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Polarization in sustainability?

The explanatory power of concern and left-right placement on environmentally significant behaviors among Swedes

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Abstract

Environmentally significant behavior is becoming an increasingly relevant topic in environmentally focused research, which aims to explain why people adopt these behaviors and thus understand how sustainability can be promoted. A long-held perception of environmental behavior is that it is more commonly occurring among “leftists” because they have been shown to exhibit higher levels of environmental concern. Concern has, however, widely been deemed insufficient as a predictor of environmentally significant behavior. In this study, a series of linear regressions are conducted using data from the SOM (2018) National survey, to determine how polarized environmental behavior is among the Swedish public and to what extent left-right placement predicts this behavior. This by comparing the explanatory power of left-right placement and two forms of environmental concern on recycling and consumption habits. I also study differences in environmental concern between people on the left and the right and find that rightists express higher levels of concern for environmental destruction than for climate change. My main finding is that left-right placement has a weaker relationship with environmentally significant behaviors than environmental concern, and that the correlation between left-right placement and recycling behavior, specifically, is virtually nonexistent. This study therefore contradicts previous studies linking left-right placement to environmentally significant behavior. I theorize that this could indicate the presence of a more widespread norm surrounding recycling and propose that future research explore this further.

Keywords: environmentally significant behaviors, environmental concern, left-right placement, recycling, sustainability

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1. Introduction

Climate change and environmental destruction are typically considered to be leftist political issues. Indeed, there is empirical support for the notion that the environment is of bigger priority to those who identify as leftist on a left-right scale (Oscarsson & Holmberg, 2015:268). But the Swedish political landscape is becoming increasingly depolarized (ibid.: p.264), which could mean that the previously clear connection between the left and environmental concern is diminishing in importance. Meanwhile, some studies note that environmental concern and attitudes do not appear to correspond with all forms of environmentally significant behaviors (Martinsson & Lundqvist, 2010; Turaga, Howarth & Borsuk, 2010; Bratt, Stern, Matthies & Nenseth, 2015). Thus, it becomes relevant to ask the question if everyday actions that could be considered environmentally significant are truly as polarized and intertwined with left-right placement as is commonly suggested.

The objective of the study is to clarify the relationship between left-right placement, environmental concern and environmentally significant behaviors, specifically through survey data and as applies to the Swedish case. While the literature asserts that the political right is less likely to adopt environmentally significant behaviors (Choma, Hodson, Jagavat & Hoffarth, 2020), I argue that there is reason to believe that such behavior is not as conditioned by left-right division as the research alleges. Instead, I contend that (a) some forms of environmentally significant behavior are likely shaped by widespread social norms in Swedish society and are thus not reliant on environmental concern, and (b) the right responds differently to different forms of behavior and concern depending on their nature. I argue, for instance, that rightists should express higher levels of concern for the environment when it affects their ‘in-group’, and that recycling should be less polarized than other environmental behaviors.

An analysis of the aforementioned issues will be conducted based on the results of three central research questions: Does left-right placement indicate different levels of environmental concern? Does left-right placement indicate different levels of environmentally significant behavior? How much explanatory power do concern and left-right placement have as predictors of environmentally significant behavior?

The outline of the study is as follows: first, previous research on the subject as well as the theory will be presented, followed by my hypotheses. Next, I will discuss my use of data and

variable operationalizations. Finally, the results of the analysis will be accounted for, discussed and related to both past and future research.

2. Previous research

The deteriorating environment is commonly described as a collective action problem, which constitutes a social dilemma, meaning a conflict between self-interest and what lies in the interests of the collective in the longer term (Ostrom, 1998). Solutions to these problems are usually discussed in terms of cooperative and defective behavior among different types of people, or the willingness to make personal sacrifices for collective benefits (Davidovic, Harring & Jagers, 2020). But as sustainable lifestyles have become more mainstream, so too have various forms of voluntary individual actions been normalized outside of the political and activist arenas (Thomas & Sharp, 2013).

Predictors of environmentally significant behaviors have long been sought to understand who adopts these lifestyles and how we can promote them further in order to decrease our joint environmental impact and live more sustainably. Value orientations and environmental attitudes have notably been deemed insufficient as predictors of individual behavior (Bratt et al., 2015; Choma et al., 2020; Lee, Kim, Kim & Choi, 2014). Attitude changes have also proved to be inessential to behavioral changes pertaining to the environment (Martinsson & Lundqvist, 2010). As such, there is a multitude of reasons to engage in environmentally significant behaviors that do not first and foremost pertain to the environment (Lee et al., 2014:2098). Recycling, for instance, has proved to be predicted by environmental attitudes only when access to recycling stations is in question (Bratt et al., 2015:438). In another study, many questionnaire respondents' behavioral motivations pertained to health and economy and were essentially unrelated to environmental attitudes (Jagers, Linde, Martinsson & Matti, 2017).

Some international studies have previously been conducted on the relationship between left-right placement and environmental concern and behavior. For instance, both the left and the right have been shown to demonstrate (activist) engagement in collective action problems, such as the environment, depending on the core values that are involved and how they resonate with people (Choma et al., 2020:306). In the U.S., environmental attitudes have been far more ideologically polarized than in Sweden, which is due in part to liberals regarding environmental issues in terms of morality. When they were reframed to connote purity rather than morality,

the differences in attitudes between liberals and conservatives were “largely eliminated” (Feinberg & Willer, 2012:56).

To summarize, previous research has made the case that environmental concern matters for the adoption of environmentally significant behaviors, but that it does not tell the whole story. There are conflicts in the literature about how behaviors can be shaped and predicted. Furthermore, there is a gap in the research concerning everyday behaviors and their relationship with left-right placement, particularly as applies to Sweden. The literature suggests that polarization of concerns and attitudes is both conditional and an insufficient predictor of environmentally significant behaviors. Thus, a comparison between the explanatory power of concern and left-right placement could determine if ideological polarization constitutes a problem for the promotion of sustainability.

3. Theory

3.1 Environmentally significant behavior

Environmentally significant behaviors can be defined as actions that have a positive impact on the environment, which in the case of this study refer to nonactivist behavior in the private domain (Martinsson & Lundqvist, 2010). Prominent examples of this are recycling, decreased consumption and the consumption of eco-friendly products, as well as using alternative transportation to cars and airplanes. Other terms are used to signify this kind of behavior in environmentally oriented research, including pro-environmental, green and environmentally responsible (Lee et al., 2014:2098). Many of them, however, imply an evaluation of the motives for these behaviors, which might be unnecessary from the standpoint of promoting sustainability (Martinsson & Lundqvist, 2010).

3.2 What shapes behavior?

A point of contention in environmental research has long been how environmentally significant behaviors are formed. Some researchers describe people as ‘rational actors’, based on an economic model which assumes that behavior is guided by self-serving cost-benefit analyses, whereas other studies have shown “that people are sensitive to the behavior of others and are not strictly self-interested” (Byerly et al., 2018:159). Schwartz’s norm activation model posits that social norms are partly internalized and made a part of individuals’ personal norms, which

are closely related to the behavior that is subsequently acted out (Nigbur, Lyons & Uzzell, 2010:261). This theory builds on morality as a key motivator for environmentally significant behaviors; for personal norms to be translated into action, individuals first have to be aware of the potential benefits and detriments of their actions and then feel a sense of responsibility to act (Turaga et al., 2010:212). Personal attitudes about the environment should therefore become less important as motivators for environmental behavior when society projects those behaviors as important over an extended period of time, which will lead them to be normalized, internalized and acted on because it is perceived to be expected.

Variables related to attitudes have been shown to provide some explanations as to why people engage in green purchase behavior, specifically – among them values, religion and social norms (Lee et al., 2014:2097). There is limited knowledge about other, specific, behaviors, but previous studies have found support for value orientations as predictors of various forms of environmentally significant behaviors, a relationship which in some studies was mediated by concern for the environment (ibid.). Concern could also *result* from political value orientations, because left-right placement affects attitudes towards environmental issues that are subject to regulation and intervention by the state (Davidovic et al., 2020). It is unclear, however, how this translates to behaviors that are based entirely on personal volition, such as consumption.

3.3 Left-right placement

An individual's left-right placement is based on values – which are described as “fundamental orientations or guiding principles” (Lee et al., 2014:2098) – and, in turn, influences beliefs, attitudes and behavior (ibid.). Left-right placement could be a deciding factor for environmentally significant behaviors because the right more commonly exhibits values that build on “resistance to change” and “acceptance of inequality” (Jost, Federico & Napier, 2013:233). This is notable because of the negative effects of environmental deterioration being unequally distributed among the populace (Hultman et al., 2019). The Swedish political landscape, however, has seen substantial depolarization over recent years and moreover has “one of the most unidimensional systems in the world” (Oscarsson & Holmberg, 2015:261). Still, anti-environmentalist sentiments are most prominent among rightists, who hold more materialist values than other groups (ibid.: p.268). This could mean that those who express high levels of environmental concern to a larger extent identify as leftist. But that builds on the assumption that high levels of concern correspond with support for progressive solutions, and

that high levels of concern cannot receive a lower priority than other concerns. While the right is generally argued to prioritize environmental issues to a lesser extent than the left, the right has been found to be more supportive of environmental protection in some contexts (Davidovic et al., 2020).

3.4 Hypotheses

Environmental concern being higher among the left is well-known and has received empirical support in both international and Swedish research (see for example Choma et al., 2020; Oscarsson & Holmberg, 2015). However, what speaks in favor of concern not being quite so polarized is the argument that the way environmental issues are framed is decisive of what groups they resonate with (Choma et al., 2020; Feinberg & Willer, 2012). Climate change, for instance, constitutes a global issue and is thus a threat to not just oneself or one's 'in-group', but also a larger population of unknown others and groups which are different from one's own – the 'out-group' (Jagers & Matti, 2010:1065). Environmental concern for climate change specifically should therefore be higher among those who hold altruistic and egalitarian values, meaning compassion and a belief in equality (Choma et al., 2020; Davidovic et al., 2020). This is generally more characteristic of the left (Hultman, Björk & Viinikka, 2019). The right is instead more protectionist and nationalistic when it comes to issues like the environment (ibid.). According to this logic, the right should be more concerned over issues that connote protecting their immediate surroundings because it is to them perceived as more detrimental to their interests and in-group.

Combatting climate change usually involves market-based regulation (putting a price on environmentally harmful activities like driving), and rightist skepticism towards environmental protection is largely conditioned by their predilection for a free market (Davidovic et al., 2020:678). The far-right in particular ought to regard environmental destruction in a more concerning light than climate change, seeing as it is in those circles that climate change denialism is most prominent (Hultman et al., 2019). There is also explicit evidence for climate change being a subject of particular polarization, but most sustainability issues are similarly cause for political divide (Kidwell, Farmer & Hardesty, 2013:350).

H1 – People who identify as rightist express higher levels of concern over environmental destruction than they do over climate change.

There is a lack of research on any direct correlation between environmentally significant behaviors and left-right placement. I argue, however, that there is reason to believe that the correlation between them will be weak.

As far as recycling goes, Sweden is among the top performing countries in the world, with an estimated 50 percent of consumption materials being recycled (OECD, 2015). This can partly be attributed to the fact that Sweden is a country with predominantly individualistic values, which leaves us with “a greater orientation toward biospheric motivation” (Luzón, Martínez, Salguero & Salinas, 2012:2799). But if the right does in fact express less environmental concern and report higher consumption rates (thereby producing more waste) than the left, then it is statistically improbable for recycling to be a behavior that is mainly observed in individuals who identify as leftist and/or express higher levels of concern. This should especially be true if you take into account the fact that Sweden has seen an “ideological shift to the right” (Oscarsson & Holmberg, 2015:263) over the last several decades, with 47 percent leaning right and 34 percent leaning left in 2010. I believe that these numbers speak for the existence of a more widespread norm surrounding recycling in Sweden. According to the norm focus theory, this could be either a descriptive social norm, meaning “the visible behaviour of others” (Nigbur et al., 2010:262), or an injunctive one. An injunctive norm is “a socially shared rule of conduct” (ibid.). There is no empirical support for this as pertains to Sweden, but at least one study has found evidence for the following causal chain: social norms – personal norms – intention to recycle – recycling behavior (Nigbur et al., 2010).

Previous research supports the notion that environmental attitudes are less useful in the prediction of recycling behavior (Bratt et al., 2015:438). This should mean that even if the data – as previous research has consistently established – supports the presence of higher concern among the left, it will not be indicative of recycling behavior. Furthermore, recycling is unlike other environmentally significant behaviors like alternative transportation and consumption in the sense that it is not subject to market-based regulation. Therefore, we should observe less polarization in recycling habits than in other behaviors. Consumption, for instance, will likely be higher among rightists because of materialistic values’ prevalence in conservatives (Oscarsson & Holmberg, 2015:268). With that having been said, other behaviors should not be greatly influenced by left-right placement either, seeing as the political landscape in Sweden is

seeing decreasing polarization (Oscarsson & Holmberg, 2015), and that there is such a multitude of interacting individual factors that contribute to behavior.

H2 – There are no significant differences in recycling behavior between people who identify as leftist and those who identify as rightist.

H3 – The correlation between left-right placement and recycling is weaker than the correlation between left-right placement and consumption.

4. Design

4.1 Method and data

The data that will be used to answer these hypotheses is the Society, Opinion and Media (SOM) 2018 National survey. This particular survey was sent out to a random selection of 21,000 Swedish residents aged 16–85, of which 10,796 responded. However, the majority of the variables I will be using are derived from the sixth edition of the survey, which received a total of 1,807 responses.

Using SOM survey data as opposed to a self-designed questionnaire contributes with better representativity, and thus a greater likelihood that the results will be high in both validity and reliability (Esaiasson, Giljam, Oscarsson, Towns & Wängnerud, 2017:59). A potential problem with this data, which would affect the reliability of the results, is that representativity in the selection does not necessarily mean that responses are representative. The SOM Institute reports that men, foreign citizens and people aged under 50 are slightly underrepresented in the response group (Tippen & Weissenbilder, 2019). The biggest difference in representativity of age groups is between those aged 16–29, who are “underrepresented by seven percentage points” (ibid.: p.22), and 50–75, who are instead overrepresented by eight. This could be considered especially important for environmental issues because of environmentalist attitudes’ prevalence amongst young people. Thus, the new generations, which arguably are more vital to the understanding of future trends and conditions, will not have an equal impact on the results or the conclusions that can be drawn about environmental attitudes and behaviors.

Using survey data is nonetheless the optimal method in this case, since it is based on individual-level data where responses are tied to the same people. This minimizes the risk of ecological fallacies, meaning potentially false conclusions that are drawn about individual behavior based on group observations, or aggregated data (Freedman, 1999). The decision to use a SOM survey was made on the basis of the relevance of the questions and the overall large number of respondents, which has contributed with geographic representativity on top of the comparatively good representativity of population groups (Tippen & Weissenbilder, 2019:21).

4.2 Operationalizations

4.2.1 Left-right placement

Left-right placement is operationalized as self-reported positioning on a five-point scale in response to this survey question:

“Political opinions are sometimes said to be able to be placed on a left-right scale. Where would you position yourself on such a scale?”

[1 – Definite left] [2 – Leaning left] [3 – Neither left nor right] [4 – Leaning right] [5 – Definite right]

This question, because it occurs in every edition of the survey, does not limit the selection of other variables that did not, which is important due to some of the behavioral variables being exclusive to the sixth edition. A question concerning ideological categories such as socialism, conservatism and nationalism, which could have been an alternative operationalization, was only covered in the fourth edition of the survey. Those ideologies were, in that particular variable, not included as mutually exclusive answer options and it would thus have been difficult to draw conclusions about causality. It is also likely to be more difficult to categorize oneself according to ideologies than to place one’s general opinions on a left-right scale, which is more commonly occurring in the political debate and whose implications are arguably both easier and more useful to understand (Oscarsson & Holmberg, 2015:260f). This could mean, however, that those who are either less informed about or less interested in politics place themselves in the center, which could skew the results in such a way that the actual connection between concern and behavior and left-right placement becomes blurred or inconsistent. Therefore, one should keep in mind that people who were ‘neither left nor right’ in 2010 accounted for about 19 percent of the electorate – a number that keeps decreasing – whereas

those who were unsure of their position made up between three and ten percent (Oscarsson & Holmberg, 2015:263).

4.3.2 Environmental concern

Environmental concern is operationalized in two different ways: concern vis-à-vis climate change on the one hand and destruction of the environment on the other. This ensures reliability but should also account for, first, connections between concern type and behavioral type and, second, any ideologically divisive perceptions about different types of environmental issues or the framing of those issues.

“If you consider their state today, how concerning do you find the following to be for the future?”

(A) Changes in the earth’s climate

(B) Environmental destruction

Answer options indicating level of concern from 1 to 4 (for clarity, these will be recoded so that higher numbers correspond with greater concern):

[1 – Very concerning] [2 – Quite concerning] [3 – Not very concerning] [4 – Not at all concerning]

As far as the question of concern for the climate goes, I believe we will observe higher levels of concern among leftists seeing as the question implies a more globalist issue. That assumption is based partly on the fact that the question is phrased in a way that regards Earth as an entity. Implicitly to the question, climate change is often discussed in terms of keeping global temperatures down. And the effects of climate change to be witnessed in Sweden are not as extreme as in many other parts of the world. This would suggest that higher levels of concern over changes in the earth’s climate are derived from altruistic values and should cause some discord between the left and the right.

Concern for the environment, on the other hand, does not connote any such agenda, which makes it an important question to include in this analysis. It could just as well be interpreted as a self-interested issue depending on each individual’s own inferences from ‘environmental destruction’ as a phenomenon. It is a more general question than concern for the climate and

could involve anything from pollution to littering or deforestation. While I do not expect leftists to express less concern over environmental destruction than over climate change, I believe that any differences between concern among the left and the right will be slighter because the question is less charged. Perhaps concern could be positively linked to cynicism or a lack of trust, which I am unable to control for seeing as the only ‘trust’ variable was exclusive to the fourth edition of the survey. But I argue that variations between concern for the climate and concern for the environment among the political right would nonetheless support the notion that their concern has been somewhat underestimated, and that framing plays a vital part in research on the subject.

4.2.3 Environmentally significant behavior

Recycling habits are the main point of interest in this study, seeing as there is reason to believe that it is less polarized and dependent on concern than other behaviors. This will be operationalized by way of three different variables and compared with two variables of consumption, since the literature argues that left-right placement dictates material values. The variables were selected based on their being common everyday actions and are not behaviors that are necessarily associated with any particular activism, which would have most likely favored leftist voters (Choma et al., 2020). They are:

1 *“How often within the last 12 months have you bought any of the following?”*

(A) Clothes for yourself

2 *“And as for other shopping habits, how often have you?”*

(A) Bought second-hand/used items

3 *“How often do you or someone in your household recycle the following?”*

(A) Paper packs/cardboard

(B) Plastic packs

(C) Glass bottles and jars

Answer options for all of the above, ranging from a frequency of 1 (never) to 7 (several times per week):

[1 – Never] [2 – At least once within the last 12 months] [3 – At least once per half year] [4 – At least once per quarter] [5 – At least once per month] [6 – At least once per week] [7 – Several times per week]

The obvious problem with many these variables is that they only account for frequency, while completely disregarding quantity. For instance, buying clothes often does not necessarily mean consuming more than those who buy a large quantity of clothes on fewer occasions. I considered including a variable that accounted for the amount people spend on clothing, but monetary value is no real indication of environmental impact either, seeing as large quantities of cheap clothing might cost just as much as a low quantity of expensive clothing while causing more damage to the environment. To control for this somewhat, I have included a variable for shopping second-hand, which might indicate sustainability-minded shoppers but does constitute consumption, nonetheless. Similarly, recycling necessitates consumption, so frequent recycling is not to be regarded as entirely positive. Availability of recycling stations also affects the frequency at which people are able to recycle, which could discriminate against those who live in rural areas. The materials that were selected for this variable are paper, glass and plastic, for the simple reason that the first two are recycled the most and the latter the least (Avfall Sverige, 2020). This should provide insight into whether or not certain types of environmentally significant behaviors are more established and integrated in Swedish society than others, making them subject to less polarization.

I am unable to control for any explicit motives for these behaviors. However, I do not intend to make any definitive distinctions between environmental motives and individualistic ones, or otherwise, seeing as motives can be argued to be both multiple and relatively unimportant to the results. For example, shopping second-hand will have the same environmental impact irrespective of whether it is done for financial reasons or for the sake of the environment. Similarly, recycling might be indicative of an environmental lifestyle, but it could also be a way to compensate for other, environmentally detrimental behaviors. Some methods of engaging in environmentally significant behavior are certifiably more costly than others, and it does not lie within the scope of the study nor its purpose to differentiate between people's personal priorities.

Because of the limited scope of this study, many forms of environmentally significant behaviors have to be excluded. Alternative transportation is an example of another potential

measurement of environmentally significant behavior. That particular category is excluded from this study because bicycling, for instance, could be done for health reasons just as well as it could constitute an alternative to a car, while flying might be done for business or for leisure, something which the data does not differentiate between.

4.3 Control variables

In order to avoid potentially spurious correlations between the dependent and independent variables, I will be controlling for a number of factors that could affect the relationship between the dependent and independent variables. Previous research stresses the significance of individual factors like gender, income and level of education for environmental concern and behavior (see for example Davidovic et al., 2020:683). I do not include age as a control, since I did not find that it was a commonly used variable in similarly oriented research.

Gender is an important control because women, on average, express higher levels of environmental concern than men do (Davidovic et al., 2020). This is operationalized as responses to the question “Are you: [1 – female] [2 – male] [3 – other]?”, which can be found in the same survey as the main variables. The ‘other’ category is included in the regressions, but it should be noted that gender not being measured as dichotomous could affect the results; the ordering of ‘other’ relative to the other categories is uncertain and the effects of this variable on other variables might thus not be linear.

There is also evidence for environmentally significant behaviors being dependent on living area, especially behaviors like recycling and transportation, because of unequal accessibility in urban and rural locations (Bratt et al., 2015:438; Thomas & Sharp, 2013:11). Living area is operationalized as “In what type of region do you live? [1 – big city, centrally] [2 – big city, outskirts/suburbs] [3 – city, centrally] [4 – city, outskirts] [5 – large urban area] [6 – small urban area] [7 – countryside]”. While some of the answer options may be difficult for those surveyed to differentiate between, what is most important to observe is any disparities between inhabitants of big cities and inhabitants of the countryside.

High-income and more highly educated individuals are both disproportionately right-leaning. Higher education relates positively to environmentally significant behavior, since it has proved to be decisive of how informed we generally are about society and issues pertaining to the

environment (Lee et al., 2014:2102f). Education level is operationalized as “What school education do you have? [1 – have not finished primary school] [2 – primary school] [3 – high school studies] [4 – high school degree] [5 – post-secondary studies, non-university] [6 – university/college studies] [7 – university/college degree] [8 – postgraduate studies or degree]”. The answer options make little distinction between the various levels of university studies, so it is conceivable that the effects of education on the other variables in this data set are underestimated.

A higher personal income relates negatively to environmentally significant behavior and will usually lead to increased consumption (Davidovic et al., 2020). People whose income is categorized as high are also more likely to support the established order and thus have an unfavorable view of greater equality, which is notable because of the correlation between environmental concern and egalitarian values (Choma et al., 2020; Davidovic et al., 2020; Hultman et al., 2019). Income is operationalized as “What is the approximate accumulative annual income in Swedish crowns for all people in your household before tax (including pension, student loans etc.)? [1 – 100 000 or less] [2 – 101 000 – 200 000] [3 – 201 000 – 300 000] [4 – 301 000 – 400 000] [5 – 401 000 – 500 000] [6 – 501 000 – 600 000] [7 – 601 000 – 700 000] [8 – 701 000 – 800 000] [9 – 801 000 – 900 000] [10 – 901 000 – 1 000 000] [11 – 1 001 000 – 1 100 000] [12 – more than 1 100 000]”. This, of course, accounts for the entirety of the household, which could be a problem for two reasons: firstly, the size of the household is unknown, and secondly, the effects of household income on individual attitudes and behavior could be questionable. However, because recycling habits are also accounted for as efforts made by the respondent *or* a member of their household, and because economies – certainly the benefits of various purchases – are often shared, I believe that the household income may actually serve as a better control than personal income.

In order to account for the fact that environmentally significant behaviors can result from being more informed about political issues or being actively engaged in various forms of political activism, I will also be controlling for political interest. Political interest is operationalized as “How interested are you generally in politics? [1 – very interested] [2 – quite interested] [3 – not very interested] [4 – not at all interested]”. For clarity, this variable is recoded so that (1) represents the least amount of interest and (4) the most.

5. Results

To test my hypotheses, I have run a series of bivariate and multivariate linear regressions between my main independent variable, left-right placement, and various dependent variables, being behaviors and concern.

Aside from the main analyses that center around left-right placement, I also include analyses of the two types of concern that are included in the study as predictors of behavior, to serve as points of reference for the explanatory power of left-right placement and allow for more comparability with previous research. Studying both operationalizations of concern relative to behavior provides robust results and an account of the effects of different attitudes toward similar issues, which in this case are climate change and environmental destruction. Concern and left-right placement could not be included as independent variables in the same models since there is an assumed correlation between them. Nor could concern be run as a control seeing as it is believed to be preceded by left-right placement in the causal chain.

Using regressions will allow several variables to be studied efficiently and simultaneously, as well as provide estimates of the explanatory power of the predictors, as is one of the main purposes of the study. What should be kept in mind, however, is that the accuracy of these estimates is conditioned by trends in the data being more or less constant (linear). Furthermore, the estimates only depict mean values, which means that big spreads in the data will not be reflected in the regression line, but rather in low significance ($P > 0.05$) and a low adjusted R^2 . An additional caveat is that all variables, including controls, are treated as continuous rather than dichotomous, which could potentially hide effects that would have been better observed with a curvilinear regression. At the same time, dichotomously treated variables could also cause skewed results, seeing as they raise the question about which answer options should be bunched together.

5.1 Left-right placement and concern

The correlation between left-right placement and concern that is contended in previous research is tested to see if and how negatively left-right placement relates to concern. A negative correlation, as is maintained in the literature, means that a ‘one-step’ (since the beta coefficients are standardized) increase in the independent variable (left-right placement) will lead to a decrease in the dependent variable (concern). We will also be able to observe any differences

between predictors of concern for climate change on the one hand and concern for environmental destruction on the other. While regressions will not be able to tell us anything definitive about causality in these or any of the other models, it should give us an estimate on which we can draw conclusions about how polarized environmental concern seemingly is.

Table 1: Regression with the dependent variable concern for climate change in model 1, concern for environmental destruction in model 2, controls included. Table including models without controls can be found in the appendix. Standardized beta coefficients, standard error in brackets. ***P<0.001 **P<0.01 *P<0.05

Env. concern	Model 1	Model 2
Left-right placement	-0.161*** (0.011)	-0.127*** (0.015)
Political interest	0.047** (0.017)	0.084*** (0.022)
Education level	0.041*** (0.008)	0.009 (0.011)
Gender	-0.255*** (0.026)	-0.218*** (0.035)
Income	0.014** (0.005)	0.007 (0.006)
Living area (type)	0.038*** (0.007)	-0.028*** (0.009)
Intercept	4.200*** (0.087)	4.312*** (0.115)
N	3 154	1 554
Adjusted R2	0.122	0.090

Source: SOM (2018) National survey

As can be seen in table 1, the negative effects of left-right placement on both forms of concern are relatively strong, where -1 would represent a perfect negative correlation. This holds even when controlling for political interest, education level, gender, income and type of living area,

of which only gender has a considerable effect on the dependent variables – one that is stronger than that of concern. Left-right placement has a stronger negative correlation with concern for climate change (coefficient = -0.162) than concern for environmental destruction (coefficient = -0.132). Most of the correlations are furthermore statistically highly significant ($P < 0.001$), which means that the probability that these values have resulted from coincidences in the sample compared to the population is very low. The standard errors are also low, indicating that there is quite a limited spread in responses relative to the mean. The adjusted R^2 showcases low explanatory power of left-right placement for variances in concern, where concern for climate change can be explained by left-right placement to a slightly larger extent than concern for environmental destruction. Their respective R^2 values can be interpreted as approximately 6% (0.061) and 5% (0.048) being explained by left-right placement. With controls, these models only account for approximately 12% and 9% of the variance in the dependent variables.

5.2 Left-right placement and behavior contra concern and behavior

In this next section, the effects and explanatory powers of concern and left-right placement on consumption and recycling are compared. The results of these regressions have been compiled into 5 tables, one for each dependent variable, where left-right placement is accounted for in model 1, concern for climate change in model 2, and concern for environmental destruction in model 3. Consumption is presented first (clothing and second-hand purchases), followed by recycling (cardboard, plastic and glass). The tables for consumption of clothing (2) and recycling of cardboard (4) are presented in part here, whereas more detailed versions can be found in the appendix, along with the tables for second-hand shopping (3) and recycling of plastic (5) and glass (6). I present recyclable goods in separate tables instead of as a comprehensive index to showcase each recycling habit in detail, which will help to illustrate similarities and differences in recycling behavior depending on material. Different estimates could indicate, for instance, that one material is more difficult to recycle than another.

5.2.1 Consumption

As can be seen in table 2 below, there is no strong or significant correlation between left-right placement and more frequent purchases of clothing, although it is positive (coefficient = 0.050). It also explains very little of the variation in the dependent variable ($R^2 = 0.002$), compared to the control models which all account for roughly 14%. We see low coefficients for concern, which are further diminished when the controls are introduced. All controls have a relatively

low impact on the results except for gender (coefficient = -0.642 and -0.652), which brings the R2 from between 0.005 and 0.013 up to 0.148. The gender control being negative in this instance indicates that women are much more frequent consumers of clothing than men.

Table 2: Regression with the dependent variable clothing purchases, controls included. Table including models without controls can be found in the appendix. Standardized beta coefficients, standard error in brackets. Independent variables: left-right placement in model 1; climate change concern in model 2; concern for environmental destruction in model 3. *** $P < 0.001$ ** $P < 0.01$ * $P < 0.05$

Clothing purchases	Model 1	Model 2	Model 3
Left-right placement	0.051* (0.026)		
Concern (climate)		0.053 (0.039)	
Concern (env. destruction)			0.024 (0.043)
Political interest	0.040 (0.038)	0.038 (0.038)	0.035 (0.038)
Education level	0.059*** (0.018)	0.055** (0.018)	0.058** (0.018)
Gender	-0.657 *** (0.061)	-0.642 *** (0.061)	-0.652 *** (0.061)
Income	0.087*** (0.011)	0.089*** (0.010)	0.090*** (0.010)
Living area (type)	-0.058 *** (0.015)	-0.057 *** (0.015)	-0.057 *** (0.015)
Intercept	3.855*** (0.181)	3.830*** (0.214)	3.930*** (0.228)
N	1 559	1 563	1 561
Adjusted R2	0.149	0.148	0.148

Source: SOM (2018) National survey

When second-hand purchases (see table 3 in the appendix) are concerned, there is a palpably stronger correlation with left-right placement (coefficient = -0.182 without, and -0.154 with, controls). This correlation is statistically significant and the models account for 2.3 and 7.4% of the variation, respectively. Once again, the controls generally have limited effect, whereas gender, specifically being female, proves to be a strong predictor (coefficient = -0.530 (model 2), -0.558 (model 4) and -0.567 (model 6)).

5.2.2 Recycling

All three variables for recycling – cardboard (table 4), plastic (table 5) and glass (table 6) – have a significantly weaker correlation with left-right placement than do the other behavioral variables, in spite of the fact that those too were weak. In fact, while they are still negatively correlated, left-right placement is virtually unrelated to recycling behavior (coefficient = -0.017 (cardboard), -0.026 (plastic and glass)). The R^2 in model 1 of each of these tables is exceptionally low, with two of them even having weakly negative values. This indicates that the models fit the data poorly, and that the independent variable not at all works as a predictor of the dependent variable. The intercept is relatively high at circa 5.4 (out of seven answer options), suggesting a high mean in recycling behavior when the value of left-right placement is zero.

It should be pointed out that the results are not statistically significant, which means that they could have resulted from pure coincidence, but there are clear similarities to be found between all three tables that depict recycling behavior. What is also notably consistent among them is the lack of correlation with the controls, including the gender variable; R^2 with controls included still only adds up to 0.023, 0.007 and 0.019 for tables 4, 5 and 6 respectively. Barring the control variable for type of living area they are also statistically insignificant. Remarkably, the same applies to the models where concern constitutes the independent variable. Concern does seem to have a considerable effect on recycling behavior, with coefficient values being around 0.2, but the R^2 remains low even when taking controls into account, particularly for plastic recycling where the best model (6) only explains 1.5% of the variation.

The effect of concern on plastic recycling is somewhat lower than that of cardboard and glass recycling. Concern for environmental destruction generally comes across as a slightly more impactful and better predictor for recycling behavior than climate change concern.

Table 4: Regression with the dependent variable cardboard recycling, controls included. Table including models without controls can be found in the appendix. Standardized beta coefficients, standard error in brackets. Independent variables: left-right placement in model 1; climate change concern in model 2; concern for environmental destruction in model 3. ***P<0.001 **P<0.01 *P<0.05

Cardboard recycling	Model 1	Model 2	Model 3
Left-right placement	-0.031 (0.030)		
Concern (climate)		0.119** (0.045)	
Concern (env. destruction)			0.203*** (0.050)
Political interest	0.070 (0.044)	0.062 (0.044)	0.057 (0.044)
Education level	0.014 (0.021)	0.014 (0.021)	0.012 (0.021)
Gender	-0.041 (0.070)	-0.014 (0.071)	-0.001 (0.071)
Income	0.023 (0.012)	0.021 (0.012)	0.022 (0.012)
Living area (type)	-0.086*** (0.017)	-0.081*** (0.018)	-0.081*** (0.017)
Intercept	5.507*** (0.209)	4.991*** (0.248)	4.698*** (0.263)
N	1 561	1 567	1 564
Adjusted R2	0.023	0.027	0.033

Source: SOM (2018) National survey

6. Discussion

The environment is more or less regarded as a leftist issue. Previous research found that the left exhibits greater concern for the environment than the right, but also that concern is a relatively weak predictor. As the regressions in this study have shown, left-right placement has an even weaker effect and lower explanatory force than concern.

People who identified as leftist in this particular data set exhibit environmentally significant behaviors to a slightly larger extent than those who identified as rightist. This applies to all variables studied, but recycling habits stand out as seeing very little impact from left-right placement. This confirms the second hypothesis: “There are no significant differences in recycling behavior between people who identify as leftist and those who identify as rightist”, as well as the third hypothesis: “The correlation between left-right placement and recycling is weaker than the correlation between left-right placement and consumption”. The negative R^2 indicates that left-right placement is an inadequate predictor for recycling. The lack of statistical significance also tells us that the results could have been caused by coincidences in the sampling relative to the population. Still, similarly weak correlations are observed in all three tables depicting recycling behavior, which gives the conclusion about nonrelation credence.

The variations remain unexplained by the independent variables included in the regressions, largely in the concern models as well, even when controls were included. Notable are the low coefficients of the gender control, both in the left-right placement model and in the concern models, which is in stark contrast with its strong effect on all other behavioral variables. The reason for this particular finding is difficult – if at all possible – to ascertain based on the data alone.

I believe that these results suggest that recycling, compared to other environmentally significant behaviors, is not a divisive concept that is accepted and adopted by specific types of individuals or groups. The possibility remains that there are traits of different sorts, such as perception of moral responsibilities, that would explain the variations in recycling behavior. Previous research, however, has proved that value orientations do not constitute a conclusive predictor of behavior. The slight effect that is had by each of the independent variables and controls could indicate that there is a multitude of contextual factors that contribute to the decision to recycle or not. For instance, awareness of the fact that Swedish law dictates that

citizens recycle wherever recycling has been made possible. A study conducted in 2017 found that only 29% of respondents were aware of this obligation (Stockholm Consumer Cooperative Society, 2017). But awareness, of course, does not necessarily indicate compliance, especially considering the lack of reinforcement of this regulation and sanctioning of noncompliance.

Recycling could just as well be a habitual behavior instilled by susceptibility to social norms. No research articles explicitly support the existence of a recycling norm in Sweden, but they do contend that social norms affect recycling behavior. Recycling can also be argued to involve little sacrifice compared to other environmentally significant behaviors; while it requires a little added time, sorting recyclable materials into a separate bin is likely considered to be a smaller inconvenience than opting for alternative transportation or decreasing consumption. We see similar patterns in clothing purchases, with low coefficients for both left-right placement and concern (relative to its effect on other variables), which would indicate that we are not necessarily keen to sacrifice certain forms of self-interested behavior irrespective of positive environmental attitudes. That is supported by the fact that women report significantly more clothing purchases than men despite showcasing higher levels of concern.

As for the correlation between left-right placement and concern, it is quite significantly less negative when destruction of the environment is in question as opposed to climate change. It is specifically the right that expresses more concern for the first and less for the latter, while both forms of concern are consistent among the left. This supports hypothesis 1: “People who identify as rightist express higher levels of concern over environmental destruction than they do over climate change”. It also seems to confirm findings in previous research, which indicated that polarization in environmental concern in large part can be ascribed to the framing of environmental issues, the values they build on and the interests that are involved. It should be said, however, that the psychology behind concern and behavior cannot be determined based solely on the data that was used in this study, so discussions pertaining to motive are speculative and will require further research.

7. Conclusions

In this study, I have attempted to clarify the relationship between left-right placement, concern and environmentally significant behaviors. In response to the research question “Does left-right placement indicate different levels of concern?”, I have found, in accordance with previous

research, that the left expresses higher levels of concern for the environment. However, I also found that framing, or at least the type of concern, matters greatly for how polarized concern actually comes across as being.

Much like other researchers before me, I find that concern is not a strong predictor of environmentally significant behaviors. Moreover, this study contributes with the finding that left-right placement is a far weaker and less accurate predictor of environmentally significant behaviors. That resolves another one of my research questions: How much explanatory power do concern and left-right placement have as predictors of environmentally significant behaviors?”. Concern and left-right placement explain very little of the variation in these behaviors, which are better predicted by factors like gender and education although these still leave much to be explained.

I have also found an answer to the following question: “Does left-right placement indicate different levels of environmentally significant behavior?”. The left does exhibit more environmentally significant behavior than the right, but the significance of this difference varies. Recycling is the type of behavior that correlates least with left-right placement. Consumption of clothing seems to be less affected by not only left-right placement, but other factors which would normally be positively related to environmentally significant behavior. This indicates influence from social norms, both for the better and, in the latter case, for the worse. It could imply that concern for the environment is deprioritized for the benefit of self-interest in some cases, leading to people exhibiting more of different types of behavior. Second-hand shopping, for instance, saw the strongest division between the left and the right in this data set. Future research in the environmental field should explore the extent to which social norms surrounding environmentally significant behaviors can be said to exist in Sweden and who follows them, either quantitatively or by conducting interviews. Interviews would allow for new motives to be uncovered rather than continue to test assumed predictors which in the past have ended up showing limited effects.

8. References

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9. Appendix

Table 1: Regression with the dependent variable concern for climate change in models 1 and 2, concern for environmental destruction in models 3 and 4. Standardized beta coefficients, standard error in brackets. Models 2 and 4 include control variables. ***P<0.001 **P<0.01 *P<0.05

Env. concern	Model 1	Model 2	Model 3	Model 4
Left-right placement	-0.162*** (0.011)	-0.161*** (0.011)	-0.132*** (0.014)	-0.127*** (0.015)
Political interest		0.047** (0.017)		0.084*** (0.022)
Education level		0.041*** (0.008)		0.009 (0.011)
Gender		-0.255*** (0.026)		-0.218*** (0.035)
Income		0.014** (0.005)		0.007 (0.006)
Living area (type)		0.038*** (0.007)		-0.028*** (0.009)
Intercept	3.814*** (0.036)	4.200*** (0.087)	3.789*** (0.047)	4.312*** (0.115)
N	3 454	3 154	1 725	1 554
Adjusted R2	0.061	0.122	0.048	0.090

Source: SOM (2018) National survey

Table 2: Regression with the dependent variable clothing purchases. Standardized beta coefficients, standard error in brackets. Independent variables: left-right placement in models 1 and 2; climate change concern in models 3 and 4; concern for environmental destruction in models 5 and 6. Models 2, 4 and 6 include control variables. ***P<0.001 **P<0.01 *P<0.05

Clothing purchases	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Left-right placement	0.050 (0.026)	0.051* (0.026)				
Concern (climate)			0.189*** (0.038)	0.053 (0.039)		
Concern (env. destruction)					0.140*** (0.043)	0.024 (0.043)
Political interest		0.040 (0.038)		0.038 (0.038)		0.035 (0.038)
Education level		0.059*** (0.018)		0.055** (0.018)		0.058** (0.018)
Gender		-0.657*** (0.061)		-0.642*** (0.061)		-0.652*** (0.061)
Income		0.087*** (0.011)		0.089*** (0.010)		0.090*** (0.010)
Living area (type)		-0.058*** (0.015)		-0.057*** (0.015)		-0.057*** (0.015)
Intercept	3.556*** (0.087)	3.855*** (0.181)	3.090*** (0.130)	3.830*** (0.214)	3.237*** (0.150)	3.930*** (0.228)
N	1 727	1 559	1 742	1 563	1 738	1 561
Adjusted R2	0.002	0.149	0.013	0.148	0.005	0.148

Source: SOM (2018) National survey

Table 3: Regression with the dependent variable second-hand purchases. Standardized beta coefficients, standard error in brackets. Independent variables: left-right placement in models 1 and 2; climate change concern in models 3 and 4; concern for environmental destruction in models 5 and 6. Models 2, 4 and 6 include control variables. ***P<0.001 **P<0.01 *P<0.05

Second-hand purchases	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Left-right placement	-0.182*** (0.028)	-0.154*** (0.030)				
Concern (climate)			0.246*** (0.042)	0.154*** (0.045)		
Concern (env. destruction)					0.230*** (0.047)	0.127* (0.050)
Political interest		0.051 (0.044)		0.046 (0.044)		0.050 (0.044)
Education level		0.073*** (0.021)		0.075*** (0.021)		0.079*** (0.021)
Gender		-0.530*** (0.069)		-0.558*** (0.071)		-0.567*** (0.071)
Income		-0.005 (0.012)		-0.019 (0.012)		-0.017 (0.012)
Living area (type)		-0.041* (0.017)		-0.030 (0.017)		-0.034 (0.017)
Intercept	2.656*** (0.094)	3.069*** (0.207)	1.282*** (0.141)	2.181*** (0.247)	1.315*** (0.163)	2.253*** (0.263)
N	1 734	1 567	1 750	1 571	1 746	1 569
Adjusted R2	0.023	0.074	0.019	0.070	0.013	0.067

Source: SOM (2018) National survey

Table 4: Regression with the dependent variable cardboard recycling. Standardized beta coefficients, standard error in brackets. Independent variables: left-right placement in models 1 and 2; climate change concern in models 3 and 4; concern for environmental destruction in models 5 and 6. Models 2, 4 and 6 include control variables. ***P<0.001 **P<0.01 *P<0.05

Cardboard recycling	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Left-right placement	-0.017 (0.028)	-0.031 (0.030)				
Concern (climate)			0.212*** (0.042)	0.119** (0.045)		
Concern (env. destruction)					0.289*** (0.047)	0.203*** (0.050)
Political interest		0.070 (0.044)		0.062 (0.044)		0.057 (0.044)
Education level		0.014 (0.021)		0.014 (0.021)		0.012 (0.021)
Gender		-0.041 (0.070)		-0.014 (0.071)		-0.001 (0.071)
Income		0.023 (0.012)		0.021 (0.012)		0.022 (0.012)
Living area (type)		-0.086*** (0.017)		-0.081*** (0.018)		-0.081*** (0.017)
Intercept	5.454*** (0.094)	5.507*** (0.209)	4.702*** (0.141)	4.991*** (0.248)	4.427*** (0.161)	4.698*** (0.263)
N	1 728	1 561	1 746	1 567	1 741	1 564
Adjusted R2	-0.0004	0.023	0.014	0.027	0.021	0.033

Source: SOM (2018) National survey

Table 5: Regression with the dependent variable plastic recycling. Standardized beta coefficients, standard error in brackets. Independent variables: left-right placement in models 1 and 2; climate change concern in models 3 and 4; concern for environmental destruction in models 5 and 6. Models 2, 4 and 6 include control variables. ***P<0.001 **P<0.01 *P<0.05

Plastic recycling	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Left-right placement	-0.026 (0.031)	-0.036 (0.033)				
Concern (climate)			0.171*** (0.045)	0.104* (0.049)		
Concern (env. destruction)					0.259*** (0.051)	0.202*** (0.054)
Political interest		0.077 (0.048)		0.071 (0.049)		0.064 (0.048)
Education level		0.019 (0.023)		0.018 (0.023)		0.016 (0.023)
Gender		0.087 (0.076)		0.107 (0.078)		0.123 (0.078)
Income		0.015 (0.013)		0.013 (0.013)		0.014 (0.013)
Living area (type)		-0.041* (0.019)		-0.037 (0.019)		-0.036 (0.019)
Intercept	5.424*** (0.101)	5.079*** (0.228)	4.776*** (0.153)	4.605*** (0.271)	4.467*** (0.175)	4.266*** (0.287)
N	1 733	1 567	1 750	1 572	1 745	1 570
Adjusted R2	-0.0001	0.007	0.008	0.010	0.014	0.015

Source: SOM (2018) National survey

Table 6: Regression with the dependent variable glass recycling. Standardized beta coefficients, standard error in brackets. Independent variables: left-right placement in models 1 and 2; climate change concern in models 3 and 4; concern for environmental destruction in models 5 and 6. Models 2, 4 and 6 include control variables. ***P<0.001 **P<0.01 *P<0.05

Glass recycling	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Left-right placement	-0.026 (0.025)	-0.033 (0.027)				
Concern (climate)			0.216*** (0.037)	0.139*** (0.040)		
Concern (env. destruction)					0.284*** (0.042)	0.213*** (0.044)
Political interest		0.040 (0.040)		0.027 (0.039)		0.023 (0.039)
Education level		0.028 (0.019)		0.025 (0.019)		0.026 (0.019)
Gender		0.018 (0.062)		0.054 (0.063)		0.069 (0.063)
Income		0.031** (0.011)		0.029** (0.011)		0.029** (0.011)
Living area (type)		-0.050*** (0.015)		-0.047** (0.016)		-0.048** (0.016)
Intercept	5.446*** (0.084)	5.201*** (0.186)	4.652*** (0.125)	4.637*** (0.220)	4.407*** (0.143)	4.362*** (0.234)
N	1 733	1 565	1 750	1 570	1 745	1 567
Adjusted R2	0.000	0.019	0.019	0.026	0.026	0.033

Source: SOM (2018) National survey