

# *Environmental and Societal Attitudes to Working Hours in Gendered Perspective: Patterns, Preferences and Policy*

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**ABSTRACT:** This paper begins from the premise that environmental degradation is a profound and present threat and that work time reduction (WTR) — with an associated reduction in consumption — is one of a number of strategies which can be adopted to combat it. As a precursor to looking at how such policies can be supported, our research questions whether environmental attitudes are congruent with work time patterns and preferences. Our initial hypothesis was that those who care most for the environment would work less hours than those who exhibit lower levels of environmental concern, and prefer to do so. However, contra our expectations, our empirical analysis of the *European Social Survey* shows that those who state they care most about the environment are more likely to work longer hours, and prefer to do so. Overall, men tend to be less concerned about the environment, and work longer. Caring responsibilities, in contrast, fall disproportionately on women. We argue that this reflects traditional gender roles which are a residual from the social norm of the male breadwinner model. Given WTR as an environmental policy the task is to influence preferences and “green” human behaviour, especially among men.

**Keywords:** Work time reduction, Environmental sustainability, Preferences, Environmental behavior, Feminist economics

**JEL codes:** B54, C10, Q58, D11, J29

## 1. Introduction

There is now overwhelming evidence that human activity is causing profound and worrying levels of climate change, as recognized in the climate negotiations at the United Nations ‘Conference of the Parties’ in Paris in 2015 (COP21). This is corroborated by evidence from international bodies such as the IPCC (2014) and the Stern Review (2006), and in the work of independent researchers such as Rockström et al. (2009) and Shi et al. (2010). Although the United States has signalled its intention to withdraw from the Paris accord (US Department of State, 2017), almost all other nations recognise the need to combat climate change. Thus, societal changes are required and there is a need to tackle it via policy, as well as to educate and “green” human behaviour (European Commission, 2009). It is a contention of this paper that work time reduction (WTR) is one important element in the environmental policy mix, and it can have further societal benefits in terms of facilitating unpaid work.

WTR can facilitate sustainable development through an associated reduction in household consumption, as noted by Schor (2005a), who has argued that working hours are closely interlinked with environmental impact. It is now apparent that efficiency improvements alone will not generate the scale of changes which are needed to arrest environmental degradation (Hertwich, 2005; Schor, 2005a). But, while recognising that behavioural change is needed — especially in the context of the rapid development of emerging capitalist economies such as China and India — previous efforts aimed at behavioural change vis-à-vis the environment have been relatively unsuccessful (Fudge and Peters, 2011; Whitmarsh, 2009).

This paper examines households through a gendered lens, exploring working hours and the environment. Given COP21 responsibilities, policymakers need to identify the means through which consumers’ behaviour can be “greened”, and working less with reduced consumption is one possibility. In this context we propose to examine the decisions people make presently in relation to their work time, set against work time preferences and environmental attitudes, using the *European Social Survey*. Our initial hypothesis is that concern for the environment will manifest itself in reduced working hours, and environmentally concerned men and women would also state a preference for less work.

In addressing these issues we will consider the following. In the next section we review relevant literature on the overlap between policy, attitudes, working time and environment. Thereafter

we will outline our research methodology, before offering an analysis (using descriptive statistics and regressions) based on microdata. Our results do not support our initial hypothesis and, indeed, paradoxically point to those who say they care most about the environment being more likely to work longer hours, and preferring to do so. This creates a challenge as we endeavour to “green” human behaviour. In concluding we argue that environmental degradation is a fundamental threat to a sustainable future, and WTR is a worthwhile policy as part of a broader mix. Secondly, attitudes to work time and the environment have a gendered dimension which may be a manifestation of the male breadwinner model. Finally, our evidence suggests an incongruence between the choices people make and their attitudes, which may cast doubt on theories based upon planned behaviour or rational choice.

## **2. Climate, Work and Attitudes**

### **2.1 Environmental Context**

Environment and sustainability are now fundamental concerns, pervading all aspects of human activity. Accordingly, the European Commission (2009) have stated that the severity of the environmental situation requires sustainability to be mainstreamed into all policymaking. At the same time researchers such as Pullinger (2011) and Schor (2005a) have observed that current environmental policy aims to reduce greenhouse gas emissions, but fails to relate this to household consumption, with its effect on the earth’s biodiversity and local ecosystems.

Credible scientific opinion now agrees that the critical levels of greenhouse gas emissions into the atmosphere are causing severe climate change, with no signs of deceleration (IPCC, 2014; Rockström et al., 2009). The immediacy of this challenge was clear during COP21, where all countries — except for Nicaragua and Syria — submitted their Intended Nationally Determined Contributions, stating the extent of CO<sub>2</sub> reductions they intend to make. Although Nicaragua and Syria have subsequently accepted the Paris agreement, the recently stated US position has undermined it. This notwithstanding, if this reduction is to be facilitated profound changes at all societal levels are needed. In particular, the OECD has stated that ‘*Household consumption patterns* and behaviour have a profound effect on stocks of natural resources and the quality of the environment’ (2011, p.1 emphasis added; see also Hertwich, 2005). Historically, particular critiques of consumerism have been embedded in an ideological critique of capitalism whereby it is seen to generate excessive working hours which undermine family life (e.g. Marx, 1976, pp.340-416). Moreover, it may be that current environmental policies are failing to capture the

interaction between environmental degradation and aggregate consumption patterns. In the case of mainstream economics this could be explained because it tends to focus on particular markets, eschewing a holistic view of societal welfare. Indeed, it assumes environmental decline is a negative externality which is to be solved with market-based solutions (Chester, 2010). It is also clear that people and households in developed societies are consuming at levels beyond the environmental capacity of the planet (Coote et al., 2010). For example, in 2012, the ecological footprint of the average UK citizen was more than three times its bio-capacity (Global Footprint Network, 2016). A consequence of WTR and reduced consumption associated with less work is that it places the economy on a more sustainable footing. Research has identified a positive correlation between consumers' working hours and emissions, where the link is mediated through income and consumption increase (Coote et al., 2010; De Graaf 2003; Druckman et al., 2012, Hayden 1999; LaJeunesse, 2009; O'Hara 1993; Pullinger, 2011, 2014; Sanne 2002; Schor, 2005b; Siegel 2007). This serves as the context for our paper, which explores European attitudes to work time and the environment.

## **2.2. Work Time and Environmental Impact**

Research has emerged on the relationship between WTR and the environment, at both the macroeconomic and microeconomic level. In her analysis of developed countries Schor (2005b) has found a positive correlation between employees' average working hours and the national ecological footprint. Corroboration of this for further countries is provided by Hayden and Shandra (2009). Rosnick and Weisbrot (2007) demonstrate that if European countries adopted a US pattern of work and leisure-time distribution they would likely increase their energy consumption by around a quarter. And, a micro-level study of the relationship between working hours and environmental impact in French households revealed that long working hours are positively correlated with affluent consumption and high impact behaviour (Devetter and Rousseau, 2011). Similar results are found by Pullinger (2011) in a comparative study of the UK and the Netherlands in an analysis which accounts for external as well as personal differences between households. The impact is quantified in a Swedish study by Nässén and Larsson (2015), which estimates that a 1% reduction in working hours decreases energy use by 0.7%, and greenhouse gas emissions by 0.8%. This provides convincing evidence for the potential effectiveness of WTR as an environmental policy.

### **2.3. Working Hours and Gender**

In advocating a 30-hour working week, Hermann (2015) points to the benefits. These include: (i) more equal distribution of work between men and women; (ii) relief for those who have to combine paid and unpaid work (including care); and, (iii) ecological sustainability. In looking at WTR we need to recognise the way gender roles shape, and are shaped by, work. The UK has traditionally been a strong male breadwinner state, where men are assumed to possess a lifelong full-time position earning the majority of household income. In contrast, in a traditional family, women tended to care for the household and its dependants (Lewis, 1992; Annesley, 2007). Equal opportunity legislation from the 1970s, and increased feminisation of the labour force, resulted in some change, and a new model — the adult worker model — began to emerge. This created additional opportunities for women, but undermined the ability of households to provide care (see, e.g. Hakim, 2000, p.240). WTR presents opportunities to rebalance society away from a production-focused economy towards a “social” economy with a strong social infrastructure (Hermann, 2015). This may strengthen areas not included in GDP (or value added), but which have benefits for people in terms of the environment, health and social wellbeing (Schneider et al. 2010). Less focus on “physical infrastructure” and more on “social infrastructure” — e.g. investment in sectors such as care, research, education, health — is desirable (Pearson and Elson, 2015). In this example “social” is not juxtaposed with private, but with physical. Health and education are supported by the State, but also within household and communities through families, formal and informal volunteering. More time is created for this if individuals are engaged less in capitalist production. Although renewable energy and public transport are physical infrastructure, and this presents fiscal challenges in de-growth scenarios, opportunities to volunteer in labour-intensive environmental projects would be stimulated by WTR. Moreover a transition to a larger proportion of social investments may have several benefits in the short as well as long term, with reductions in sick-leave, improved intellectual development in children, and increased productivity. This is further developed by the UK Women’s Budget Group, in partnership with the Scottish Women’s Budget Group, in ‘Plan F: Feminist Plan for a Caring and Sustainable Economy’ (see Elson, 2016).

It is widely agreed that progressive policies are at their most efficient when they are aligned with the community’s own preferences and attitudes (Kalinowski et al., 2006). Furthermore, theories of behaviour, such as the theory of reasoned action, and theory of planned behaviour, state that attitudes and values are vital (causally) for shaping behaviour (Abdul-Muhmin, 2007; Ajzen and Fishbein, 1977; Polonsky et al., 2012). However, as we shall see, it is also possible

that people maintain preferences and desires which are incompatible or intransitive, which our empirical analysis illuminates in the context of work time preferences and environmental concern.

There are other concerns with WTR policies, such as employers' attempts to circumvent them (as discussed originally by Marx, 1976). In addition, the voluntary nature of some policies is problematic (e.g. the UK Government's approach to the 48-hour workweek in the context of the European Working Time Directive). Studies have shown that WTR strategies are mainly utilised by high-income dual working households, and in the younger age-groups, primarily by women (Pullinger, 2014). These findings indicate that WTR policies may reinforce gender roles and increase social inequalities. Hakim has also suggested that part-time jobs, or flexible working hours introduced to keep mothers in the labour market, are also attractive to the workforce and employers more generally, as it affords a wider choice-set (2000, p.248).

Different preferences among women and men with regard to work time have been noted (Philp et al., 2015). There are also gendered differences with regard to environmental sustainability, with women being more willing to adapt their lifestyle and behaviours to lessen their ecological footprint (EIGE, 2012). A further aspect of this is households' gendered time-use, where women undertake the majority of care and household production. This also has ramifications for working hours. In the present paper one of the primary concerns is to examine the correlation between attitudes towards working time in relation to environmental concern, and how these attitudes differ between men and women. In this context the empirical analysis that follows is timely and prescient, building on the WTR literature.

“Preference theory” was proposed by Hakim as an alternative theory on preferences and attitudes, aimed at explaining ‘women’s choice between family work and market work’ (Hakim, 2000, p.1). The theory is developed from historical and empirical data and classifies women into three groups: those with work-centred, home-centred and adaptive preferences. The latter seeks to combine paid jobs and family work without giving absolute priority to either. In this sense they have an adaptive lifestyle, and are more responsive to policies which support work-life balance. Hakim argues that men, historically have been a more homogenous as a group, overwhelmingly exhibiting work-centred preferences. Preference theory states that the conflict between production and reproduction mainly arises within the adaptive group, as the home- and work-centred groups are less focused on maintaining both aspects in their life. The

cause of this conflict is society's structural patriarchy, as the patriarchy influences adaptive women's attitudes towards work or care. The theory further discusses how patriarchy, institutions and social norms impact social processes, such as attitudes, values and preferences. These processes do not change randomly but are interlinked with external influences. A main conclusion of preference theory is that policies should not aim to force women take on both production and reproduction, but to eradicate the conflict between the two and allow for a genuine choice. We argue that WTR has the potential to support this goal, as well as support sustainable living.

Hakim also alludes to the diminishing importance of social class in the labour market and the household. Although this may, at first sight, appear to deny the influence of what has been a primary concern of social science, we interpret this differently: a broader intersectional approach is a more powerful analytical tool to comprehend social and structural constraints. The way in which external factors play a vital role in shaping preferences is also examined by preference theory in a limited way. This includes external barriers, such as labour market inflexibility, and social norms like the “motherhood mandate”, as well as intra-household influences, such as parental role models and how one's partner's preferences impact behaviour (McRae, 2003). Structural factors impact consumption too (see Sanne, 2002 and EIGE, 2012). While the final act of sustainable consumption may be down to individuals, the policies and development up to that point must recognise the effect of society, including government and business, on individual consumption choices.

The present paper draws upon this gendered analysis of the household, work and employment, exploring attitudes to work time and care for environment. In order to contribute to the policy debate regarding climate change we explore the responses of men and women to questions regarding work time and environmental preference, alongside individual characteristics (such as age and education). At the outset of our research we believed that those who care most for the environment were likely to work less. However, in the following analysis we show that those who say they care most about the environment are more likely to work longer hours, and prefer to do so. This has serious ramifications for European policymakers as they seek to fulfil their obligations under COP21.

### 3 Methods and Descriptive Statistics

In order to elaborate on the research question — whether environmental attitudes are congruent with work time patterns and preferences — we use data from the *European Social Survey* (ESS). The ESS uniquely contains responses which will allow us to examine the correlations between attitudes towards working time and the environment. It can be argued that stated preferences may provide an unsatisfactory account of people's desires. Thus mainstream economists would focus on “revealed” preferences. Schor (1991) has also criticised such surveys from another perspective, arguing that just because somebody says they are satisfied with their working hours, does not entail their deeper (work time) desires are being fulfilled.

The ESS includes demographic information and responses to questions on specific social and economic topics. In Figure 1 we present the distribution of normal working hours in the respondent's main job (overtime included), categorised into four groups, for men and women respectively. Using wave 5 of the ESS (2010, which was the latest to include questions on family work and wellbeing) we can see that most workers in the survey normally work forty hours or more, this being particularly pronounced for men (78%). Most of the women surveyed were in this category too (62%). Women tend to be disproportionately represented (relative to men) in the part time categories (the <20 and 20-29 categories): this result is not unexpected, and is consistent with the male breadwinner model. The data on “preferred” working hours is presented in Figure 2. It is noteworthy that only 45% of men would prefer to work forty hours a week or more, and for women this figure falls to 30%. The data thus illustrates the mismatch between normal hours and preferred hours. This is reinforced when we consider that 34% of male workers and 42% of female workers, would like to work less than twenty hours. Comparing Figures 1 and 2 also indicates a misalignment between weekly working hours and preferred hours, with evidence of individuals working for longer, on average, than they would wish.

In exploring environmental preferences the descriptive statistics are presented in Figure 3. The ESS questioner asked respondents to consider the following: “She/he strongly believes that people should care for nature. Looking after the environment is important to her/him”. A Likert scale was used with respondents stating whether this is “very much like me”, “like me”, “somewhat like me”, “a little like me”, “not like me”, or “not like me at all”. The distribution in Figure 3 shows that 32% of women felt this environmental statement was “very much like me”,

whereas only 28% of men responded thus. For “like me” the responses were remarkably similar (40% of men, and 39% of women). The countries that participated in the survey are outlined in the Appendix in Table 3, though we did not use the data from Israel or Russia.

The central concern of the paper is to examine the relationship between environmental attitudes and preferences regarding working hours, and hence these questions relate to stated and revealed preferences, as discussed above. Utilising OLS regressions, two dependent variables will be considered:

$y_1$  = The total hours normally worked per week in the main job, overtime included (*wkhtot*)

$y_2$  = How many hours would you choose to work weekly? (Labelled *wkhsch* in the ESS)

This was then related to a series of independent variables.

$$y = \alpha + \beta_1 Age + \beta_2 Age^2 + \beta_3 Gender + \beta_4 Health + \beta_5 Degree + \beta_6 Income + \beta_7 Cohabiting \\ + \beta_8 Children + \beta_9 Environment + \epsilon$$

Of particular importance were individuals' attitudes towards the environment (responses to the question ‘important to care for environment’, which were placed on a Likert scale: *impenv*). Since this variable is categorical we created dummy variables for the responses using the statement was ‘very much like me’ as the reference category. Although our principal focus is on the relationship between work time (worked and preferred) and environmental attitudes we are also cognizant of the fact that individual and household considerations are relevant in determining our working hours too. Age (age and age<sup>2</sup>, *agea*) is considered and we would expect that, overall, you would work longer hours as you get older (for example because of greater financial commitments). However, beyond a certain point, as an individual nears retirement, there is a tendency for average hours to diminish, perhaps as part of a staged retirement. The age<sup>2</sup> variable captures the latter effect and we would expect a negative coefficient on this variable if the staged retirement hypothesis were borne out. We also include a gender dummy (*gndr*), specified as female, for reasons outlined in the literature review. Subjective general health (*health*) is included and coded as indicated in Table 4. We would expect that people in particularly poor health would be unable to work to as great an extent. The effect of work itself (in the sense of employment) may be more complex: people may get health benefits from working, but work can also be stressful, in particular if it is not meaningful

work (for a discussion of the latter see Spencer, 2015). Education (*eisced*) may also be a factor and we have created a dummy variable indicating whether someone has a university education or not. The household's total net income (*hinctnta*) is considered, as an individual's decision on working hours are likely to be affected by a partners, or additional, sources of income. The data is categorical, divided into 10 deciles, using the 1<sup>st</sup> decile as a reference category. Variables related to family situation — living situation (*icpartI*) and children (*chldhm*) — are likely to be further drivers of people's work time and preferences, as are other commitments, such as hours spent on housework (*hwwkhs*).

**Figure 1:** Total weekly working hours.

**Figure 2:** Working hours preferred

**Figure 3:** Distribution of environmental concern

#### 4. Regression Analysis

Our paper was predicated on the belief that individuals would — based upon the theory of planned behaviour — recognise an interconnection between consumption and environmental degradation. The logical extension of this is that people would have a consistent set of preferences and attitudes whereby those who care most about the environment would also be more willing to accept the reduced consumption associated with reduced working hours. Initially we conducted a pooled analysis before running a separate analysis for women and men. The results were tested for heteroscedasticity, autocorrelation, normality and multicollinearity. It was established that the data was suffering from issues with heteroscedasticity and therefore we used White's (1980) correction.

We have run regressions using OLS for each of our two dependent variables ( $y_1$  and  $y_2$ ) using our model specification. These are reported in Table 1. The results from  $y_1$  demonstrate that people tend to work longer with age, though this seems to only be up to a point. After a certain point there tends to be a reduction in working hours with age, perhaps associated with staged retirement or reduced willingness to take overtime (based on the age<sup>2</sup> coefficient). Women, on average, work shorter hours than men. Of course, this is paid employment and does not include housework or care provided within the household, which is disproportionately undertaken by women (for an analysis of work time which includes housework see Philp and Wheatley, 2011).

When analysing how many hours people would choose to work weekly (model  $y_2$ ) we see a similar pattern, with women preferring shorter hours. This would be consistent with Hakim's (2000) typology in which a significant number of women are assumed to have adaptive or, alternatively, home-centred preferences. People who report better health tend to work shorter hours, which indicates an association between long working hours and poor health outcomes, reinforcing the results of some studies in the area of occupational psychology (Gilboa et al, 2008). The responses to this question were skewed towards those reporting good health or better, with 23% responding '*very good*', 39% stating '*good*' and 28% '*fair*' compared to 10% who responded '*bad*' or '*very bad*'. People with a higher income tend to work longer hours, which would be expected if we assume a constant hourly wage rate. In terms of cohabiting, people who live alone tend to work longer hours than those who live with someone, and people who live with children work longer hours. This may be because of the financial burden associated with having a family (accommodation, travel, day care). However, people living with children tend to report a desire (in model  $y_2$ ) for lower working hours than those who don't. This will be considered below in gendered perspective.

**Table 1:** Dependent variables:  $y_1$  (total hours normally worked per week in the main job, overtime included);  $y_2$  (how many hours would you choose to work weekly?)

Regarding environmental preferences, individuals are asked whether they identify with the statement that "... people should care for nature. Looking after the environment is important". We used those who responded saying that the statement was "*very much like me*" as the reference category, and found negative coefficients for all statistically significant alternative categories. Thus, the "*like me*" coefficient for model  $y_1$  is -0.438, indicating that an individual would work less hours with this lower level of environmental concern relative to those most concerned with the environment. In other words, relative to those who care "*very much*" for the environment, those who care relatively less (on the Likert scale) tend to work shorter hours. This is manifest with the negative coefficients for the environmental variables, and the coefficient is greater, negatively, for the "*somewhat like me*" category. This provides evidence of a negative relationship between an individual's working hours and their environmental concern. Regarding preferred hours ( $y_2$ ) those who care relatively less about the environment prefer to work significantly shorter hours than those with relatively higher environmental

preferences. This is incongruent with our initial hypothesis that people with more progressive environmental preferences would be motivated to (and prefer to) work shorter hours.

We also ran regression with country dummies and found that UK workers work shorter hours, on average, than those in most countries, but longer than workers in Denmark, the Netherlands and Norway. For Belgium, Switzerland, Cyprus, Ireland, Sweden and Portugal the differences are insignificant. This does not take account of the distribution of work, of course. The UK tends to have a greater proportion of the work force working long hours (copies of regression with country-dummies are available on request; we have not included them here because a number of the countries have small sample sizes).

Having run OLS regressions for “all” individuals we will now consider a more nuanced analysis which accounts for gendered differences. Our two dependent variables are examined using the same independent variables as previously. These regressions are outlined in Table 2 with separate results for women and men. The results from  $y_1$  indicate that both men and women work longer with age, until a point in life when they begin to reduce their hours somewhat. The coefficients for health for men and women indicate a negative relationship between working hours and health. The coefficient indicates that this negative relationship is more profound for women. There may be a causality issue here in that health outcomes may be adversely affected by long hours, especially for women who work the “double shift” (Philp and Wheatley 2011). This becomes especially interesting when we look at preferred hours ( $y_2$ ), where we can see that people with better health prefer to work longer hours in comparison to people who report poorer health. Women with a university degree work longer hours, possibly reflecting an increased career-focus (consistent with work-centred preferences, Hakim 2000). However, men with a degree tend to work relatively shorter hours compared to men without a degree. This may reflect norms around male manual labour. For men living alone there is no significant impact on working hours, while women living alone are working significantly longer hours. Women living alone also prefer to work longer hours, possibly reflecting work-centred preferences. Men who live with children tend to work longer hours, perhaps because of the financial burden associated with the male breadwinner model. The coefficient for hours worked ( $y_1$ ) and living with children is insignificant for women, whereas women’s preferences for longer hours ( $y_2$ ) are interconnected with living with children. Women who live with children would prefer to work relatively shorter hours in comparison to women who live without children. This may, again, be the effect of the “double shift”.

The results concerning environmental attitudes display gender differences. In the previous  $y_1$  model we found that people with high environmental concern work relatively longer hours in comparison to those with a lower concern. Moreover the result for  $y_2$  indicated that those who preferred longer hours also had higher environmental preferences. When we run separate regressions for men and women we found that the  $y_1$  coefficients for men's environmental preferences are still negative, but only statistically significant for the "somewhat like me" response, and only at the 10% level. Nevertheless, although the coefficient is somewhat smaller it is still confirming the previously established relationship. Regarding preferences the coefficients are negative, indicating that men who have higher environmental preferences would rather work longer hours relative to those with lower environmental preferences. For women the effect of environmental preferences on hours worked is more profound, both in terms of significance and size of the impact. Finally, women's preferred working hours are also negatively related to environmental preference in a way which is not dissimilar to those of men.

**Table 2:** Accounting for gender differences (dependent variable  $y_1$  and  $y_2$ )

Overall, what is clear is that women and men behave differently. Women express greater environmental concern. However, in contrast to our initial hypothesis, women who care less about the environment tend to work shorter hours, and prefer to do so. This relationship is less significant for men's current working hours, but more substantial in preferred hours considering both size and sign of the coefficient. Men's hours are largely influenced by income levels and if they have children living at home, which is consistent with the breadwinner model. A way to interpret the contradictory relationship between caring for the environmental and working and preferring long working hours is that consumers may view environmental behaviour as a luxury good. Sanne's (2002) paper highlights how there are structural as well as individual forces driving consumption. Building on the plausibility of consumption lock-in, policy should perhaps target information, breaking down the idea that environmental behaviour/consumption is a luxury good. This is especially the case for women. The male breadwinner model, on the other hand, still seems to pervade male decision making, and this is a social norm which has problematic consequences.

## 5. Conclusion

Climate change is a reality, and the pace of change does not show any signs of slowing down (Rockström et al., 2009). Various strategies have been proposed to deal with this, for example taxes and subsidies to align consumption with less destructive production, and technological innovation allowing transition to a low-carbon society. Reducing waste and recycling are also proposed as part of a policy mix. More controversial strategies include focus on family planning policies, or rationing of commodities. Strategies and policies can use regulations or fiscal policy to address the problem of climate change, or can seek to influence public opinion and/or preferences via education, advice or social marketing. In economic terms behaviour can be “greened” by regulation — effectively imposing constraints — or by influencing people’s preferences (or “passions”), for example in favour of reduced consumption associated with less work. With its roots in Humean philosophy, mainstream economics tends to take agents’ preferences as given, whereas we see education and reason as bases for shaping passions towards a more sustainable future.

The present paper has focussed on a particular strategy — WTR — which is a progressive policy, viewed in terms of the household and unpaid work, wellbeing and distribution of work (between the employed and the unemployed, and by gender). Domestic consumption is a main driver of environmental degradation, emanating from the household level in developed countries (Hertwich, 2005). Simply, if people work longer, increasing their consumption, this implies a higher ecological footprint. WTR allows us to reduce an individual’s ecological footprint in a way that maintains, or even increases, their wellbeing. Our evidence suggests that many people state they care for the environment, but this environmental concern is most prevalent among those who work the longest hours. This indicates the link between long hours, higher consumption and environmental degradation is not manifest in the decisions people make.

In feminist literatures, the nature of production and consumption has been fundamentally challenged, with calls for a shift towards a sustainable care economy rather than emphasis on high consumption levels of tangible goods. In this view investment in social infrastructure — such as care, health and education — is given greater priority. Our view is that reductions in working hours can further facilitate this by redistributing time into the household sector. If weekly wages were reduced less than proportionally this would essentially change the

distribution of income between capital and labour, reversing what Marxists would describe as absolute surplus-value production. In the context of distributive conflict this is one reason why capitalism and pro-capitalist policy-makers would oppose such a policy measure.

The results found that people tend to work longer with age, until a point where there tends to be a reduction. Women, on average, work shorter hours than men and also show a preference for shorter hours (the data excludes household or care work). People with better health tend to work shorter hours, although there is a question of causality in this relationship. People in household's in higher income deciles tend to work longer hours, which is expected assuming a constant hourly wage rate. We found that people who live alone tend to work longer hours than those cohabiting. However, those with dependent children work longer hours compared to those without. Simultaneously, those living with children tend to report a higher preference ( $y_2$ ) for lower working hours than those who don't. The results showed negative coefficients for all statistically significant alternative categories on environmental attitudes and actual ( $y_1$ ), as well as preferred, hours ( $y_2$ ). In other words those who care relatively less of the environment tend to work shorter hours. These results are contrary to our initial hypothesis that people with more progressive environmental preferences would be motivated to work shorter hours, and prefer to do so.

When accounting for gender we found that both men and women work longer with age, until a point in life when they begin to reduce their hours somewhat. The negative relationship between actual working hours and health is more profound for women, although both men and women in better health prefer to longer hours ( $y_2$ ). Women with a university degree work longer hours compared to women without a degree, while men with a degree tend to work relatively shorter hours. Women living alone are working (as well as preferring) significantly longer hours. Men who live with children tend to work relatively longer hours, whereas women who live with children would prefer to work shorter hours. Crucially, both genders display a negative association between environmental attitudes and working hours. For men this relationship is more significant with regards to preferences ( $y_2$ ) in comparison to actual hours ( $y_1$ ). We found the opposite for women, where the effect of environmental attitudes on actual hours is more profound as opposed to preferred hours, both in terms of significance and size of the impact.

At the outset of the paper we highlighted the need to “green” human behaviour by shaping

preferences, at the same time as regulating to counteract climate change. If people are to make environmentally “better” choices, however, this requires a level of understanding of causal processes, in particular regarding work-time, consumption and the environment. Our results showed that people who stated they valued the environment most tended, paradoxically, to work longer hours. Moreover, those who were most concerned about the environment also tended to prefer to work longer hours. It would seem, then, that there is an incongruence between people’s decision-making vis-à-vis work time, and their environmental preferences, assuming reducing paid working hours is a desirable sustainability instrument. This may cast doubt on theories based upon planned behaviour or rational choice, indicating people are, at the very most, boundedly rational.

It is widely acknowledged that societal changes are required at the macro, meso and micro-level to deal with rapid climate changes. On a micro level this entails change in lifestyle (micro-behaviour), driven by sustainable household consumption, is vital. WTR policies are a key part of this policy mix, and have the advantage that they capture a larger behavioural aspect of environmental impact, focusing on time use and consumption, as well as production. “Greening” behaviour presents a profound challenge to policy makers, as previous efforts to induce behavioural change in the direction of environmental sustainability have been relatively unsuccessful (Fudge and Peters, 2011; Whitmarsh, 2009). Whilst our (positive) evidence points to behaviour which is inconsistent with stated preferences (vis-à-vis work time and environmental preferences), we would recommend regulation and education as appropriate normative responses.

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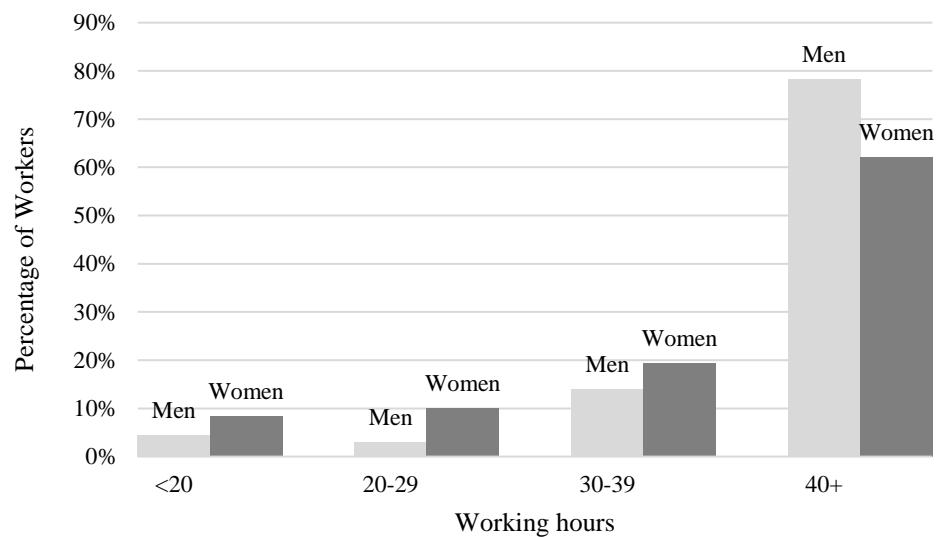
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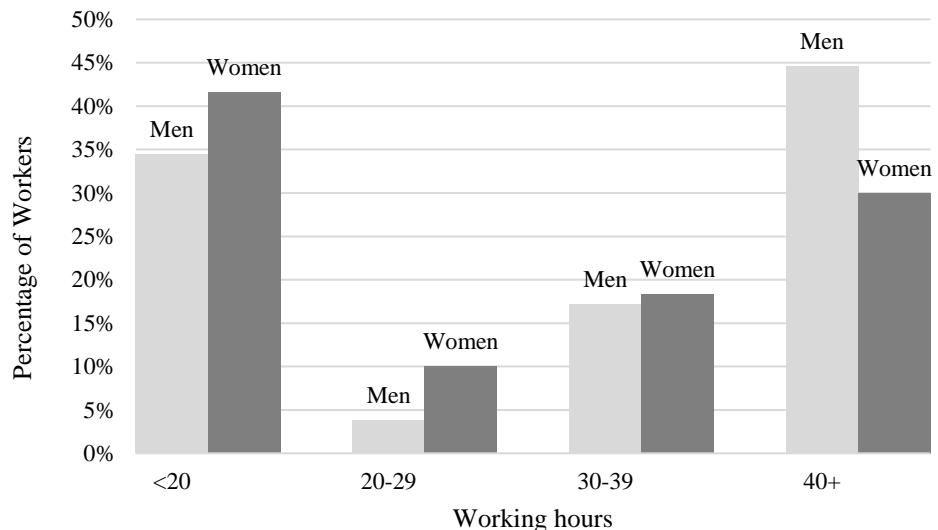
## Appendix

**Table 3:** European Social Survey countries

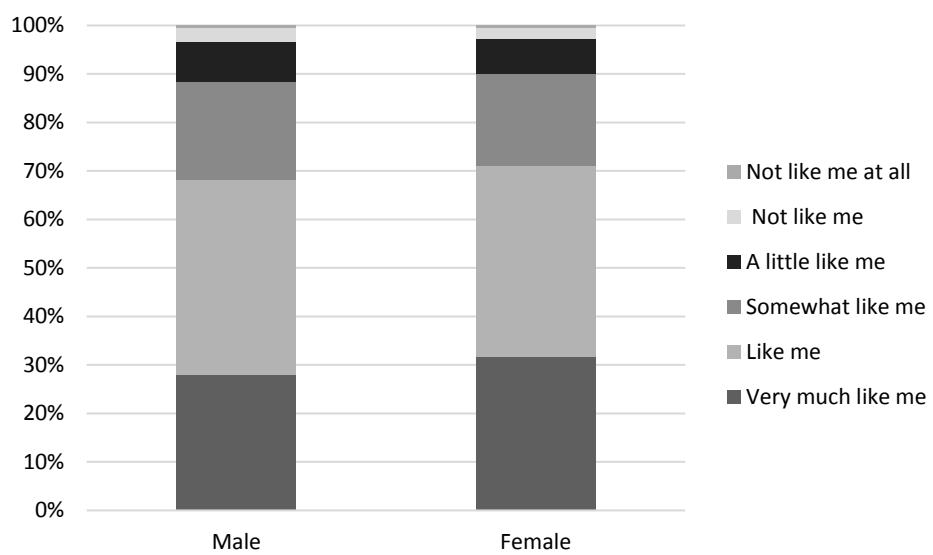
**Table 4:** Variables



**Figure 1:** Total weekly working hours.



**Figure 2:** Working hours preferred



**Figure 3:** Distribution of environmental concern

	<b>y<sub>1</sub></b>	<b>y<sub>2</sub></b>
<b>Age</b>	0.282*** (0.028)	0.931*** (0.047)
<b>Age<sup>2</sup></b>	-0.002*** (0)	-0.013*** (0.001)
<b>Female</b>	-5.847*** (0.147)	-5.525*** (0.182)
<b>Health</b>	-2.053*** (0.269)	1.629*** (0.448)
<b>Degree</b>	0.035 (0.178)	-0.544** (0.213)
<b>Income<sub>1</sub></b>	0.562* (0.332)	-0.911** (0.434)
<b>2nd decile</b>		
<b>3rd decile</b>	0.901*** (0.335)	-0.229 (0.426)
<b>4th decile</b>	1.021*** (0.336)	0.099 (0.422)
<b>5th decile</b>	1.12*** (0.335)	-0.072 (0.42)
<b>6th decile</b>	1.241*** (0.343)	0.217 (0.419)
<b>7th decile</b>	1.73*** (0.347)	0.581 (0.421)
<b>8th decile</b>	2.531*** (0.355)	0.927** (0.419)
<b>9th decile</b>	2.392*** (0.386)	0.184 (0.441)
<b>10th decile</b>	3.547*** (0.405)	0.608 (0.46)
<b>Living alone</b>	0.654*** (0.174)	1.342*** (0.223)
<b>Does not live with children</b>	-0.782*** (0.164)	0.5** (0.213)
<b>Env<sub>1</sub></b>	-0.438** (0.173)	-0.419* (0.221)
<b>Like me</b>		
<b>Somewhat like me</b>	-0.808*** (0.214)	-0.79*** (0.265)
<b>A little like me</b>	-0.492* (0.298)	-0.92*** (0.353)
<b>Not like me</b>	-1.251** (0.5)	-0.561 (0.588)
<b>Not like me at all</b>	-1.689 (1.099)	0.148 (1.605)
<b>Constant</b>	35.622*** (0.805)	20.926 (1.151)
<b>N</b>	30,788	27,104
<b>R<sup>2</sup></b>	0.072	0.100

Using “, robust” in stata. Standard errors are in parenthesis.

\*\*\*, \*\* and \* indicate 1% level of significance, 5% level of significance and 10% level of significance

**Table 1:** Dependent variables: y<sub>1</sub> (total hours normally worked per week in the main job, overtime included); y<sub>2</sub> (how many hours would you choose to work weekly?)

	<b>y<sub>1</sub> - Male</b>	<b>y<sub>1</sub> - Female</b>	<b>y<sub>2</sub> - Male</b>	<b>y<sub>2</sub> - Female</b>
<b>Age</b>	0.393*** (0.041)	0.184*** (0.039)	0.941*** (0.067)	0.938*** (0.066)
<b>Age<sup>2</sup></b>	-0.003*** (0)	-0.001** (0)	-0.013*** (0.001)	-0.013*** (0.001)
<b>Health</b>	-1.379*** (0.416)	-2.503*** (0.352)	1.719** (0.685)	1.53*** (0.59)
<b>Degree</b>	-0.914*** (0.266)	0.775*** (0.24)	-2.141*** (0.326)	0.646** (0.28)
<b>Income<sub>1</sub></b>	0.869	0.428	-1.411** (0.673)	-0.559 (0.565)
<b>2nd decile</b>	(0.547)	(0.415)		
<b>3rd decile</b>	1.4*** (0.525)	0.698 (0.435)	-0.617 (0.655)	0.096 (0.561)
<b>4th decile</b>	1.335*** (0.52)	0.989** (0.443)	-0.477 (0.645)	0.557 (0.557)
<b>5th decile</b>	1.468*** (0.514)	1.025** (0.445)	-0.391 (0.642)	0.151 (0.555)
<b>6th decile</b>	1.069** (0.522)	1.652*** (0.46)	-0.235 (0.633)	0.608 (0.561)
<b>7th decile</b>	2.12*** (0.53)	1.594*** (0.464)	0.027 (0.634)	1.048* (0.566)
<b>8th decile</b>	2.566*** (0.54)	2.778*** (0.477)	0.78 (0.632)	1.003* (0.562)
<b>9th decile</b>	2.69*** (0.585)	2.365*** (0.518)	-0.298 (0.658)	0.664 (0.597)
<b>10th decile</b>	4.486*** (0.586)	2.743*** (0.574)	0.112 (0.677)	1.251** (0.63)
<b>Living alone</b>	-0.098 (0.27)	1.208*** (0.234)	-0.012 (0.353)	2.492*** (0.293)
<b>Does not live with children</b>	-1.322*** (0.252)	-0.103 (0.221)	-0.43 (0.33)	1.532*** (0.285)
<b>Env<sub>1</sub></b>	-0.332	-0.519** (0.259)	-0.214 (0.232)	-0.589** (0.297)
<b>Like me</b>				
<b>Somewhat like me</b>	-0.581* (0.311)	-0.952*** (0.294)	-0.832** (0.391)	-0.704** (0.36)
<b>A little like me</b>	-0.045 (0.42)	-0.916** (0.423)	-1.266** (0.522)	-0.58 (0.475)
<b>Not like me</b>	-0.74 (0.679)	-1.657** (0.73)	-0.748 (0.853)	-0.307 (0.806)
<b>Not like me at all</b>	-1.365 (1.509)	-2.218 (1.599)	0.644 (2.316)	-0.52 (2.206)
<b>Constant</b>	33.17*** (1.212)	31.759*** (1.07)	22.813*** (1.68)	13.667*** (1.557)
<b>N</b>	14,629	16,153	12,752	14,348
<b>R<sup>2</sup></b>	0.033	0.023	0.08	0.069

Using “, robust” in stata. Standard errors are in parenthesis.

\*\*\*, \*\* and \* indicate 1% level of significance, 5% level of significance and 10% level of significance

**Table 2:** Accounting for gender differences (dependent variable y<sub>1</sub> and y<sub>2</sub>)

<b>Value</b>	<b>Categories</b>	<b>No in dataset</b>	<b>Excluded</b>
<b>BE</b>	Belgium	1	
<b>BG</b>	Bulgaria	2	
<b>CH</b>	Switzerland	3	
<b>CY</b>	Cyprus	4	
<b>CZ</b>	Czech Republic	5	
<b>DE</b>	Germany	6	
<b>DK</b>	Denmark	7	
<b>EE</b>	Estonia	8	
<b>ES</b>	Spain	9	
<b>FI</b>	Finland	10	
<b>FR</b>	France	11	
<b>GB</b>	United Kingdom	12	
<b>GR</b>	Greece	13	
<b>HR</b>	Croatia	14	
<b>HU</b>	Hungary	15	
<b>IE</b>	Ireland	16	
<b>IL</b>	Israel	17	X
<b>LT</b>	Lithuania	18	
<b>NL</b>	Netherlands	19	
<b>NO</b>	Norway	20	
<b>PL</b>	Poland	21	
<b>PT</b>	Portugal	22	
<b>RU</b>	Russian Federation	23	X
<b>SE</b>	Sweden	24	
<b>SI</b>	Slovenia	25	
<b>SK</b>	Slovakia	26	
<b>UA</b>	Ukraine	27	

**Table 3:** European Social Survey countries

<b>Variable</b>	<b>Label in ESS</b>	<b>Information</b>
<b>y<sub>1</sub></b>	wkhtot	Total hours normally worked per week in main job overtime included
<b>y<sub>2</sub></b>	wkhsch	How many hours would choose to work weekly
<b>Age</b>	agea	
<b>Age<sup>2</sup></b>		Age squared
<b>Gender</b>	gndr	1 = Male, 2 = Female
<b>Health</b>	health	Subjective general health. Dummy created; 1 = Very good/Good/Fair and 0 = Bad/Very bad
<b>Degree</b>	eisced	Highest level of education, ES – ISCED. Dummy created; 0 = No degree and 1=Degree (ES-ISCED V1, lower tertiary education, BA level/ES-ISCED V2, higher tertiary education, MA level)
<b>Income</b>	hinctnta	Household's total net income, all sources. Categorical variable divided into deciles from 1 to 10.
<b>Cohabiting</b>	icpart1	Dummy created; 0 = live alone and 1 = married/cohabit
<b>Children</b>	chldhm	Children living at home or not.
<b>Env<sub>1</sub></b>	Impenv	Important to care for nature and environment. Categorical variable; Very much like me, Like me, Somewhat like me, A little like me, Not like me, Not like me at all
<b>Country</b>	cntry	Country dummies created

**Table 4:** Variables