



THE UNIVERSITY *of* EDINBURGH

Edinburgh Research Explorer

Working time reduction policy in a sustainable economy

Citation for published version:

Pullinger, M 2014, 'Working time reduction policy in a sustainable economy: Criteria and options for its design' *Ecological Economics*, vol. 103, pp. 11-19. DOI: 10.1016/j.ecolecon.2014.04.009

Digital Object Identifier (DOI):

[10.1016/j.ecolecon.2014.04.009](https://doi.org/10.1016/j.ecolecon.2014.04.009)

Link:

[Link to publication record in Edinburgh Research Explorer](#)

Document Version:

Publisher's PDF, also known as Version of record

Published In:

Ecological Economics

Publisher Rights Statement:

This is an open access article under the CC BY-NC-SA license (<http://creativecommons.org/licenses/by-nc-sa/3.0/>).

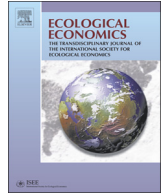
General rights

Copyright for the publications made accessible via the Edinburgh Research Explorer is retained by the author(s) and / or other copyright owners and it is a condition of accessing these publications that users recognise and abide by the legal requirements associated with these rights.

Take down policy

The University of Edinburgh has made every reasonable effort to ensure that Edinburgh Research Explorer content complies with UK legislation. If you believe that the public display of this file breaches copyright please contact openaccess@ed.ac.uk providing details, and we will remove access to the work immediately and investigate your claim.





Working time reduction policy in a sustainable economy: Criteria and options for its design

Martin Pullinger*

University of Edinburgh, School of Social and Political Science, Chrystal Macmillan Building, 15a George Square, Edinburgh, EH8 9LD, United Kingdom



ARTICLE INFO

Article history:

Received 4 June 2013

Received in revised form 24 March 2014

Accepted 12 April 2014

Available online xxxx

Keywords:

Working time reduction

Environmental sustainability

Subjective wellbeing

Life course approach

Policy design

ABSTRACT

Reducing per capita consumption, particularly amongst high income groups, is often deemed necessary to reduce the environmental impacts of the global economy. Far from implying a necessary reduction in wellbeing, some research suggests this could actually improve it: as reduced expenditure means a reduced need for income, and hence paid work, then there is the possibility for average working hours to fall, providing increased leisure time in which to pursue happiness through less consumption-intensive, but more time consuming, ways. To date, however, there has been little critical discussion of the details of what policy might need to cover to allow and encourage substantial working time reduction in a way that successfully reconciles these environmental and wellbeing goals. This article addresses this gap in the literature. It begins by reviewing the conditions under which working time reduction could bring environmental and wellbeing benefits. It then presents examples of innovative voluntary working time policies from the Netherlands and Belgium. Drawing these elements together, the article presents a new “green life course approach” for working time policy design. It argues that, as a complement to more conventional working time policies, this could be a valuable tool to combine environmental and wellbeing goals.

© 2013 The Author. Published by Elsevier B.V. This is an open access article under the CC BY-NC-SA license (<http://creativecommons.org/licenses/by-nc-sa/3.0/>).

1. Introduction

Various authors have argued that working time reduction (WTR), in the broadest sense meaning a reduction in the total levels of paid working time over the life course, could contribute to reducing the environmental impacts of the economy whilst maintaining and improving levels of wellbeing (e.g. Coote et al., 2010; Hayden, 1999; Lajeunesse, 2009; Robinson, 2006; Schor, 2005). The environmental benefits typically discussed arise when some or all of assumed future increases in labour productivity are converted into reduced working time rather than increased income. In the famous $I = PAT$ equation (total environmental impact is a product of total population \times average affluence \times the technologies used to produce all that is consumed) (Ehrlich and Holdren, 1971), this amounts to impact falling by reducing A , average affluence, over time, compared to what it would be without WTR.¹

A conventional economic analysis would conclude that this would impact negatively on wellbeing, as material consumption, and hence

levels of derived utility, would be lower with WTR than without it. However, the burgeoning psychology literature on happiness suggests that, for particular groups, and under the right conditions, working time reduction could actually be compatible with, and even beneficial for, increasing wellbeing, even with correspondingly lower income (Speth et al., 2007).

Working time reduction could therefore achieve a synergy between environmental sustainability and increased human flourishing. One issue, however, is that the details of what the “right conditions” are have received little attention, including what the principal considerations are for designing policies to support and encourage this (Kallis et al., 2013, pp. 1563–4).

This article contributes to filling this gap in the literature, by drawing on and extending an existing conceptual framework for designing policies for voluntary working time reduction, adapting it to increase its potential effectiveness in combining environmental and wellbeing goals. A three stage method is adopted to achieve this. The first stage, presented in Section 2 below, involves the identification of criteria against which to test conceptually whether a set of working time policies can be considered “good” from the perspective of being likely to combine reduced environmental impacts and increased wellbeing. It does this by selectively reviewing the main environmental and happiness arguments for working time reduction, to identify key factors in terms of outcomes (policy goals) that would need to be met, and constraints on means (policy instruments) that are theoretically

* University of Edinburgh, School of GeoSciences, Drummond Library, Drummond Street, Edinburgh, EH8 9XP, United Kingdom. Tel.: +44 131 6514465.

E-mail address: martin.pullinger@ed.ac.uk.

¹ Although, as discussed in Section 2.1, all factors in the $I = PAT$ equation are (potentially) affected.

important. In this way, a “map” is produced of the specific elements required of a functional working time policy.

In the second stage, presented in Section 3, selected “real world” working time reduction policies are described. Such policies are already widely implemented, and typically deal with particular factors or life events, such as regulating maximum working hours per week, minimum holiday entitlements, periods of parental leave, and minimum and maximum working ages. Rather than discuss these, the author focuses on select policies from the Netherlands and Belgium which are notably innovative in the level of theoretical development of the so-called “life course approach” which underlies them. This approach focuses particularly on individual rights to flexibly reduce working time at different periods of the working life, often with associated reductions in income.

In the third stage of this paper (Section 4) the author takes this life course approach as a framework and, drawing in the insights from the literature in the first stage, considers what additional modifications would enhance its effectiveness at achieving the particular goals of increasing environmental sustainability and the wellbeing of different groups. By analogy to the Dutch and Belgian cases, the resultant “green life course approach” has the potential to support otherwise unmet individual preferences for voluntary WTR, with concurrent reductions both in affluence and in the associated environmental impacts of consumption.

The article concludes (Section 5) by discussing how this approach could be a valuable complement in a sustainable economic system to other more conventional forms of working time reduction policy that focus on collective WTR (such as maximum working hours) or use-specific individual WTR (e.g. for childcare), and could enable more rapid and extensive reductions in environmental impacts. It then presents key areas where future research could contribute to better understanding how to successfully encourage and support working time reduction that increases wellbeing and reduces environmental impacts, within the constraints of the wider socio-economic system, as a call for further research on this topic in the ecological economics community and beyond.

2. Necessary Elements of Working Time Policy

2.1. Environmental Considerations

There is plentiful evidence that human activities are leading to levels of resource use and pollution beyond the environment's capacity to assimilate without significant degradation, and that critical planetary boundaries are being exceeded beyond which unpredictable non-linear and “catastrophic” changes in the Earth system may result (e.g. Rockström et al., 2009; ten Brink et al., 2009; *Worldwide Fund for Nature*, 2012). Consumption of market goods and services in high income countries is a primary driver of these trends, and household consumption represents a large proportion of that (Hertwich, 2005).

Working time reduction policies potentially influence all three of the drivers of environmental impact in the $I = PAT$ equation. The primary change that most unambiguously leads to reductions in I is affluence, A , reducing below what it would otherwise be without working time reduction (Hayden and Shandra, 2009, p. 581). Historically, policies to reduce working time have frequently linked reductions with unchanged incomes (so that, effectively, hourly wage rates increased), paid for through a combination of reduced returns on capital for business and increases in labour productivity arising from a more rested, happier and less stressed workforce (Kallis et al., 2013). In effect, productivity gains are translated into increased leisure time rather than increased income. Nevertheless, A becomes gradually lower than it would otherwise be if all productivity gains were instead translated into wage increases. Alternative WTR scenarios in which incomes fall in real terms proportionally to the reductions in working time (i.e. so that wage rates are unaffected

or increase only slightly) would accelerate the pace of reductions in A and hence I . However, the practical difficulty of garnering sufficient support amongst employees for the collective implementation of working time reduction with associated income reductions has been highlighted (Schor, 2005, pp. 45–6).

Both P and T may also be affected by WTR, although the scale and direction of change are less clear. With respect to P , households may well make different choices regarding family size if they have different working patterns and levels of affluence, leading to population effects. Indeed, working time policies have at times been used specifically to promote higher birth rates, for example through generous parental leave provisions (see, e.g. Jacquot et al., 2011, regarding French policy in this respect).

Regarding T , the technology and methods used to produce, distribute and dispose of our goods and services, changing patterns of work and leisure imply a restructuring of a person's daily routines, from leisure and childcare through to cooking and time spent with friends and relatives, as time is necessarily reallocated between activities (Shove et al., 2012). Different activities have substantially different implications for the resources consumed to enable them (Druckman et al., 2012). The composition of what is consumed will thus change as behaviours do, an effect distinct from any changes in affluence, and one which affects T as the mix of goods consumed and produced, and the resultant demands on different production methods, shifts. The patterns of change and their resultant environmental impacts are uncertain however: it is possible to imagine a future in which the extra leisure time arising from widespread reductions in working time is used to engage in low consumption–intensity time uses such as voluntary and community activities, being with family and friends, and preparing food more slowly. Alternatively, a future could also be envisaged in which it is considered normal to focus expenditure on multiple budget holidays abroad by plane each year, using the extra leisure time in high impact ways, with radically different implications for environmental impacts.

More diffuse, systemic impacts on T may also occur that could reduce the capacity of the economy to transition to more sustainable production methods (i.e. to lower T). Firstly, excessive working time reduction in certain economic sectors could lead to shortages of skilled labour in industries that are growing (e.g. in renewable energy generation) or rapidly switching to greener production methods (such as in agriculture, aquaculture, forestry and mining). Secondly, falling sales and revenue from income taxes, as affluence falls below what it would otherwise be, could suppress spending on infrastructure and technology R&D.

A small body of empirical work has analysed the links between working patterns and environmental impacts or resource use. At the individual or household level, research using household expenditure survey and time use survey data has found links between shorter working hours and lower carbon footprints, primarily because shorter hours are associated with lower incomes and then lower expenditure (i.e. lower affluence, A) (e.g. Devetter and Rousseau, 2011 for France; Nässén and Larsson, 2010 for Sweden; and Pullinger, 2011, chap. 5 for the UK and the Netherlands). Direct effects of working hours on the composition of consumption, controlling for income, are also observed in these studies, but the overall pattern is unclear: the studies of UK and Dutch expenditure data and Swedish time use data give some evidence that shorter working hours lead to more carbon intensive purchases and time uses (i.e. higher emissions per unit price or per unit time), so that shorter working hours are associated with higher impacts, controlling for income effects. These effects are, however, small and not always statistically significant. The French study, meanwhile, suggests that very long working hours (over 80 per week) are, controlling for income, correlated with higher expenditure on high impact intensity product categories (e.g. housing, hotels, transport), which suggests the opposite effect. Meanwhile, country level cross-national studies using the STIRPAT method (Dietz and Rosa, 1994; York et al., 2003), a

stochastic development of the I = PAT model, also find positive correlations, controlling for other factors, between average working hours and total environmental impact (variously measured as ecological footprint, carbon footprint or carbon dioxide emissions) (Hayden and Shandra, 2009; Knight et al., 2013). Again, this is primarily through changes in affluence (or economic output), although there is evidence that longer hours also correlate with higher ecological footprints even controlling for this, likely due to compositional changes in consumption and production. Simulations of the effects on carbon footprints, energy use or global warming of different reductions in working hours suggest that they could make a significant contribution to achieving carbon emission reduction targets and reducing the level of future climate change (Pullinger, 2011, chap. 7; Rosnick and Weisbrot, 2006; Rosnick, 2013), whilst further models of transitions to a sustainable economic system conclude that reduced working hours are an essential component to enable reduced emissions and resource use without high rates of unemployment and income inequality (see Spangenberg et al., 2002; Victor, 2012, for such simulations for the German and Canadian economies respectively). Whilst there is still scope for further and more detailed empirical research to study the effects of working time changes on expenditure, on the composition of consumption, and on structural aspects of the economy, the existing work supports the theoretical literature's argument that WTR could reduce the environmental impacts of the economy, and suggests that this is primarily through reducing affluence below what it would otherwise be.

2.2. Happiness Considerations

If increasing average national happiness² is the goal of advanced capitalist societies and economies, then something seems to have gone awry. Whilst high income economies may have largely failed to date to decouple their economic growth from the most important measures of ecological footprint and impact, they have had more unwitting success in decoupling it from increasing the happiness of their populations. Various studies using both cross-national and within-country longitudinal data indicate that the correlation between happiness and per capita income or GDP seems to become weak or even disappear (e.g. Easterlin, 1974; Jackson, 2009; SDC, 2003), at a level past about US \$10,000 per year (Frey and Stutzer, 2002).

Various alternative explanations have been put forward for what contributes to high levels of happiness, and why happiness is not increasing in high income countries. These all have implications for optimal levels of paid work and for working time policy, and are explored below. Broadly, they relate to how income and consumption, the activities a person pursues, and their inner mental states and attitudes affect happiness and human flourishing. Alternatively (and slightly more broadly) construed, these can be seen as looking for explanatory variables for high happiness levels in states of having, states of doing, and states of being. The paragraphs below discuss each of these three in turn, and their implications for the level of paid work and leisure time, and associated income.

Looking firstly at states of having, the more deterministic literature suggests that “possession” of a set of personal factors or attributes helps shape levels of happiness, notably family income, family situation (being married, divorced, widowed, cohabiting, etc), work (e.g. unemployment and security of job), community and friends, self-rated health, personal freedom, and personal values (Layard, 2006).³ One can see that money can directly buy few of these. Indeed, if one runs with the idea that humans have a

relatively fixed set of basic physiological and psychological needs, such as for food, water, shelter, warmth, love, acceptance, and a sense of creative contribution and meaning (e.g. Maslow, 1954; Max-Neef, 1991), then private market goods and services are best placed to meet quite a limited subset, largely related to material comfort and health, which can be met at relatively low (for affluent countries) levels of private income. Once these are securely met, a process of “hedonic adaptation” seems to set in, whereby individuals, having “a fixed setpoint of happiness or life satisfaction determined by genes and personality”, quickly adapt to any further increases in their income (as they do after many other life events), returning to their previous level of happiness within even a few months (Easterlin, 2004). Alternatively, income relative to others in a country may gain increasing importance for happiness as affluence increases (Donovan et al., 2002), as people shape a concept of what is a good income with reference to the apparent affluence of their friends, family, peers and wider society (Easterlin, 2004), which they signal through their consumption of so-called positional or status goods. Increases in income then increase an individual's happiness only inasmuch as he or she becomes more affluent compared to those around him or her (Mason, 1998; Schor, 1995). As this leads to the relative affluence of others falling, it is harder for a society's average happiness to increase in this scenario (Lajeunesse, 2009). Increasing working time and income becomes a zero sum game.

In terms of doing, other research points to the importance of time use, active engagement and personal meaning for wellbeing, with “the most satisfied people [being] those who *orient their pursuits toward*” [italics added] having an engaged and meaningful life, as well as a pleasant life with positive emotions and pleasure (Peterson et al., 2005). Paid work can indeed provide us these, and can be an important source of sense of purpose and of contribution (and hence meaning) in societies where it is a common activity (Waddell and Burton, 2006). The quality of jobs is important though: menial or unfulfilling work, or work where the employee lacks job security, control of their labour and the activities they perform, or of the times of day or week they work, can rather lead to job dissatisfaction, a general reduction in wellbeing and even depression (Radcliff, 2005, pp. 514–5).

What people do with their time outside of paid work also has effects on happiness. Spending substantial blocks of time actively engaged in something personally meaningful has more benefits for happiness, e.g. volunteering (Thoits and Hewitt, 2001), spending time cultivating and maintaining close social relationships with family and others (as opposed to simply just “having” them) (Becchetti et al., 2012), and engaging in creative activities where “flow” is experienced (the state of total absorption where you lose track of time) (Csikszentmihalyi, 1997). These can also lead to wellbeing benefits for others involved as well. Passive and less directed time uses, meanwhile, including watching TV and social media use, are associated with lower happiness (Chou and Edge, 2012; Cuñado and Pérez de Gracia, 2012). The collectively organised patterns of much work and vacation time in Europe may also lead to a “social multiplier effect”, where the individual utility of leisure time increases because of the enhanced ability to engage in activities with other people (Alesina et al., 2005, p. 30).

States of being meanwhile, including mental attitudes and values in relation to oneself and the world, are also found to be important for happiness. An individual's values are “an important filter through which living conditions translate into subjective well-being” (Delhey, 2009). Valuing and pursuing something deeper in life than merely the accumulation of ever more mass-produced goods are found to be important for happiness (Csikszentmihalyi, 1999; Diener and Biswas-Diener, 2002). Materialistic people have been found to be consistently less happy and satisfied with life, more distressed, more likely to suffer “depression, anxiety, and narcissism; [have] less frequent experience of pleasant emotions in daily life and more frequent experience of unpleasant emotions; more problems with substances, such as cigarettes, alcohol and illegal drugs; and even physical health problems, such

² Happiness (or “subjective wellbeing”) in the literature is often defined in terms of maintaining relatively high levels of positive emotions (“affect”), relatively low levels of negative affect, and positive self-assessments of one's own level of satisfaction (Biswas-Diener et al., 2004; Lu et al., 2001).

³ Age, gender, looks, IQ and education seem to make little difference meanwhile (Layard, 2006).

as headaches and stomach aches” (Kasser, 2006). Extroversion and conscientiousness are found to correlate with generally higher levels of happiness, and neuroticism with lower levels (Albuquerque et al., 2012).

Following that, particular activities which aim to cultivate positive mental states and attitudes are found to have long term effects on happiness – specific exercises, such as ones designed to cultivate gratitude towards others, or writing about aspects of oneself that one feels positively about, can have positive and sustained happiness effects, particularly if repeated over a period (Seligman et al., 2005), as long as “participants know about, endorse, and commit to [them]” (Lyubomirsky et al., 2011). Similarly, regularly practicing mindfulness, a mental state in which full awareness is brought to and held on the present moment and one’s own experiences of it, and which involves non-judgmentally accepting and enjoying the present fully as it is, is associated with higher levels of happiness and reduced stress, and can be cultivated through regular mindfulness meditation (Kabat-Zinn, 2004; Kasser, 2006). Such exercises and meditation techniques can be effectively taught (e.g. Baer, 2003), and also require dedicated time to set aside for practicing them.

2.3. Implications for Working Time Policies

The literature reviewed above has various implications for working time policies. From an environmental perspective, the overall conclusion is that reductions in average working times present a promising approach to reducing an economy’s environmental impacts. The size of the effects of WTR on impacts will be substantially affected by the extent to which WTR is also linked to concurrent and proportional reductions in income. Working time policy also needs to consider the use to which a person’s increasing leisure time is put too, perhaps offering preferential terms for leisure activities that have particularly low negative or high positive environmental impacts. The different labour demands and skill requirements of different industrial sectors over time suggest that levels of WTR also need to be controlled and adjusted for individual economic sectors, not just for the workforce as a whole. Finally, other policies may also be needed to ensure that P and T also continue to change in the “right” direction, including policies to influence fertility rates, sustainable consumption and production policies, such as resource taxes, to counter possible undesirable changes in the composition of consumption, and policies to ensure sufficient investment in the R&D and infrastructure needed for the wider transition to a more sustainable economic system.

The happiness literature is more nuanced. Working time reduction could leave more leisure time for a variety of wellbeing-increasing activities, but policy again perhaps needs to preferentially support particular leisure time uses over others. Done voluntarily, with policy creating an enabling environment for individuals to reduce their working time, the effective exchange of income for more free time should not in itself damage happiness. Wider employment policy could also help increase wellbeing, for example by improving the quality of jobs through increased security and creative autonomy, and by helping to redistribute work from those who want voluntarily to cut their hours to those who are unemployed or underemployed and wish the security and meaning a (good) job can provide.

3. Existing Approaches to Working Time Policy Design

Working time in labour markets is typically regulated through a set of more or less independent policies, each relating to a particular issue or stage of the life course. Common examples are limits on the maximum number of working hours per week and the minimum number of holiday days per year, maternity and paternity leave, rights to reduce working hours (e.g. for childcare, or sickness) and (pre)retirement policies. They form a spectrum ranging from strict controls on working patterns that are collectively applied to either the entire workforce or particular sections of it, through to individualised time rights that

individual employees have the option to use under specific conditions. These rules and rights are coupled with varying degrees of financial support to counter income loss, and with varying levels of job protection so that the person can return to their previous post or working patterns after any break or changes.

These policies have to fit within and respond to a wider socio-economic context and set of related policy goals. In the European context, for example, increasing international competition on globalised markets as a result of increasing economic integration, rapid technological change (European Commission, Directorate-General for Employment, 2007), an ageing and increasingly long-lived population, and falling fertility rates (Lewis et al., 2008), all threaten the fiscal sustainability of welfare state systems, an issue greatly exacerbated by the financial crisis of 2008 (Gough, 2010). The desire of governments to increase tax revenue and social insurance contributions and to reduce benefit payments in response has seen working time policy, as with wider social policy, become more employment-led (O’Connor, 2005), with the role of the welfare state being seen increasingly as being to encourage and help people into paid work rather than simply to support their income security in times of need (Dingeldey, 2007). European welfare states are thus being increasingly restructured around the principle of the “Adult Worker Model” (Lewis and Giullari, 2005), which gives paid work a central role in modern welfare state regimes. The normative assumption is that all adults should be in paid work, and should derive their own individual income (primarily) from undertaking paid work (Knijn et al., 2007), except when there are specific “socially and politically acceptable reasons” (Lewis et al., 2008) why the state should instead support them (such as in retirement, due to illness or disability, or for briefer periods of parental leave or involuntary unemployment). There is also an explicit, albeit contested, argument that people’s lifestyles and life courses are becoming increasingly varied, and that society is more accepting of this diversity, so that providing individualised rights to flexibly alter working patterns over the life course becomes more socially appropriate than collective arrangements (Knijn et al., 2007; Lewis and Giullari, 2005).

In part to attempt to address these diverse considerations, in some countries in Europe, notably the Netherlands and Belgium (whose relevant policies are described below), the design of working time policies has increasingly drawn on the “life course approach” as an underlying theoretical approach. The claim is that this approach helps individuals to meet their changing working time preferences across all stages of the life course, allowing for institutional simplification by treating policy areas once considered separately – parental leave, childcare, early retirement, disability and sickness benefits, unemployment, labour market participation rates, workforce skills training, and so on – in the same way, even with the same, unified, set of policy instruments (Delsen and Smits, 2010; Plantenga, 2004). It combines policies to reduce working time (although often just at particular periods of the life course rather than over the total working life), to increase job quality (through greater time sovereignty) and to redistribute work (by supporting re-entry into the labour market after a period of absence).

The approach draws primarily on three broad policy tools: increased time rights for employees (rights to career breaks and to flexible and part time working hours); fiscal instruments (tax credits, benefits restructuring, paid leave rights); and services in kind (primarily childcare services, which exist to facilitate and encourage a return to paid work, especially after maternity leave) (European Commission et al., 2005; Lewis and Giullari, 2005). Time rights give greater “sovereignty” over one’s own time (Klammer, 2004) to change working hours or leave and re-enter the labour market more easily and without prohibitive costs, so that protection is provided from adverse future career impacts such as job loss or labour market exclusion. Financial instruments sit alongside time rights. On the one hand, financial instruments provide facilities for the decoupling, to an extent, of when an individual works in the labour market and when they receive

income. This is achieved using borrowing and savings facilities, so that an individual saves part of their income during periods of employment for use during a later career break or period of shorter working hours, or alternatively borrows for a career break now and pays it back later through paid work (Groot and Breedveld, 2004). Such facilities simply make it easier for individuals or households to manage, or “smooth”, their income over longer periods of varied labour market contact. On the other hand, financial transfers (benefits payments) can be made from the state to the individual to protect them from income loss when they exit the labour market. The level of benefits, and hence the degree of responsibility for individual income security that is transferred from the individual to the state, varies between zero and 100% of lost income, for varying periods of time, depending on the reason for the exit from the labour market. The level and patterns of working time reduction permitted to individual employees, and the levels of associated financial support and incentives provided, can be set by the state and also varied further in different economic sectors through collective agreements between employers and unions (Koopmans and Plantenga, 2008). In this way, rights and incentives can be tailored to adjust the resultant overall levels of labour supply to meet, in principle, the aims of government and the varying labour demands of particular industries, as well as to encourage particular leisure time uses over others (e.g. childcare rather than recreational activities) and to tailor support to different demographic groups (e.g. by providing additional financial support to low income parents to make use of parental leave).

Despite claims of the life course approach’s applicability to all kinds of working time regulation, it focuses primarily on allowing and supporting individualised, voluntary changes in working patterns. In practice too, working time policies which draw on this perspective comprise an additional layer of individualised working time rights on top of existing collective arrangements, rather than an integration of all kinds of working time policies into one framework. Implicitly it is therefore attempting to alter working patterns in a new, additional way, and so represents an interesting and underexplored mechanism for achieving WTR.

The Dutch and Belgian cases mentioned earlier highlight valuable lessons to consider when attempting to implement this theoretical approach in practice. In the Netherlands, in addition to collective working time policies, individual rights to further adjust weekly working hours (including pro rata wage effects) were legislated in 2000. Part time employment is commonplace, and part time employees have the same employment rights (pro rata) as full time (Fouarge and Baaijens, 2004). In 2006 the Life Course Savings Scheme was introduced. This provides employees the opportunity to take unpaid career breaks extending up to three years (Ministry of Social Affairs and Employment, 2011). Employees making use of the scheme first save into a special Life Course Savings account, then later use these savings to cover periods of unpaid leave taken under the scheme. In short, the scheme aims to meet the principle in the life course approach of decoupling when an individual undertakes paid work and when at least some of the resultant income is received, with the intention that transitions out of and back into paid labour then become easier. A small income tax break paid per year saved into the account (€195 in 2011) incentivises use and, if breaks under the scheme are used in conjunction with the statutory maternity leave entitlement, then the state pays women approximately €650 per month (for full time leave, or pro rata equivalent for part time leave) as a reduction in the income tax which would normally be deducted from their maternity leave pay⁴ (Ministry of Social Affairs and Employment, 2011). This follows another principle of the life course perspective, of tailoring incentives to encourage career breaks for some purposes more than others.

⁴ If the mother normally has less than €650 (or the part time equivalent) deducted in income tax per month, then the remainder may be paid via a deduction in her partner’s income tax; if the partner also has insufficient income tax deducted, any remaining amount is unpaid (Ministry of Social Affairs and Employment, 2011).

Belgium meanwhile has another, different career break scheme, the Time Credit Scheme, by which individuals can take a career break at any stage of their career, taking up to a year off work full time, two years part time (with a 50% reduction in hours), or up to five years with a 20% reduction in hours, in one or more blocks. There are additional three-month, one-off “thematic” career breaks for childcare, medical and palliative care purposes (Debacker et al., 2004). These are supported by a small but not insignificant flat rate benefit, which for full time career breaks varied in 2004 between €362 and €482 per month (€502 for thematic breaks), depending on the seniority of the employee, with a supplement of €150 per month in Flanders, and approximately pro rata for part time breaks (Debacker et al., 2004). Career breakers are otherwise left to manage their own finances during the career break, unlike in the Dutch scheme, making the policy simpler to run and to implement. The rights are also stronger than in the Dutch policy – the employer cannot prevent an employee from taking a career break, except under specific circumstances, and must give the employee their post back at the end of the break. The Belgian scheme is popular with workers – use of the scheme is close to the maximum it can be within the rules, and it is increasingly used for part time breaks, that is, shortening weekly working hours (Devisscher and Sanders, 2007; Merla and Deven, 2010).

Both these cases however highlight potential difficulties in implementing such individualised working time policies. There are prominent issues regarding equality of access: usage of the schemes has been limited largely to the affluent, notably to relatively high income, two earner families (Delsen and Smits, 2010; Devisscher and Sanders, 2007). Gender inequality in usage is also apparent in the Belgian scheme, with takeup amongst younger workers being primarily by women, probably for childcare, although the balance is quite equal amongst older workers (Devisscher and Sanders, 2007). Design problems with the Dutch Life Course scheme due to political compromises during its development have also left overall usage (in terms of employees holding a Life Course Savings account, and thus potentially able to use the scheme for a career break in the future) persistently low, languishing at about 3.5% of the employed workforce since its introduction.⁵ The requirement on individuals using the scheme to save a share of their income into a special savings account in advance of a career break is a significant barrier, as it requires many years of planning and saving, and thus all but precludes its use early in adult life, such as for childcare (Plantenga, 2005). Employers meanwhile can also refuse any request to a career break except where it involves a statutory right to a break, such as for maternity leave, for pre-retirement or for long term care purposes (Ministry of Social Affairs and Employment, 2011; van der Meer and Leijnse, 2005). There is thus a substantial risk to using the scheme: an employee may save for many years into the special savings account (for which there are, in addition, significant penalties if the money is withdrawn for any purpose other than a career break), only to find their employer refuses to grant a career break. Inadequate rights and the absence of borrowing facilities have thus limited its overall usage, particularly amongst those earlier in their working lives. This low level of uptake and political division over the policy have led to its being closed to new users as at the start of 2012, effectively abolishing the policy in due course.

Stronger rights and financial incentives help make the Belgian policy more successful in terms of uptake, but bring other difficulties that working time reduction policy needs to consider: the impacts, such as extra costs, on other stakeholders. Government expenditure on the benefits it provides during breaks and on the administration of the scheme is substantial, and growing (Debacker et al., 2004). Employer approval of the form of the policy, meanwhile, is rather low, particularly

⁵ Groenendijk and Keuzenkamp (2010) for 2007, and own calculations for 2010, based on: 270,000 life course accounts existing in 2010 (Molders and Broeder, 2011), whilst the number of employees (Labour Force Survey definition) was 7.87 million in 2008 (Eurostat, 2009).

the limited ability to refuse use to employees, with employers reporting that the 80% of full time option in particular is problematic for them to accommodate (Debacker et al., 2004).

4. Modified, Green Perspective

As just described, under the life course approach, specific policy instruments are used to alter working patterns, and hence total work in the economy, by allowing and incentivising varying levels of voluntary working time reduction by individuals. The interesting aspect for sustainability economics is this approach's potential to meet, and to some extent stimulate, demand for working time reduction even with concurrent drops in income. This is likely to lead to more substantial reductions in environmental impacts by those individuals using it than WTR policies in which income is unaffected. It is also something that is currently unmet by more traditional, collective working time regulations and is only patchily covered by current individualised policies such as parental leave, which tend to be only available for specific periods in a person's life course. It thus has potential to provide an additional layer of WTR policy, complementary to existing measures, that can achieve further reductions in environmental impacts in a wellbeing improving way, by meeting individual preferences.

At the same time, however, the life course approach as it stands has no explicit environmental goals, nor wellbeing goals beyond simply enabling preferences to be met. It does not even aim to achieve any particular level of overall reductions in working time, and certainly nothing of the scale envisaged by the simulations of environmentally sustainable economies described in Section 2.1. This section therefore considers how the approach might be modified so that it better meets the environmental and wellbeing criteria for “good” working time reduction policy in a sustainable economy, as described from the literature in Section 2. The result is a modified “green life course approach” that draws on the core elements of the standard life course approach just described in Section 3, and incorporates modifications to reflect the learnings from the literature described in Section 2. Key elements are laid out in Table 1, and the following paragraphs describe each in more detail.

4.1. Policy Goals

The standard life course approach, as described in Section 3, provides an additional “layer” of working time policy that aims to support the perceived increase in the diversity of lifestyles in modern societies, by allowing greater individual flexibility for employees to alter their working patterns, both in terms of hours per week and career breaks. This support is nevertheless constrained so as to balance it with government goals such as to raise sufficient tax revenue, and with the labour requirements of different employment sectors, as well as to incorporate normative judgements about the social acceptability of different reasons for working less. In short, rights and incentives to reduce working time are set higher for sectors with relative surpluses of labour supply, and for uses of leisure time considered more valuable or acceptable (notably care leave and early retirement). The green life course approach incorporates the goal of reducing the ecological footprint of the economy substantially and as rapidly as possible. As such, based on the theory and evidence presented in Section 2.1 regarding the effects of working time reduction on ecological impacts, it is logical that the overall level of working time reduction being aimed for would be explicitly high (as opposed to being implicitly low or unregulated as in the Dutch and Belgian schemes). Secondly, based on the environmental and wellbeing evidence in Sections 2.1 and 2.2., it would also seem appropriate to increase the extent to which time rights and financial incentives are tailored based on the purpose to which any reduction in working time is put. The aim would be to provide relatively greater support for a range of leisure time uses that are

Table 1

A green life course approach to the design of working time reduction policies.

<i>Policy goals</i>
<ul style="list-style-type: none"> • To balance and support, via substantial average levels of working time reduction in the population: <ul style="list-style-type: none"> ◦ government economic, environmental and social policy goals; ◦ the labour needs of different employment sectors; ◦ individual wellbeing and preferences; and ◦ particular uses of leisure time.
<i>Policy instruments</i>
Rights and support: <ul style="list-style-type: none"> • Provide individuals high levels of freedom to control their own time: <ul style="list-style-type: none"> ◦ Time rights to alter working patterns at different scales: hours per week, days per year, periods of career break, retirement age, etc. ◦ Protection against impacts on future employability and career of reducing working time (job and employment security). ◦ Financial facilities: periods in paid work and of receipt of income partially decoupled, via saving and borrowing facilities – workers can take a career break and fund it either by saving in advance or through taking a loan and paying it back later. ◦ Other services in kind (e.g. childcare services) to facilitate desired patterns of work.
Encouragement to reduce working hours and take career breaks: <ul style="list-style-type: none"> • Financial incentives (e.g. benefit payments for shorter working hours, higher income taxes on longer working hours and overtime). • Levels of time rights and incentives increased for periods outside of paid work which are: <ul style="list-style-type: none"> ◦ Used for socially valuable or accepted reasons (e.g. childcare, retirement, lifelong learning, community participation, volunteering, personal and spiritual development). ◦ Environmentally beneficial (either directly via reduced earnings and consumption, and/or indirectly via use of leisure time in environmental projects). • Increased provision of structured activities outside of paid work which improve wellbeing and the environment, including mindfulness training, volunteering opportunities, community engagement, and creative and other activities. • Information campaigns to influence cultural and individual values, norms, practices, habits, behaviours and knowledge regarding the role of paid work, consumption and non-paid uses of time for the achievement of high levels of wellbeing.
<i>Targeting and equity</i>
<ul style="list-style-type: none"> • Encouragement of working time and income reduction amongst high income households, to reduce environmental impacts and income inequality. • Increased financial support for those on low incomes who would otherwise not be able to afford to reduce working time.

environmentally benign and/or associated with increased wellbeing, so extending support to cover not just care leave and early retirement as in the Belgian and Dutch policies, but also volunteer work in environmental and social projects, involvement in arts, crafts and cultural projects, and mindfulness training, for example.

4.2. Policy Instruments

4.2.1. Rights and Support

The key policy instruments which allow employees to reduce working time in the standard life course approach are time rights, financial facilities and services in kind.

Time rights consist of the right to flexibly reduce working hours per week and to take career breaks of varying lengths, from days to years. Importantly, policies also ensure employees can return to their previous working pattern at their old employer at the end of a career break, so they are protected from the risk of labour market exclusion.

Financial facilities meanwhile consist of optional savings and loan facilities, whereby employees can save in advance for a period of career break, or borrow for a career break earlier in their career, such as for childcare purposes, before there has been sufficient time to save enough for one.

Childcare and other services in kind also help to facilitate desired patterns of work.

Whilst there is no apparent reason to argue that these instruments need to be particularly different in a green life course approach, the case studies provide useful evidence for how they may need to be designed. The Belgian case demonstrates that long and flexible patterns of working time reduction can be achieved with time rights alone. Indeed, the compulsory and restrictive format of the financial savings facilities in the Dutch scheme, combined with the absence of loan facilities, demonstrates that poorly designed financial facilities may actually inhibit working time reduction. Financial facilities, state provided or underwritten if required, can nevertheless be hypothesised to help make the accessibility of working time reduction more equitable, by providing an extra degree of support for low income groups who could not otherwise save or borrow enough by themselves, although there is no clear empirical evidence for this from the case studies.

The case studies also highlight the difficulties in tailoring these key WTR instruments to balance employer preferences and government goals. Structural factors tend to mean employers prefer long hours per employee and so resist working time reductions (Schor, 2005, pp. 43–45), and how to maximise the fit between the interests of employers and an accelerated programme of working time reduction is still an unsolved issue. Balancing substantial WTR with the need to maintain state tax revenue could also be problematic. One possibility would be to simultaneously expand Environmental Tax Reform, recouping lost revenue from labour taxes by increasing taxes on resources and pollution. Theoretical arguments, simulations, and actual experience in various European countries all suggest that Environmental Tax Reform has the potential to maintain state revenue even as tax revenue from labour reduces, additionally bringing environmental benefits (Bosquet, 2000; Patuelli et al., 2005).

4.2.2. Encouragement to Reduce Working Time

The standard life course approach provides, as a form of encouragement, financial incentives (benefits and tax credits) to reduce working time for particular purposes, such as for childcare. There seems to be scope to extend this approach to encourage more WTR. The aim of the green life course approach would be to increase incentives to encourage higher overall reductions in working time, and also to provide higher incentives for leisure activities with potential environmental and wellbeing benefits, as described in Section 4.1. Lajeunesse (2009) also suggests levying higher income taxes on long working hours and overtime. This has the dual effect of further discouraging long hours, and also partially offsetting the cost to the state of financing extra career break incentives.

Pressures from social and cultural norms to value and pursue high levels of paid work and income (Bocock, 1993; Kasser, 2006; Mason, 1998; Stutzer and Frey, 2006) also point to a role for other kinds of intervention to change working patterns and the leisure activities engaged in. Information campaigns, for example, could help foster positive social attitudes towards working less, and raise awareness of the associated wellbeing benefits of spending more time with family and friends, volunteering, and so on. Financial and other support to increase the levels of provision and accessibility of courses such as mindfulness training, and of voluntary and community activities, could also help raise the profile of these as “normal” pastimes.

The overall aim would be to encourage significant and growing levels of voluntary working time reduction, and to also promote and provide opportunities to adopt lifestyles in which people are “less attached to carbon intensive consumption and more attached to relationships, pastimes, and places that absorb less money and more time” (Coote et al., 2010), shifting from a focus on having as the route to happiness, more towards doing and being (cf. Section 2.2). Again, however, more research into how this could be achieved is needed, and the burgeoning literature on behaviour and lifestyle change warns

of the difficulty in attempting to engineer such shifts in cultural values, behaviours and socio-technical systems (Shove and Walker, 2007).

4.3. Targeting and Equity

The prevalence of equity issues in the Dutch and Belgian schemes, in terms of unequal usage of working time reduction by different groups, particularly along the lines of income and gender, means this warrants particular attention in a green life course approach, although evidence for what would constitute effective remedies is weak.

From the environmental perspective, it is particularly important to encourage working time reduction amongst higher income households, as it is reductions in their working time (and incomes) that would bring the largest reductions in consumption levels and hence environmental impacts. One simulation of reduced working time for the UK and Dutch economies, for example, shows that the highest income quintile would account for between 25% and 47% of total emission reductions, and the lowest income quintile just 1–8% (Pullinger, 2011, chap. 7).

From the social perspective, larger income reductions in high income households would reduce income inequality, all else being equal. To reduce the risk of a concurrent rising inequality in leisure time, in which only these more affluent households could afford to reduce working hours, low income households may additionally require financial support. Lajeunesse (2009), for example, suggests ensuring that those households on less than median per capita income can reduce their working hours for a period without net income loss, via receiving compensatory benefits.

Gender equality in work and care patterns, meanwhile, is a problem affecting nearly all existing individualised career break schemes, such as those for parental leave and retirement, and is in part linked to continued attitudes about gender roles relating to childcare in particular (Esping-Andersen, 2009). Whilst some countries have experimented with “earmarking” periods of parental leave so that the father is required to take some of the parents’ total allocation, practical options to reduce gender inequality in working patterns are still in need of further research.

5. Conclusion

This paper has argued that in the sustainability economics literature, a case has been made that working time reduction could, under certain conditions, lead to simultaneous environmental and wellbeing benefits in high income countries, but that there is a need to further describe the conceptual and practical details of policy approaches that might enable this. It has been argued here that one effective way to develop more detailed policy advice is to review existing working time policies and conceptual approaches in the light of the research evidence on the effects of working patterns on the environment and human wellbeing. This can then give insights into how real-world policy could be adapted to more explicitly consider and incorporate environmental and wellbeing goals.

Following just such an approach, this paper has reviewed the environmental and wellbeing literature relating to working time, leisure and income, and evaluated innovative working time policies in the Netherlands and Belgium. Whilst clearly just one of many possible WTR options, the life course approach upon which these policies draw, with the adjustments and provisos described in Section 4, does appear to offer the potential to tap into a relatively unmet demand for voluntary, flexible WTR with concurrent income reductions. This could represent an additional layer of working time policy on top of more conventional collective and “use specific” individualised policies such as working hours and holiday regulation or parental leave, one with the potential to hasten reductions in environmental impacts whilst benefiting the wellbeing of those who choose to make use of it. It thus represents a potentially valuable policy tool for sustainable economies,

with the potential to improve the “environmental efficiency of wellbeing” (Knight and Rosa, 2011).

It is also clear that other policy changes are likely to be needed concurrently to substantial working time reduction, to shape the diverse systemic effects on social, economic and environmental factors, so as to lead to the intended outcomes for wellbeing and the environment. Further policies to influence fertility rates, environmental tax reform to maintain state revenues and investment in green R&D and to discourage environmentally damaging consumption patterns, and policies to address impacts on employer competitiveness, where they occur, are all likely to be needed.

This paper also highlights various areas where further research would be beneficial. There is scope for further empirical work to identify the effects of working time reduction policies, such as the Dutch and particularly Belgian examples, on environmental impacts, wellbeing, employer productivity and state revenue, to provide further evidence to refine the existing theoretical and simulation work in this area. The effectiveness of financial and other, softer, policy tools to incentivise reduced working hours, despite countervailing pressures from cultural norms and employers to pursue high levels of paid work and income, also requires further analysis. This could involve policy analysis as well as qualitative research into the experiences of people who have “voluntarily simplified” (McDonald et al., 2006) to identify the issues faced in practice. The benefit of considering existing working time policies is that there is greater potential to analyse such issues empirically. More research would also help further develop, and test the effectiveness of, different policy instruments to support working time reduction, and to situate them within a wider economic system which more effectively combines environmental sustainability with human wellbeing. This paper represents a contribution to such a research agenda. It has argued for an additional layer of working time policies that draw on a “green life course approach” to support and encourage voluntary working time reductions, with concurrent income reductions, as a way to more quickly reduce environmental impacts whilst improving wellbeing.

Acknowledgements

Thank you to my supervisors for input throughout my PhD research, the results of which this paper presents a part, and to reviewers of earlier drafts of this paper for valuable comments. This work was supported by the Economic and Social Research Council [grant number PTA-031-2005-00233].

References

Albuquerque, I., de Lima, M.P., Matos, M., Figueiredo, C., 2012. Personality and subjective well-being: what hides behind global analyses? *Soc. Indic. Res.* 105, 447–460. <http://dx.doi.org/10.1007/s11205-010-9780-7>.

Alesina, A., Glaeser, E.L., Sacerdote, B., 2005. *Work and leisure in the U.S. and Europe: why so different?* NBER Working Paper No. 11278. National Bureau of Economic Research.

Baer, R.A., 2003. Mindfulness training as a clinical intervention: a conceptual and empirical review. *Clin. Psychol. Sci. Pract.* 10, 125–143. <http://dx.doi.org/10.1093/clipsy.bpg015>.

Becchetti, L., Ricca, E.G., Pelloni, A., 2012. The relationship between social leisure and life satisfaction: causality and policy implications. *Soc. Indic. Res.* 108, 453–490. <http://dx.doi.org/10.1007/s11205-011-9887-5>.

Biswas-Diener, R., Diener, E., Tamir, M., 2004. The psychology of subjective well-being. *Daedalus* 133, 18–25.

Bocock, R., 1993. *Consumption*. Routledge, London, New York.

Bosquet, B., 2000. Environmental tax reform: does it work? A survey of the empirical evidence. *Ecol. Econ.* 34, 19–32. [http://dx.doi.org/10.1016/S0921-8009\(00\)00173-7](http://dx.doi.org/10.1016/S0921-8009(00)00173-7).

Chou, H.-T.G., Edge, N., 2012. “They are happier and having better lives than I am”: the impact of using Facebook on perceptions of others’ lives. *Cyberpsychology Behav. Soc. Netw.* 15, 117–121. <http://dx.doi.org/10.1089/cyber.2011.0324>.

Coote, A., Franklin, J., Simms, A., 2010. *21 Hours: Why a Shorter Working Week Can Help Us All to Flourish in the 21st Century*. New Economics Foundation, London.

Csikszentmihalyi, M., 1997. Happiness and creativity: going with the flow. *Futurist* 31, 8–12.

Csikszentmihalyi, M., 1999. If we are so rich, why aren’t we happy? *Am. Psychol.* 54, 821–827. <http://dx.doi.org/10.1037/0003-066X.54.10.821>.

Cuñado, J., Pérez de Gracia, F., 2012. Does media consumption make us happy? Evidence for Spain. *J. Media Econ.* 25, 8–34. <http://dx.doi.org/10.1080/08997764.2012.651052>.

Debacker, M., de Lathouwer, L., Bogaerts, K., 2004. Time credit and leave schemes in the Belgian welfare state. *Work Package 6: Quality in Labour Market Transitions: An European Challenge*. Presented at the TLM.net Conference. Royal Academy of Sciences, Amsterdam.

Delhey, J., 2009. From materialist to postmaterialist happiness? National affluence and determinants of life satisfaction in cross-national perspective. *World Values Res.* 2, 30–54.

Delsen, L., Smits, J., 2010. Does the Life Course Savings Scheme have the potential to improve work–life balance? *Br. J. Ind. Relat.* 48, 583–604.

Devetter, F.-X., Rousseau, S., 2011. Working hours and sustainable development. *Rev. Soc. Econ.* 69, 333–355.

Devisscher, S., Sanders, D., 2007. Ageing and life-course issues: the case of the career break scheme (Belgium) and the life-course regulation (Netherlands). In: D’Addio, A.C., Whiteford, P. (Eds.), *Modernising Social Policy for the New Life Course*. OECD, Paris, pp. 117–132.

Diener, E., Biswas-Diener, R., 2002. Will money increase subjective well-being? *Soc. Indic. Res.* 57, 119–169.

Dietz, T., Rosa, E.A., 1994. Rethinking the environmental impacts of population, affluence and technology. *Hum. Ecol. Rev.* 1, 277–300.

Dingeldey, I., 2007. Between workfare and enablement – the different paths to transformation of the welfare state: a comparative analysis of activating labour market policies. *Eur. J. Polit. Res.* 46, 823–851.

Donovan, N., Halpern, D., Sargeant, R., 2002. *Life Satisfaction: The State of Knowledge and Implications for Government*. Cabinet Office Strategy Unit, London.

Druckman, A., Buck, I., Hayward, B., Jackson, T., 2012. Time, gender and carbon: a study of the carbon implications of British adults’ use of time. *Ecol. Econ.* 84, 153–163.

Easterlin, R.A., 1974. Does economic growth improve the human lot? Some empirical evidence. In: David, P.A., Reeder, M.W. (Eds.), *Nations and Households in Economic Growth*. Academic Press, New York, pp. 89–125.

Easterlin, R.A., 2004. The economics of happiness. *Daedalus* 133, 26–33.

Ehrlich, P.R., Holdren, J.P., 1971. Impact of population growth. *Science* 171, 1212–1217.

Esping-Andersen, G., 2009. *The Incomplete Revolution: Adapting to Women’s New Roles*. Polity Press, Cambridge.

European Commission and Directorate-General for Employment, 2007. *Towards Common Principles of Flexicurity: More and Better Jobs through Flexibility and Security*. Office for Official Publications of the European Communities, Luxembourg.

European Commission, Directorate-General for Employment Social Affairs and Equal Opportunities Unit G., EU Expert Group on Gender Social Inclusion and Employment, Plantenga, J., Remery, C., 2005. *Reconciliation of Work and Private Life: A Comparative Review of Thirty European Countries*.

Eurostat, 2009. LFS Series – Detailed Quarterly Survey Results (from 1998): Reference Metadata in Euro SDMX Metadata Structure (ESMS) [WWW Document]. URL http://epp.eurostat.ec.europa.eu/cache/ITY_SDDS/EN/lfsq_esms.htm (accessed 3.23.10).

Fouarge, D.J.A.G., Baaijens, C., 2004. Changes in working hours and job mobility: the effect of Dutch legislation. *OSA Working Paper 2004-23*. Tilburg.

Frey, B.S., Stutzer, A., 2002. *Happiness and Economics: How the Economy and Institutions Affect Human Well-being*. Princeton University Press, Princeton.

Gough, I., 2010. Economic crisis, climate change and the future of welfare states. *Contemp. Soc. Sci. J. Acad. Soc. Sci.* 5, 51. <http://dx.doi.org/10.1080/17450140903484049>.

Groenendijk, H., Keuzenkamp, S., 2010. 2.19 The Netherlands. In: Moss, P. (Ed.), *International Review of Leave Policies and Related Research 2010, Employer Relations Research Series*. Department for Business, Innovation and Skills, London, pp. 161–168.

Groot, L., Breedveld, K., 2004. Time over the life course: preferences, options and life course policy. *Tijdschr. Voor Arb.* 20, 288–302.

Hayden, A., 1999. *Sharing the Work, Sparing the Planet*. Zed Books, Sydney.

Hayden, A., Shandra, J.M., 2009. Hours of work and the ecological footprint of nations: an exploratory analysis. *Local Environ.* 14, 575–600.

Hertwich, E.G., 2005. Life cycle approaches to sustainable consumption: a critical review. *Environ. Sci. Technol.* 39, 4673–4684.

Jackson, T., 2009. *Prosperity without Growth? Economics for a Finite Planet*. Sustainable Development Commission, London.

Jacquot, S., Ledoux, C., Palier, B., 2011. The Europeanization of reconciliation policies in France: boasting... but learning. *Eur. J. Soc. Secur.* 13, 69–88.

Kabat-Zinn, J., 2004. *Wherever You Go, There You Are: Mindfulness Meditation for Everyday Life*. Piatkus Books.

Kallis, G., Kalush, M., O’Flynn, H., Rossiter, J., Ashford, N., 2013. “Friday off”: reducing working hours in Europe. *Sustainability* 5, 1545–1567. <http://dx.doi.org/10.3390/su5041545>.

Kasser, T., 2006. Materialism and its alternatives. In: Csikszentmihalyi, M., Csikszentmihalyi, I.S. (Eds.), *A Life Worth Living: Contributions to Positive Psychology*. Oxford University Press, Oxford, pp. 200–214.

Klammer, U., 2004. Flexicurity in a life-course perspective. *Transf. Eur. Rev. Labour Res.* 10, 282–299. <http://dx.doi.org/10.1177/102425890401000210>.

Knight, K.W., Rosa, E.A., 2011. The environmental efficiency of well-being: a cross-national analysis. *Soc. Sci. Res.* 40, 931–949. <http://dx.doi.org/10.1016/j.sresresearch.2010.11.002>.

Knight, K.W., Rosa, E.A., Schor, J.B., 2013. Could working less reduce pressures on the environment? A cross-national panel analysis of OECD countries, 1970–2007. *Glob. Environ. Chang.* 23, 691–700. <http://dx.doi.org/10.1016/j.gloenvcha.2013.02.017>.

Knijn, T., Martin, C., Millar, J., 2007. Activation as a common framework for social policies towards lone parents. *Soc. Policy Adm.* 41, 638–652.

- Koopmans, I., Plantenga, J., 2008. Managing and distributing the care risk: an evaluation of the modernisation of the Dutch social security system. FISS Seminar on Social Protection for a Post-Industrial World, Sigtuna, Sweden, 13–15 June 2008.
- Lajeunesse, R., 2009. *Work Time Regulation as Sustainable Full Employment Strategy*. Routledge.
- Layard, R., 2006. *Happiness: Lessons from a New Science*. Penguin Books, New York; London.
- Lewis, J., Giullari, S., 2005. The Adult Worker Model family, gender equality and care: the search for new policy principles and the possibilities and problems of a capabilities approach. *Econ. Soc.* 34, 76–104. <http://dx.doi.org/10.1080/0308514042000329342>.
- Lewis, J., Knijn, T., Martin, C., Ostner, I., 2008. Patterns of development in work/family reconciliation policies for parents in France, Germany, the Netherlands, and the UK in the 2000s. *Soc. Polit. Int. Stud. Gen. State Soc.* 15, 261–286. <http://dx.doi.org/10.1093/sp/jxn016>.
- Lu, L., Gilmour, R., Kao, S.F., Weng, T.H., Hu, C.H., Chern, J.G., Huang, S.W., Shih, J.B., 2001. Two ways to achieve happiness: when the East meets the West. *Personal. Individ. Differ.* 30, 1161–1174.
- Lyubomirsky, S., Dickerhoof, R., Boehm, J.K., Sheldon, K.M., 2011. Becoming happier takes both a will and a proper way: an experimental longitudinal intervention to boost well-being. *Emotion* 11, 391–402. <http://dx.doi.org/10.1037/a0022575>.
- Maslow, A., 1954. *Motivation and Personality*. Harper and Row, New York.
- Mason, R., 1998. *The Economics of Conspicuous Consumption: Theory and Thought Since 1700*. Edward Elgar Publishing Ltd.
- Max-Neef, M., 1991. *Human Scale Development: Conception, Application and Further Reflections*. The Apex Press, New York.
- McDonald, S., Oates, C.J., Young, C.W., Hwang, K., 2006. Toward sustainable consumption: researching voluntary simplifiers. *Psychol. Mark.* 23, 515–534.
- Merla, M., Deven, F., 2010. 2.4 Belgium. In: Moss, P. (Ed.), *International Review of Leave Policies and Related Research 2010*, Employer Relations Research Series. Department for Business, Innovation and Skills, London, pp. 59–64.
- Ministry of Social Affairs and Employment, 2011. *Life-Course Savings Scheme* [WWW Document]. URL http://english.szw.nl/index.cfm?menu_item_id=14640&hoofdmenu_item_id=14632&rubriek_item=392437&rubriek_id=391971&set_id=3628&ddoctype_id=6&link_id=130143 (accessed 5.25.11).
- Molders, M., Broeder, S., 2011. Total amount deposited in Life-Course Savings Schemes stable, more withdrawals. *Web Mag. CBS Stat. Neth.*
- Nässén, J., Larsson, J., 2010. Would shorter work time reduce greenhouse gas emissions? An analysis of time use and consumption in Swedish households. No. Working Paper, Version March 26, 2010. Chalmers University of Technology, Gothenburg, Sweden.
- O'Connor, J., 2005. Employment-anchored social policy, gender equality and the open method of policy coordination in the European Union. *Eur. Soc.* 7, 27–52.
- Patuelli, R., Nijkamp, P., Pels, E., 2005. Environmental tax reform and the double dividend: a meta-analytical performance assessment. *Ecol. Econ.* 55, 564–583. <http://dx.doi.org/10.1016/j.ecolecon.2004.12.021>.
- Peterson, C., Park, N., Seligman, M.E.P., 2005. Orientations to happiness and life satisfaction: the full life versus the empty life. *J. Happiness Stud.* 6, 25–41. <http://dx.doi.org/10.1007/s10902-004-1278-z>.
- Plantenga, J., 2004. Care concerns during the life course. English Translation of the ESB-Dossier “Levensloopbeleid” (Life Course Policies), pp. 23–25.
- Plantenga, J., 2005. Dutch debates: modernising social security by introducing the life course as a frame of reference. In: de Gijzel, P., Schenk, H. (Eds.), *Multidisciplinary Economics: The Birth of a New Economics Faculty in the Netherlands*. Springer, Dordrecht, pp. 53–64.
- Pullinger, M., 2011. *Greening Our Working Lives: The Environmental Impacts of Changing Patterns of Paid Work in the UK and the Netherlands, and Implications for Working Time Policy*. (No. PhD thesis) University of Edinburgh, Edinburgh.
- Radcliff, B., 2005. Class organization and subjective well-being: a cross-national analysis. *Soc. Forces* 84, 513–530.
- Robinson, T.J.C., 2006. *Work, Leisure and the Environment: The Vicious Circle of Overwork and Over Consumption*. Edward Elgar, Cheltenham.
- Rockström, J., Steffen, W., Noone, K., Persson, Å., Chapin, F.S.I., Lambin, E., Lenton, T.M., Scheffner, M., Folke, C., Schellnhuber, H., Nykvist, B., De Wit, T., Hughes, T., van der Leeuw, S., Rodhe, H., Sörlin, S., Snyder, P.K., Costanza, R., Svedin, U., Falkenmark, M., Karlberg, L., Corell, R.W., Fabry, V.J., Hansen, J., Walker, B., Liverman, D., Richardson, K., Crutzen, P., Foley, J., 2009. Planetary boundaries: exploring the safe operating space for humanity. *Ecol. Soc.* 14, 32.
- Rosnick, D., 2013. Reduced work hours as a means of slowing climate change. *Real-World Econ. Rev.* 63, 124–133.
- Rosnick, D., Weisbrot, M., 2006. *Are Shorter Working Hours Good for the Environment? A Comparison of U.S. and European Energy Consumption*. Center for Economic and Policy Research, Washington, D.C.
- Schor, J., 1995. Can the North stop consumption growth? Escaping the cycle of work and spend. In: Bhaskar, V., Glyn, A. (Eds.), *The North, the South and the Environment: Ecological Constraints and the Global Economy*. Earthscan, London, pp. 68–84.
- Schor, J., 2005. Sustainable consumption and worktime reduction. *J. Ind. Ecol.* 9, 37–50.
- SDC, 2003. *Redefining Prosperity: Resource Productivity, Economic Growth and Sustainable Development*. UK Sustainable Development Commission, London.
- Seligman, M.E.P., Steen, T.A., Park, N., Peterson, C., 2005. Positive psychology progress: empirical validation of interventions. *Am. Psychol.* 60, 410–421. <http://dx.doi.org/10.1037/0003-066X.60.5.410>.
- Shove, E., Walker, G., 2007. CAUTION! Transitions ahead: politics, practice, and sustainable transition management. *Environ. Plan. A* 39, 763–770.
- Shove, E., Pantzar, M., Watson, M., 2012. *The Dynamics of Social Practice: Everyday Life and How It Changes*. Sage, Los Angeles, Calif, London.
- Spangenberg, J.H., Omann, I., Hinterberger, F., 2002. Sustainable growth criteria: minimum benchmarks and scenarios for employment and the environment. *Ecol. Econ.* 42, 429–443.
- Speth, J.G., Costanza, R., Hassol, S.J., Kasser, T., 2007. Some Convenient Truths: Scaling Back Our Energy-Hungry Lifestyles Means More of What Matters, Not Less [WWW Document]. URL <http://www.grist.org/article/scaling-back-our-energy-hungry-lifestyles-means-more-of-what-matters-not-le> (accessed 6.2.09).
- Stutzer, A., Frey, B., 2006. What happiness research can tell us about self-control problems and utility misprediction. *Institute for Empirical Research in Economics Working Paper*, No. 267.
- Ten Brink, P., Berghöfer, A., Schröter-Schlaack, C., Sukhdev, P., Vakrou, A., White, S., Wittmer, H., 2009. *TEEB – The Economics of Ecosystems and Biodiversity for National and International Policy Makers – Summary: Responding to the Value of Nature*. United Nations Environment Programme.
- Thoits, P.A., Hewitt, L.N., 2001. Volunteer work and well-being. *J. Health Soc. Behav.* 42, 115–131. <http://dx.doi.org/10.2307/3090173>.
- Van der Meer, M., Leijnse, F., 2005. *Life-Course Savings Schemes and social policy reform in the Netherlands. On the Relationship between the Welfare State, Social Pacts and the Management of New Social Risks*, TLM.NET Working Paper No. 2005-19. SISWO/Social Policy Research, Amsterdam.
- Victor, P., 2012. Growth, degrowth and climate change: a scenario analysis. *Ecol. Econ.* 84, 206–212. <http://dx.doi.org/10.1016/j.ecolecon.2011.04.013>.
- Waddell, G., Burton, A.K., 2006. *Is Work Good for Your Health and Well-being? The Stationery Office*, London.
- Worldwide Fund for Nature, 2012. *WWF Living Planet Report 2012* [WWW Document]. WWF. URL http://wwf.panda.org/about_our_earth/all_publications/living_planet_report/ (accessed 7.27.12).
- York, R., Rosa, E.A., Dietz, T., 2003. Footprints on the earth: the environmental consequences of modernity. *Am. Sociol. Rev.* 68, 279–300. <http://dx.doi.org/10.2307/1519769>.