climate change compared to liberals and democrats (McCright & Dunlap, 2011). Other studies have reported similar findings (Borick & Rabe, 2010; Hamilton, 2011; Hamilton & Keim, 2009; Hamilton & Saito, 2015). Although beliefs in climate change and pro-environmental attitudes do not necessarily result in behavioral change, liberals also engage more in pro-environmental behavior (Theodori & Luloff, 2002).

Moreover, political ideology is one of the most substantial predictors of environmentalism. The associative effects of political ideology were found to persist even after controlling for other demographic and socio-economic variables correlating with environmentalism. Moreover, the political divide on climate change has been increasing over the past three decades (McCright & Dunlap, 2011). Even though this political divide may be impacted by similar variables such as political party affiliation, self-identified political ideology was a stronger and more consistent predictor of environmental concern compared to political party affiliation (Dunlap et al., 2001).

Although most research regarding political ideology and environmentalism has been conducted in the US, studies in other countries report similar findings. A cross-national study demonstrates that political ideology is one of the main demographic determinants of climate change beliefs (Hornsey et al., 2016). Moreover, the role of conservative political ideology and environmentalism is consistently confirmed in other cross-cultural studies (Hornsey et al., 2018; Milfont et al., 2019).

1.2.2. Morality and environmentalism

Previous research has shown that the issue of climate change often fails to elicit feelings of moral concern. As climate change fails to create strong moral intuitions, it does not motivate an urgent need for action (Markowitz & Shariff, 2012) Thus, enhancing moral concerns about climate change may motivate greater support for pro-environmental actions and policies.

When climate change is perceived as a moral issue, people tend to engage more with environmentalism. Perceiving the environment as a moral issue increases the strength of the environmental attitude (Stern et al., 1999). Moreover, a meta-analysis of the psycho-social

determinants of pro-environmental behavior reported personal moral norms as a significant predictor (Bamberg & Möser, 2007).

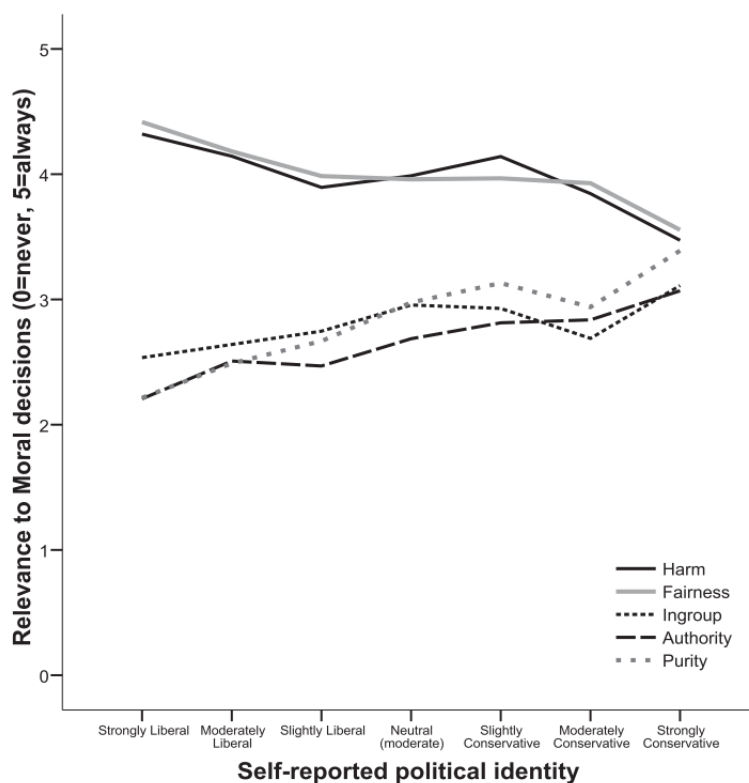
Whether someone perceives climate change as a moral issue, seems to depend on which morals they value. Pro-environmental behaviors were found to be rooted in care-based morality, and to some extent in justice-based morality (Karpiak & Baril, 2008). Moreover, the discourse surrounding climate change communication is largely based on moral concerns related to harm and care (Feinberg & Willer, 2013). Thus, the extent to which individuals engage with environmentalism may be dependent on how morally relevant they consider issues concerning care and justice.

1.2.3. Political ideology and morality

Which morals a person values is associated with which political ideology they believe in. In a recent study, political ideology was shown to predict moral intuitions (Hatemi et al., 2019). More specifically, liberals tend to respond more strongly to moral issues concerning care and fairness, while conservatives value loyalty, authority, and purity as equally morally important, as indicated in Figure 1.

Figure 1

Relevance of moral domains across the political spectrum within the US



Note. Adapted from “Liberals and Conservatives Rely on Different Sets of Moral Foundations” by J.

Graham, J. Haidt and B.A. Nosek, 2009, *Journal of Personality and Social Psychology*, 96(5),

1.2.4. Political ideology, environmentalism, and morality

The previous findings indicate that specific moral values may underly the relationship between political ideology and environmentalism. More specifically, individuals believing in liberal or left-wing political ideology may respond more strongly to moral issues concerning care and fairness, and therefore perceive climate change as a moral issue and are consequently more likely to engage with environmentalism.

Previous studies suggest that moral values may mediate the relationship between political ideology and environmentalism. A previous study reports that both political ideology and moral concerns regarding care, fairness, authority, and purity predict one's stance on social issues such as global warming (Koleva et al., 2012). Moreover, less emphasis on care and fairness has been shown to mediate the relationship between conservative ideology and other social issues (Barnett et al., 2018). Other U.S. studies have demonstrated how framing the environment and climate change in moral arguments concerning loyalty and purity increase the extent to which conservatives support pro-environmental policies and behaviors (Feinberg & Willer, 2019; Feygina et al., 2010; Wolsko et al., 2016).

However, the interaction between political ideology and moral values may be impacted by the unique political context of the U.S. (Ondish & Stern, 2018; VAN HIEL, 2012). Thus, the relationship between political ideology, environmentalism and moral values may differ in the Netherlands.

1.3. Theoretical Framework

Theories on moral reasoning suggest that preexisting ideological beliefs guide our moral judgements. As moral judgements are made to justify preexisting beliefs, ideological values indicate which actions, values and situations are morally right or wrong (REF: Machiavelli 1954; Milgram 1974).

A framework for conceptualizing these moral judgements is the Moral Foundations Theory (MFT) (Graham et al., 2009). Other theories regarding the conceptualization of morality exist (Gray, Schein, & Ward, 2014; Curry, Jones, Chesters & Van Lissa, 2019). However, as the MFT advocates a multi-factor conceptualization of morality and has been the most studied approach to understanding human mortality, this thesis will focus on this framework.

According to the MFT, moral systems around the world share certain universal patterns, reflected in the five moral foundations of Care, Fairness, Loyalty, Authority and Purity. The Care foundation concerns issues related to suffering and care for others. The Fairness foundation concerns issues related to justice, equality, and cheating. The Loyalty foundations concerns issues related to ingroup- and outgroup rights. The Authority foundation concerns issues related to traditions, respect, and societal order. The Purity foundations concerns issues related to sacredness, holiness, and disgust. These foundations are divided among two domains, with the individual domain consisting of Care and Fairness, and the binding domain consisting of Loyalty, Authority and Purity. (Dickinson et al., 2016)

When the issue of climate change is framed in congruence with our moral foundations, it may be perceived as a moral issue. Theory on moral framing suggests that when an issue is framed in moral arguments that resonates with someone's fundamental moral convictions, they are more likely to evaluate the argument positively and revise their relevant attitudes as a

result(Feinberg & Willer, 2019)Thus, through the mechanism of moral framing, the issue of climate change may be perceived as a moral issue to those who find the Care and Fairness foundation morally relevant.

When climate change is perceived as a moral issue, people are more likely to demonstrate pro-environmental attitudes and behaviors. Moral values have shown to be particularly strong determinants of one's attitudes and behaviors (Stern et al., 1999). When attitudes are rooted in morality, they become intertwined with emotion and intuition (Haidt, 2001). When individuals view pro-environmental attitudes and behaviors as moral, it increases their awareness of the consequences of their behavior on the environment and they are more likely to feel personally responsible for these consequences.

These theories may also explain the political divide on climate change in the Netherlands as well. Previous reports have stated a connection between right-wing parties and climate skepticism in the Netherlands (Dewulf et al., 2017). Moreover, Moral Foundations Theory has been supported in a Dutch population (Doğruyol et al., 2019). Nevertheless, the Netherlands has a different political context. First, the Netherlands defined politics in left-right, which differs from the liberal-conservative distinction in the U.S. (Aspelund et al., 2013). Second, the abundance of political parties may reinforce diverse political ideologies compared to the bi-party system of the U.S. Thus, a mediation effect may be less intense due to a weaker association between political ideology and moral values in the Netherlands.

1.4. The current study

The purpose of the study was to explore whether moral values underlie the effect of political ideology on environmentalism in the Netherlands. The study aims to extent on previous research in multiple ways.

Firstly, by explicitly investigating the mediating effect of moral values on the relationship between political ideology and environmentalism. Previous research has solely reported the separate relationships between political ideology, moral intuitions, and environmentalism. By investigating mediation, this study aims to confirm the underlying interaction suggested by the combination of these findings.

Secondly, this study will investigate this interaction in a non-US context, in the Netherlands. The few studies that did investigate the interaction between political ideology, moral values, and environmentalism, have all been performed in the U.S. Investigating this relationship in a different political context will demonstrate the generalizability of these previous findings.

Thirdly, this study aims to investigate this relationship employing one of the broadest definitions of an individuals' stance regarding climate change, namely environmentalism. Most previous studies investigate the relationship between political ideology or moral values on only one aspect of environmentalism, such as climate change beliefs, pro-environmental attitudes, personal behavior or public attitudes. By including all these aspects into the single definition of environmentalism, this study aims to increase the robustness of our findings.

Based on the empirical findings and the theoretical framework described above, several hypotheses were constructed. A visual overview of these hypothesis is depicted in the Figure 2. It is hypothesized that:

H1: Political ideology would be associated with environmentalism. More specifically, that left-wing political ideology would be positively associated with environmentalism and right-wing political ideology would be negatively associated with environmentalism.

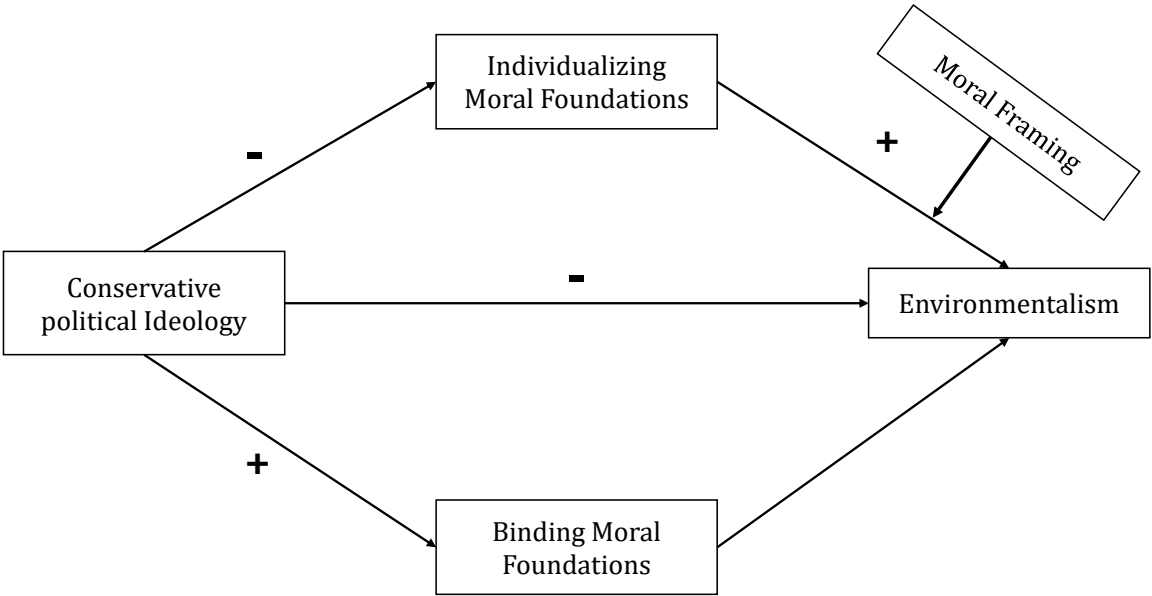
H2: Endorsement in specific moral foundations would be associated with environmentalism. More specifically, that higher endorsement in the individualizing moral foundations would be positively associated with environmentalism (H2A) and higher endorsement in the binding moral foundations would no effect on environmentalism (H2B).

H3: Political ideology would be associated with endorsement in specific moral foundations. More specifically, that left-wing political ideology would predict higher endorsement in individualizing moral foundations (H3A) and that right-wing political ideology would predict higher endorsement in the binding moral foundations (H3B).

H4: Endorsement in the individualizing moral foundations mediates the effect of political ideology on environmentalism. More specifically, that higher endorsement in the individualizing moral foundations mediates the positive effect of left-wing political ideology on environmentalism (H4A) and that higher endorsement in the binding moral foundations have no effect on the negative effect of right-wing political ideology on environmentalism (H4B).

Figure 2

Conceptual model of the ideological divide on Environmentalism through the individualizing moral foundations, moderated by the moral framing of climate change in individualizing moral foundations.



Note. The moderation by the moral framing of climate change in individualizing moral foundations is not included in this study.

2. Methods

2.1. European Social Survey

2.1.1. Design & Procedures

I will analyze data from the eight wave of the European Social Survey (ESS), which was collected in 2016 (ESS, 2016). This dataset includes data on 6 general modules, of which this study uses 'Politics', 'Gender and Household', 'Socio demographics' and 'Human Values'. The two additional modules of this version constituted 'Public attitudes to climate change, energy security and energy preferences' and 'Welfare attitudes'. The full questionnaire and the complete European Social Survey Round 8 dataset can be downloaded from <http://www.europeansocialsurvey.org>.

This dataset was used, as it contains data on all three constructs. More specifically, although the ESS does not contain the moral foundations questionnaire normally used to measure the moral foundations, the additional module of 'Welfare attitudes' on top of the general module of 'Human Values' allowed for a broad range of potential items that could be used as proxies for the moral foundations' questionnaire. Moreover, the additional module on climate change contained information on multiple aspects of environmentalism, allowing for a comprehensive measurement of this construct.

2.1.2. Participants & sampling

The ESS used strict random probability sampling to obtain nationally representative samples. Interviews were conducted face-to-face in respondents' own homes. Data were collected, usually within three-month, in the period from August 2016 to December 2017. Post-stratification weights were used to take account of unequal probabilities of selection, as well as of sampling and non-response error.

Only data from the Netherlands was included. Participants aged below 18 were excluded, as 18 years is the legal voting age in the Netherlands. Participants with missing values any of the variables included in this study will be excluded. After removing missing values on any of the variables and removing participants below 18 yrs of age, the sample consisted of 1418 Dutch respondents (46,0% male, 54,0% female), with a mean age of 51,61 (SD = 17,90, range = 18 - 95).

2.2. Variables

2.2.1. Environmentalism

Using the ESS, we analyzed environmentalism on three aspects, namely individuals' climate change attitudes and personal- and public behavioral intentions, based on conceptualizations of environmentalism in previous studies (Milfont, 2019; Desrochers, 2019; Roman, 2021).

The participants were asked about their attitudes on climate, using 1 item: 'How worried are you about climate change?' (1 = 'Not at all worried' to 5 = 'Extremely worried').

The participants were also asked about their personal behavioral intentions, using 2 items: 'How likely is it that you would buy the most energy efficient home appliance?' (0 = 'Not at all likely' to 10 = 'Extremely likely') and 'In your daily life, how often do you do things to reduce energy use?' (1 = 'Never' to 6 = 'Always'). A principal component analysis (PCA) and Cronbach's alpha (CA) reliability test were conducted to justify combining these items into a single measure of personal behavioral intentions. The PCA factor loadings for both items were .824, and Cronbach's alpha is .526. We therefore calculated a mean score for each respondent across the two items.

The participants were also asked about their public behavioral intentions to support climate change policies, using 3 items measuring their approval of the following actions: ‘To what extent are you in favor of or against the following policies in the Netherlands to reduce climate change?’: ‘increasing taxes on fossil fuels, such as oil, gas and coal’, ‘using public money to subsidize renewable energy such as wind and solar power’, ‘a law banning the sale of the least energy-efficient household appliances’ (1 = ‘strongly in favor’ to 5 = ‘strongly against’). The PCA factor loadings for the items were .716, .741 and .703, respectively and Cronbach’s alpha is .521, justifying combining them into a single measure. We therefore calculated a mean score for each respondent across all items.

. A factor analysis was conducted on the 3 aspects to verify whether they could be combined onto a single variable.¹ Together with a Cronbach’s alpha of .575 (calculated for the 6 items), this justified combining these aspects into the variable of “Environmentalism”.

2.2.2. Political ideology

Political ideology was measured using left–right identification, by asking: ‘In politics, people sometimes talk of ‘left’ and ‘right’. Using this card, where would you place yourself on this scale?’ (1 = left to 10 = right). The score as reverse coded to ensure that a high score meant stronger identification with left-wing orientation. One-item political ideology scale, involving left-right (or liberal-conservative) classification, has been demonstrated as having sufficient power to predict moral foundations (Graham et al., 2009).

2.2.3. Moral values

Moral foundations are measured with the Moral Foundations Questionnaire (Graham et al., 2013). As this questionnaire was not part of the ESS, different questions were selected from the ESS that aligned with each of the moral foundations. To increase the validity of this measurement, the questions were selected based on their alignment with one of the 6 items used in the MFQ to measure each of the moral foundations. Certain items were reverse coded, to ensure that a higher score meant higher endorsement with the particular moral foundation.

As the Cronbach’s alpha for the separate moral foundations was below 0,5 (except for the fairness foundation), the moral foundations were combined into individualizing and binding moral foundations. A FA and CA test were used to justify combining these items into single variables of ‘individualizing moral foundations’ and ‘binding moral foundations’.² The CA was .500 and .557, respectively.

2.2.3.1. Individualizing foundations

2.2.3.1.1. Care foundation

An index of the Care foundation was made using 2 items of the ESS. The ESS item ‘Important to help people and care for others well-being’ (1-6 scale; 1= very much like me to 6=not like me at all) was used to align with the MFQ item ‘Compassion for those who are suffering is the most crucial virtue’. The ESS item ‘Refugees whose applications are granted should be entitled to

¹ A factor analysis was conducted on the 3 aspects to verify whether they could be combined onto a single variable. A principal axis factor analysis (FA) was conducted on the 3 aspects with oblique rotation (direct oblim). The Kaiser-Meyer-Olkin measure verified the sampling adequacy for the analysis, and the KMO values for individual items were greater than .5, which is the acceptable limit (Kaiser, & Rice, 1974). An initial analysis was run to obtain eigenvalues for each factor in the data. One factor had an eigenvalue over Kaiser’s criterion of 1 and in combination explain 47,819% of variance. The scree plot showed an inflexion that justified retaining one factor.

² The outcome from the factor analysis differed from theory, as the moral foundations didn’t align perfectly with the two domains as stated in the MFT.

bring close family members' (1=agree strongly to 5 = disagree strongly) was used to align with the MFQ item of 'Whether or not someone cared for someone weak or vulnerable'.

2.2.3.1.2. Fairness foundation

An index of the Fairness foundation was made using 3 items of the ESS. The ESS item 'Important that people are treated equally and have equal opportunities' (1-6 scale; 1= very much like me to 6=not like me at all) was used to align with the MFQ item 'Whether or not some people were treated differently than others. The ESS item 'Government should reduce differences in income levels' (1=agree strongly to 5 = disagree strongly) was used to align with the MFQ item of 'When the government makes laws, the number one principle should be ensuring that everyone is treated fairly'. The ESS item 'For fair society, differences in standard of living should be small' (1=agree strongly to 5 = disagree strongly) was used to align with the MFQ item of 'I think it's morally wrong that rich children inherit a lot of money while poor children inherit nothing.

2.2.3.2. Binding foundations

2.2.3.2.1. Authority foundation

An index of the Authority foundation was made using 2 items of the ESS. The ESS item 'Important to follow traditions and customs' (1-6 scale; 1= very much like me to 6=not like me at all) was used to align with the MFQ item 'Whether or not someone conformed to the traditions of society. The ESS item 'Important to do what is told and follow rules' (1-6 scale; 1= very much like me to 6=not like me at all) was used to align with the MFQ item of 'If I were a soldier and disagreed with my commanding officer's orders, I would obey anyway because that is my duty.

2.2.3.2.2. Loyalty foundation

An index of the Loyalty foundation was made using 2 items of the ESS. The ESS item 'Important to be loyal to friends and devote to people close' (1-6 scale; 1= very much like me to 6=not like me at all) was used to align with the MFQ item 'People should be loyal to their family members, even when they have done something wrong.. The ESS item 'How emotionally attached to the Netherlands' (0-10 scale; 0 = not at all emotionally attached to 10 = very much emotionally attached) was used to align with the MFQ item of 'Whether or not someone's action showed love for his or her country

2.2.3.2.3. Purity foundation

An index of the Purity foundation was made using 1 item of the ESS. The ESS item 'Important to behave properly' (1-6 scale; 1= very much like me to 6=not like me at all) was used to align with the MFQ item 'Whether or not someone violated standards of purity and decency.

2.2.4. Demographics

Gender and sex will be used as control variables. The participants' gender will be indicated as 0 or 1 for males and females, respectively. The participants provided their age, scaled as a continuous variable.

2.3. Statistical Analysis

SPPS will be used to clean, analyze, and present the data. All variables are measured as continuous variables in the analyses. Before the analyses, the mean, standard deviation, and Cronbach alpha were computed for each of the scale scores.

To assess the prerequisite correlations necessary for mediation, preliminary linear regression analyses were used to compute the regression coefficient for the following relationships. First, to investigate the effect of political ideology on each of the dependent variables of environmentalism. Second, to investigate the effect of each of the moral foundations, as well as the individualizing and binding foundations together, on each of the dependent variables of

environmentalism. Lastly, to investigate the effect of political ideology each of the moral foundations, as well as the individualizing and binding foundations.

To explore the relative contributions of the individualizing and binding foundations in mediating between political ideology and each of the dependent variables of environmentalism (Model 4, PROCESS (Hayes, 2013)), multiple mediation models were used and the R² and the beta coefficient were calculated. Gender and sex were used as control variables in this model.

3. Results

3.1. Preliminary analyses

To test whether political ideology impacts environmentalism, and if so, whether someone's endorsement in specific moral foundations may help explain this relationship, regression analyses and mediation analyses were performed.

First, however, some preliminary analyses were conducted, as shown in Table 1. Environmentalism showed a positive relationship with all three predictors, but only slightly so to the binding moral foundations. Moreover, left wing political ideology was positively correlated with endorsement in the individualizing moral foundations and negatively correlated with endorsement in the binding moral foundations.

Table 1

Bivariate correlations and descriptive statistics for the variables of interest

Variables	1	2	3	4	Scale	Mean	SD
1 Environmentalism	1	.19***	.29***	.06***	1 - 6	4.07	0.68
2 Political ideology		1	.38***	-.16***	0 - 10	4.81	1.95
3 Individualizing moral foundations			1	.11***	1 - 6	4.31	0.64
4 Binding moral foundations				1	1 - 6	4.33	0.67

Note. Bivariate correlations noted as Pearson correlation coefficient. In political ideology scale, 0 = Right and 10 = Left. In all other scales, 1 = disagree strongly and 6 is agree strongly.

*** = $p < .001$

3.2. Regression analyses

Hierarchical multiple regression analyses were used to determine whether political ideology, individualizing moral foundations and binding moral foundations predicted environmentalism. As shown in Table 2, the regression analyses consisted of 3 steps: In step 1, gender and age were entered to control for the effect of demographic variables; in step 2, Political ideology was added to the model and in Step 3, both individualizing moral foundations and Binding moral

foundations were entered as predictor variables of Environmentalism. There was no indication of multicollinearity in these regression models (tolerance < .9, VIF < 1.2).

Gender and age significantly impacted environmentalism. With the addition of the predictor variables, only the impact of gender remained significant, while the impact of age disappeared. It was hypothesized that (H1) left-wing political ideology would be positively associated with environmentalism. Political ideology significantly impacted environmentalism, explaining 3% of the variance, in line with hypothesis H1.

It was hypothesized that (H2A) higher endorsement in individualizing moral foundations would be positively associated with environmentalism. The individualizing moral foundations did significantly impact environmentalism, in line with hypothesis H2A. Moreover, it was hypothesized that (H2B) higher endorsement in binding moral foundations is not associated with environmentalism. The binding moral foundations did not show a significant impact, in line with hypothesis H2B. Together, the moral foundations explained 4.7% of the variance in Environmentalism.

Table 2

Linear models of predictors of environmentalism

Variables on Environmentalism	Model 1			Model 2			Model 3		
	b	SE B	β	b	SE B	β	b	SE B	β
Constant	3.71*** (3.56, 3.87)	.08		3.44*** (3.26, 3.61)	.09		2.49*** (2.18, 2.80)	.16	
Gender	.14*** (0.07, 0.21)	.04	.10	0.11** (0.04, 0.18)	.04	.08	.07* (0.00, 0.14)	.04	.05
Age	.00** (0.00, 0.01)	.00	.07	.00** (0.00, 0.01)	.00	.07	.00 (0.00, 0.00)	.00	.04
Political ideology				0.07*** (0.05, 0.09)	.01	.19	.04*** (0.02, 0.05)	.01	.10
Individualizing moral foundations							.24*** (0.19, 0.31)	.03	.23
Binding moral foundations							.04 (-0.01, 0.10)	.03	.04
	R ² = 0,02***			Δ R ² = 0,03***			Δ R ² = 0,05***		

Note. * = p < .05, ** = p < .01 *** = p < 0,001

In order to test (H3) whether political ideology predicts endorsement in certain moral foundations, another regression analysis was conducted, as shown in Table 3. It was hypothesized that (H3A) left-wing political ideology would predict higher endorsement in individualizing moral foundations and that (H3B) right-wing political ideology would predict

higher endorsement in the binding moral foundations. The individualizing moral foundations were significantly impacted by the control variables, gender and age, as well as political ideology, which accounted for 4,5% and 14% of the variance, respectively. The binding moral foundations were significantly impacted by gender, but not age. Moreover, political ideology had a negative significant impact on the binding moral foundations, only accounting for 2% of the variance. These findings are in line with hypothesis H3A and H3B.

Table 3

Linear models of predictors of the moral foundations

Variables on	Model 1			Model 2		
	b	SE B	β	b	SE B	β
Individualizing moral foundations						
Constant	3.718*** (3.57-3.86)	.07		3.19*** (3.04, 3.34)	.08	
Gender	.21*** (0.14-0.27)	.03	.16	.15*** (0.09, 0.21)	.03	.12
Age	.01*** (.00-.01)	.00	.15	.01*** (.00, .01)	.00	.16
Political ideology				.12*** (.11, .14)	.01	.37
	$R^2 = .05^{***}$			$\Delta R^2 = .14^{***}$		
Binding moral foundations						
Constant	3.74*** (3.59, 3.89)	.08		3.97*** (3.80, 4.13)	.08	
Age	.01*** (.01, .01)	.00	.26	.01*** (.01, .01)	.00	.26
Gender	.05 (-.01, .12)	.04	.04	.08* (.01, .15)	.03	.06
Political ideology				-.05*** (-.07, -.04)	.01	-.16
	$R^2 = .07$			$\Delta R^2 = .02$		

Note. * = $p < .05$, ** = $p < .01$ *** = $p < 0,001$

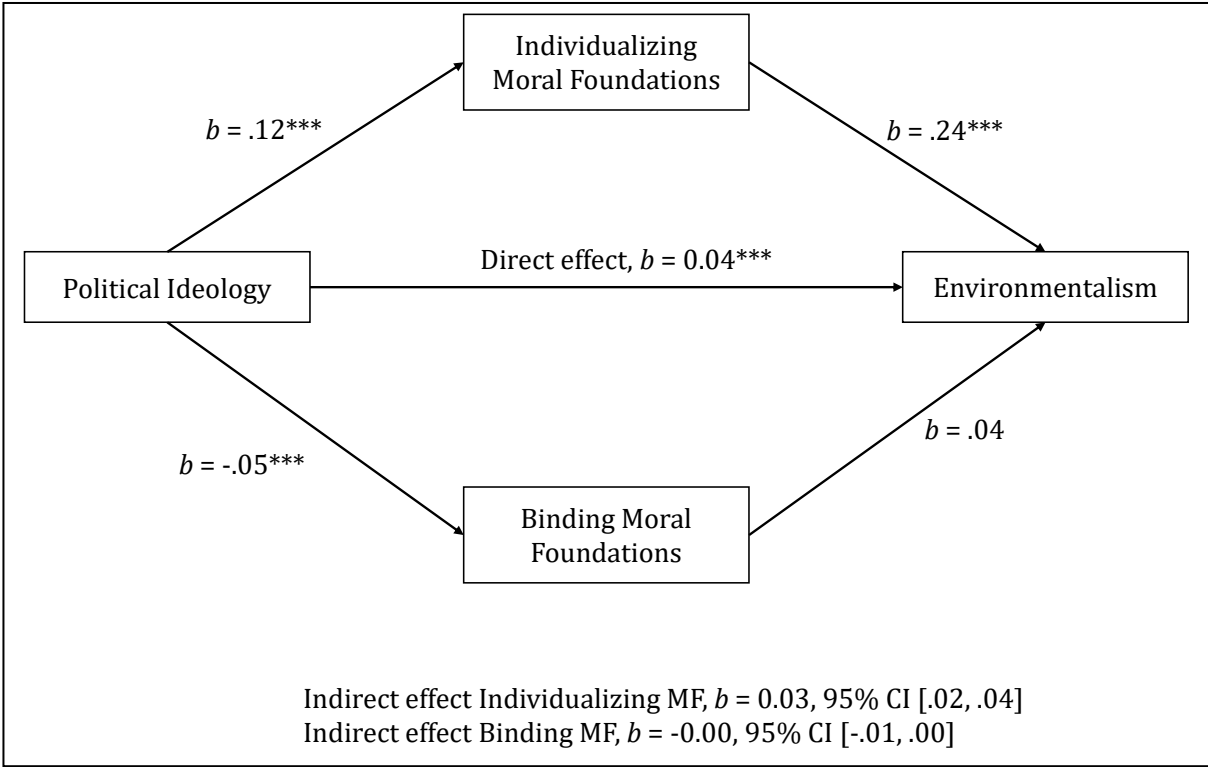
3.3. Mediation analysis

To test (H4) whether political ideology predicts environmentalism through the endorsement of individualizing moral foundations (H4A) and the binding moral foundations (H4B), a mediation analysis was performed using PROCESS. The outcome variable for the analysis was environmentalism. The predictor variable was political ideology. The mediator variables were the individualizing moral foundations and binding moral foundations. Age and gender were included in the model as control variables.

The mediation model is shown in Figure 3. The indirect effect of political ideology on environmentalism through the individualizing moral foundations was found to be statistically significant, in line with hypothesis H4A. In contrast, the indirect effect of political ideology on environmentalism through the binding moral foundations was not statistically significant, in line with hypothesis H4B.

Figure 3

The results of the multiple mediation model estimating the of political ideology on environmentalism through the individualizing and binding moral foundations



Note. Arrows represent the standardized regression coefficients.

*** $p < .001$

4. Discussion

4.1. Main findings

The present research investigated whether the predictive effect of political ideology on environmentalism holds true in a Dutch Sample, and if so, whether this effect could be explained through an individual's moral concerns. The results of this study supported my hypotheses on the association of political ideology with environmentalism, and the roles played by the endorsement of individualizing moral foundations, as specified by the Moral Foundations Theory (MFT).

Consistent with previous findings, self-reported left-wing political ideology was positively associated with environmentalism (Borick & Rabe, 2010; Hamilton, 2011; Hamilton & Keim, 2009; Hamilton & Saito, 2015; Mccright & Dunlap, 2011; Milfont et al., 2019). Moreover, this study found that this relationship was mediated by higher endorsement in the individualizing moral foundations, thereby going beyond previous literature reporting solely the predictive effect of left-wing political ideology on the individualizing moral foundations (Hatemi et al., 2019) or the predictive effect of the individualizing moral foundations on pro-environmental attitudes (Feinberg & Willer, 2013), personal behaviors (Vainio & Mäkinen, 2016) or public behaviors (Koleva et al., 2012). These findings suggest that left-wing oriented individuals are more concerned with the environment compared to right-wing oriented individuals, in part due of their relative moral concerns regarding harm & fairness.

In contrast, the relationship between political ideology and environmentalism was not impacted by the binding moral foundations. Right-wing political ideology did predict higher endorsement in the binding moral foundations. Although previous studies have indeed reported a positive association between the binding moral foundations and right-wing political ideology (Graham et al., 2009; Koleva et al., 2012; Milfont et al., 2019; Vainio & Mäkinen, 2016; Van Leeuwen & Park, 2009), our study adds to the scarce literature investigating and reporting the predictive effect of political ideology on the binding moral foundations (Barnett et al., 2018; Hatemi et al., 2019), in contrast to the MFT that builds on the premise that the moral foundations predict political ideology.

However, higher endorsement in the binding moral foundations did not significantly impact environmentalism. Previous research has reported contrasting findings on the association between the binding moral foundations and environmentalism, with studies reporting a predictive effect of the binding moral foundations on pro-environmental personal behaviors (Vainio & Mäkinen, 2016) or the predictive effect of purity (but not authority and loyalty) on pro-environmental public behaviors. Nevertheless, our findings suggest that although right-wing orientated individuals are relatively more concerned with moral issues regarding authority, loyalty and purity, this has no impact on their relative lower concern for environmentalism.

4.2. Evaluation of the study

This study uses secondary data, relying on self-report data and correlational research design. This research design enabled a large sample size, which increases the reliability of these findings, at least in Dutch context. However, because this dataset relies on self-report data and correlational research design, the statistical predictions in this study cannot imply causal connections between the variables. Therefore, future studies could conduct experimental research to further explore the causal relationships between individuals' political, moral and environmental standpoints.

Moreover, this research design limited the measurement of moral foundations, as the MFT questionnaire was not included in the ESS, this study used other items in the ESS to serve as replacement for the MFT questions. As a result, not all aspects of the moral foundations could be represented in our study, as not all items of the MFQ had a comparable replacement in the

ESS. As the Cronbach's alpha of the resulting moral foundations was too low to use in further analyses, the analyses were performed using the overarching domains of the individualizing- & binding moral foundations. As a result, no conclusions can be drawn on the mediating effect of the separate moral foundations in the relationship between political ideology and environmentalism. Moreover, the relatively low Cronbach's alpha of the individualizing moral foundations and binding moral foundations indicate a low reliability of these variables.

Moreover, the MFQ, on which our questions are based, measures general endorsement in the moral foundations. To improve the accuracy of our findings on the relationship between political ideology and moral values on environmentalism, future research could extend on this measuring issue-specific morality.

Nevertheless, the construct of morality was based on the MFT of the 5 moral foundations, ensuring a broad definition of moral concerns.

Furthermore, the ESS measures several aspects environmentalism. This enabled that the variable of environmentalism is based on a combination of different measurements of pro-environmental attitudes and -behaviors to capture the multitude of aspects of environmentalism and increasing the reliability and generalizability of our findings.

Lastly, this study extends of previous research by focusing on the relationship between political ideology, environmentalism and moral values in a non-US context, the Netherlands. Consequently, by solely including Dutch participants these findings may be less generalizable to populations in other countries.

4.3. Implications for future research

As we used proxies for the MFQ in this study, it is suggested to replicate this study, using the official MFQ, adjusted to specifically measure individuals' moral values regarding environmentalism. Such a study is useful not only to confirm the findings and also to hopefully get a deeper understanding as to how much each moral value accounts for the relationship between overarching domains of the individualizing moral foundations and binding moral foundations with the other variables

Previous studies show that individualizing moral foundations and binding moral foundations are not necessarily linked to environmentalism in a conceptual way. Because changing the framing of environmental issues from individualizing moral foundations to binding moral foundations has been shown to convince right wing individuals to support environmentalism more and thereby reduce the environmentalism gap between left and right. As environmentalism has been known to be framed in morals regarding care (ref.), previous studies suggest that this framing may be the reason liberals and individuals more concerned with individualizing moral foundations are more concerned with the environment. Although our study has not measured the framing of environmental issues in Dutch context, our findings indicate that this may also be the case in the Netherlands. Therefore, experimental studies framing environmental issues in values other than individualizing moral foundations may be helpful in persuading right wing individuals to endorse more in environmentalism. A potential candidate for this may be the binding moral foundations, as this study shows the positive relationship between right wing individuals and the binding moral foundations and previous studies have shown how a binding moral foundations frame of environmental issues has persuaded right wing individuals to support environmental issues. However, another potential candidate may be the moral foundations of liberty. This foundation was not measured in this study due to a low Cronbach's alpha of the foundation making the measurement to unreliable for use, but previous studies suggest that both liberals, conservatives and even other political ideologists (libertarians) value moral concerns regarding liberty (Iyer, 2012).

In practice, this means that campaigns aimed to communicate environmental issues and stimulate pro-environmental attitudes and behaviors should make sure that they don't solely frame these issues in individualizing moral foundations, but instead focus on relying on other (moral values) that trigger right-wing individuals, such as the binding moral foundations or liberty morals as mentioned above.

In conclusion, this study aims to form the basis to continue a line of research, that is already prevalent in the US and other countries, in Dutch Context. As the political divide in climate change attitude indicates that the current climate change communication is not inclusive, new ways of communicating climate change issues are necessary to give rise to the collective pro-environmental response that is needed to evade the bad climate change consequences.

The findings from this study confirms that the hypothesis that moral issues are an important factor in determining engagement with environmentalism in different political groups, holds up outside U.S. context. In combination with the existing knowledge on moral framing, these findings imply that effective climate change communication, and consequently the mitigation of the adverse effects of climate change, is within our reach.

5. References

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Appendix A: Ethical approval form

<p>P.O. Box 80140, 3508 TC Utrecht</p> <p>The Board of the Faculty of Social and Behavioural Sciences Utrecht University P.O. Box 80.140 3508 TC Utrecht</p>	<p>Faculty of Social and Behavioural Sciences</p> <p>Faculty Support Office Ethics Committee</p> <p>Visiting Address</p> <p>Padualaan 14 3584 CH Utrecht</p>
<p>Our Description 21-0178</p> <p>Telephone 030 253 46 33</p> <p>E-mail FETC-fsw@uu.nl</p> <p>Date 08 February 2021</p> <p>Subject Ethical approval</p>	

ETHICAL APPROVAL

Study: Thesis "Do moral values mediate the political divide on climate change in the Netherlands?"

Principal investigator: L.M.B. van Groeningen

Supervisor: Michelle Bal

This student research project does not belong to the regimen of the Dutch Act on Medical Research Involving Human Subjects, and therefore there is no need for approval of a Medical Ethics Committee.

The study is approved by the Ethics Committee of the Faculty of Social and Behavioural Sciences of Utrecht University. The approval is based on the documents send by the researchers as requested in the form of the Ethics committee and filed under number 21-0178. The approval is valid through 24 June 2021. Given the review reference of the Ethics Committee, there are no objections to execution of the proposed research project, as described in the protocol and according to the GPDR It should be noticed that any changes in the research design oblige a renewed review by the Ethics Committee by submitting an amendment

Yours sincerely,

image not found or type unknown



Peter van der Heijden, Ph.D.
Chair