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Sustainable Consumption and Social Justice in a Constrained World

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Introduction

The problem

Economic growth has turned from a means of guaranteeing and increasing prosperity into a goal of its own for economic policies worldwide. Growth is depicted as a magic wand to transition countries of the Global North out of financial crises, and to accomplish development and the overcoming of poverty and environmental degradation in countries of the Global South. Modern societies are structurally dependent on economic growth for their stabilization: tax revenue, social pacification, debt financing, the pretext of job creation, and the perspective of on-going prosperity are interlinked with a growing economy – and consumption is perceived as one of the major driver of economic growth. The goal of the degrowth-movement is not to reverse growth and embrace an unavoidable recession, but to transform institutions, practices, and values towards a growth-independent paradigm. Social experiments in a de-growth perspective address new forms of production, consumption, social relations, as well as new institutions, towards social-ecological transformation.

With this in mind, sustainable consumption can no longer be perceived solely in terms of the responsibility of individuals to change their lifestyles. In a social and cultural setting in which consumption triggers growth and, therefore, is expected to secure collective prosperity, consuming has been projected as being almost a civic duty (e.g., George W. Bush's so-called appeal to shopping as a response to the 9.11. attacks). Cultural and material infrastructures as well as institutional settings reinforce the consumption paradigm while at the same time more and more voices call for environmentally and socially responsible lifestyles. In-built obsolescence of products, the glamour of technological novelties and luxury goods, but also urban planning, and time cultures and politics, are all oriented towards promoting over-consumption, yet individual consumers have little room for manoeuvre in addressing these factors.

Sustainable consumption from this point of view risks remaining a privilege for the rather few social milieus that identify with values of voluntary simplicity, sufficiency, or sustainable lifestyles, yet more than micro-efforts by the few are necessary for challenging the economic growth paradigm. What's more, as consumption is not only a vehicle of need-satisfaction, but also the main carrier of social recognition, these models risk neglecting important aspects of social (in)justice and (in)equality built in the cultural value setting of sustainable consumption. Several trends are underway, which highlight the importance of social justice in relation to sustainable consumption:

- Sustainable consumption in its dominant understanding often involves buying the 'right stuff', which is economically unaffordable for many people under current conditions of wealth distribution. This kind of 'green consumerism' also avoids challenging the growth paradigm as it relates to over-consumption.

- Different groups of people still consume – often considerably – less than 'average' either because they still practice 'traditional' lifestyles or because they live in some level of poverty. More often than not, these groups aspire to more not less consumption, posing a moral issue of who gets to decide on consumption limits – both upper and lower.

- Sustainable consumption seems to embody patterns of recognition that are attractive for the educated middle-classes, increasing social and cultural capital in

some contexts, whereas it can be experienced as oppressive by other social milieus, who have not yet even started approaching the so-called burden of overconsumption. Related to this is the equating of sustainable consumption to non-consumption and austerity, which has been called cynical and unjust by some.

- The moralism surrounding the over-individualisation of environmental responsibility may be leading certain consumers towards sustainability fatigue and even the reinforcement of un-sustainable patterns of consumption.

It is therefore critical to consider consumption in different contexts, with stark differences between urban and rural settings. Different social groups must also be considered, including elites, middle-classes and under-privileged groups, evolving in so-called developed and developing economies, as well as in economies in transition. A more systemic approach is necessary, that goes beyond individual behaviour, including a vision of what constitutes a sustainable lifestyle, in all of its multiple variants.

The challenges this presents

Considering consumption from the point of view of its socio-political, structural, and cultural conditions requires a deep-going analysis of policies, political and social settings, and institutions and infrastructures that aim for economic growth and, indirectly, unsustainable consumption. It calls attention to built-in obsolescence, rebound-effects, social norms, policies and regulations, physical infrastructure and built environment, among others. It also calls for a set of changes not only in policies and institutions, but also in individual and collective practices that enable sustainable consumption as something substantial and significant (and not just as a shift towards a new market sector), by – for example – containing rebound-effects or prolonging the life-cycle of products, promoting shared use on a large scale, or challenging energy and resource-intensive lifestyles and related social norms. This list of action is by no means complete: numerous solutions have been suggested, at different scales, but their feasibility and impact have yet to be assessed. Most interventions, if effective, will necessarily affect economic growth and require a more radical transformation of societal structures, including new opportunities for job creation and job sharing.

Moreover, if sustainable consumption has to enter the core of society, issues of social justice, access to resources, distribution of wealth, and social recognition have to be addressed: how can the discussion of sustainable consumption leave the confined sphere of educated middle class LOHAS (Lifestyles of Health and Sustainability) and become a battleground for the transformation of communities? How can issues of equality be addressed under the perspective of sustainable consumption, from the perspective of both under and over consumption? What kind of transformation of space, time, and relations are needed on this path and at what scale? Last but not least, where and what can we learn from practices, social experiments, and alternative projects that have been successful in addressing some of these issues, beyond the micro scale? Where is this transformation already on the go? What role do cities-regions play, as high potential areas for social innovation and transformation?

The workshop documented here aimed to explore how we can better apprehend existing changes towards more sustainable forms of consumption, as well as how such efforts could be replicated across different communities and cultures.

The goal and main theme of the workshop

Through the workshop, we aimed to propose to focus on socio-political, structural, and cultural conditions of consumption, by analysing constraints, contradictions, and alternative perspectives. The goal of the workshop was to explore how we can better apprehend existing changes towards more sustainable forms of consumption, at a meso- and macro- level, as well as how such efforts could be replicated across different spaces of consumption. How can sustainable consumption become an attractive, equitable and empowering 'new normal' that involves a good life for all as well as living within ecological limits?

The contributions of the various authors, the reflections of the discussants as well as the careful documentation of the discussion may inspire you in your own work on the issue.

The organising team

Klára Hajdú, Sylvia Lorek, Barbara Muraca, Marlyne Sahakian, Edina Vadovics, Philip Vergragt,

Welcome note from the Host

Future generations and just consumption in a constrained world

Marcel Szabó

Ombudsman for Future Generations, Office of the Commissioner for Fundamental Rights, Hungary

Protection of the interests of future generations in Hungary

In 2007 a bill was adopted that established the Parliamentary Commissioner for Future Generations in Hungary. Due to amendments to the Ombudsman Act in 2011, the independent Ombudsman Offices and the General Ombudsman's Office were merged into one, creating the Office of the Commissioner for Fundamental Rights. The Ombudsman for Future Generations, functioning as one of the Commissioner's deputies, is responsible for the protection of the right to a healthy environment, the right to the preservation of physical and mental health, and for the protection of the values enshrined in Article P of the Fundamental Law.

> Pursuant to Article P, *"Natural resources, in particular arable land, forests and the reserves of water, biodiversity, in particular native plant and animal species, as well as cultural assets shall form the common heritage of the nation; it shall be the obligation of the State and everyone to protect and maintain them, and to preserve them for future generations."*

The Office's practice promotes the interests of future generations. Through the handling of petitions, the Ombudsman institution is capable of drawing broader conclusions from individual complaints regarding the state of the environment and human rights violations pointing to the discrepancies in environmental policymaking. This is a good model for identifying the most urgent environmental problems in relation to human rights, and is also capable of ensuring a more general and proactive action of the institution that is important for the society as a whole.

The Hungarian Ombudsman for Future Generations takes part in numerous national conferences delivering speeches that have a significant awareness raising result (e.g. pointing out the negative consequences of postponing the rehabilitation of contaminated sites) and the Office also organizes conferences highlighting the need to comply with international obligations (e.g. right to water and sanitation). We also often perform quasi mediational roles, where we aim to reach some kind of compromise between two parties of opposing opinions (e.g. settlement development) or urge and inspire the formation of good practice (e.g. protection of trees). The Ombudsman for Future Generations has

regular reviews with the Hungarian High Court building upon case law of the European Court to help further clarify and unify law enforcement in Hungary (e.g. waste related cases). The Ombudsman for Future Generations prepares guidance notes for policy makers in order to ensure adequate representation of future generations (e.g. in the fields of handling nature conservation sites or protection of ground and groundwater).

International network of institutions promoting the interests of future generations worldwide

Facing more and more symptoms of a looming global environmental crisis, the importance of future generations gained special attention on the international arena as well. In 2013, the UN Secretary General issued a report entitled "Intergenerational solidarity and the needs of future generations", in which he named eight national institutions and bodies that play a pioneering role in the national implementation of sustainable development and intergenerational solidarity. One of them was the Hungarian Ombudsman for Future Generations. Inspired by this report, recognizing the significance of these institutions and in an effort to promote cooperation, I decided to convey a conference in 2014 in Budapest to bring together national institutions mentioned in the Report to develop a common platform for these institutions. The representatives of these national institutions, together with other establishments from around the world, who undertake similar roles or are interested in creating institutional means for the protection of future generations in their own countries, decided to form a network. One year after the successful conference in Budapest, the institutions held another meeting in Cardiff in April 2015, where they laid down a number of key areas of future cooperation. For the effective communication between the members of the network, the Hungarian Ombudsman for Future Generations created an online platform[1] to provide a surface for sharing of knowledge and experience of institutional solutions aiming at safeguarding the interests of future generations. The third meeting of the members of the network was held in Helsinki in June 2016, where I was honoured to be elected as chairman. The cooperation has a three-fold aim: to share institutional best practices among its members for the development of effective means and practices, to provide innovative ideas for other establishments working on various levels worldwide, and to channel outside perspectives, successes and lessons learned into the work of already existing bodies. Besides strengthening their existing cooperation, members of the network also strive to increase the number of national and regional institutions joining the network who share the same purpose of contributing to long-term future shaping. Therefore, we approach newly established institutions and encourage any potential initiative around the globe that we could help blossom into a fully grown future generations protection institute. The network aims at developing and disseminating institutional solutions, monitoring developments, commissioning studies, research and analysis and working with the United Nations and its Member States to develop a framework of action to safeguard the interests of future generations.

Degrowth and the interests of future generations

How can we define the link between future generations' need and the idea of degrowth? Our current economic system requires persistent consumption, which is supported by the claim of growth produced by capitalism. According to the criticism of the degrowth supporters, we have to raise the question: where is the limit of this growth? The concept of the forever and ever lasting sustainable development is obviously false, as the never

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[1] futureroundtable.org

ending development is limited by our resources. The principles of the degrowth supporters of creating a system taking into account the needs of the Earth, where the measures of the growth is not based on the GDP, squares with the interests of the future generations. The main idea of the degrowth movement urges present generations to acknowledge the temporary nature of their command over the Earth's natural resources, which should, thus, also respect the interests of generations to come. This is the underlying consideration of the concept of intergenerational equity. Pursuant to this concept, the Earth shall be protected not only for satisfying the needs of the present generations, but also to secure the most essential needs of future generations.

In 1972, Donella H. Meadows, Dennis L. Meadows, Jørgen Randers and William W. Behrens III published one of the most influential books of this era, the Limits to Growth. The purpose of the volume was to explore how exponential growth interacts with finite resources. According to the authors, we are drawing on the world's resources faster than they can be restored, and we are releasing wastes and pollutants faster than the Earth can absorb them or render them harmless. The authors alarmed the world by the dangerous consequences of unbridled economic growth and unsustainable consumption.

In 2003 Dirzo and Raven provided a prognosis for the processes and events related to biodiversity expected for the end of the 21st century. It is particularly noteworthy, that the authors established that only 7.9 million square metres of our planet's natural environment enjoys legal protection, amounting to a mere 5.3% of the surface of the Earth. They estimate that by the end of this century two-thirds of the current biodiversity will disappear.[2] Between 1965 and 2010 the area of protected inland reserves has become six times larger and the protected marine areas have become four times larger. However, biodiversity has decreased by 20% in the seas and 40% on land.[3] The loss of biodiversity threatens the long-term survival of human life. By the decrease of diversity the ecological systems are becoming vulnerable, thus, the preservation of ecosystem services will be at serious risk. A transition to sustainability will require an active decision to reduce the human ecological footprint. A sustainable society would be interested in qualitative development using material growth as a considered tool. Such society would also ask what the growth is for, who would benefit therefrom, what it would cost and how long it would last.

Another milestone in sustainability science was the Planetary Boundaries research. The group of 28 internationally renowned scientists led by Johan Rockström from the Stockholm Resilience Centre and Will Steffen from the Australian National University published their full findings in a 2009 report and presented it to the General Assembly of the Club of Rome in Amsterdam. The research group proposed a framework of "planetary boundaries" designed to define a "safe operating space for humanity". Within the set of planetary boundaries, that are intrinsic to the operation of Earth as a system, humanity can continue to develop and thrive for future generations. The framework is based on scientific research which indicates that since the Industrial Revolution, human actions have gradually become the main driver of global environmental change. The scientists estimated how much further we can go before our own survival is threatened. They assert that once human activity has passed certain thresholds, defined as planetary boundaries, there is a risk of "irreversible and abrupt environmental change". The group identified nine "planetary life support systems" essential for human survival.

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[2] Rodolfo Dirzo and Peter H. Raven: Global State of Biodiversity and Loss. Annual Review of Environment and Resources, 2003/28, pp. 137-167.

[3] Camilo Mora and Peter Sale: Ongoing global biodiversity loss and the need to move beyond protected areas: a review of the technical and practical shortcomings of protected areas on land and sea. *Marine Ecology Progress Series* (2011) 434, pp. 251-255.

The updated planetary boundaries research[4] was published in 2015 stating that four planetary boundaries, namely climate change, loss of biosphere integrity, land-system change, altered biogeochemical cycles have been crossed and that human activity was the reason for crossing these boundaries. Two of these boundaries, namely climate change and biosphere integrity, are identified as "core boundaries". Significant alterations of either of these "core boundaries" would "drive the Earth System into a new state".[5]

The moral-theological aspect of degrowth is manifested in the Laudato Si' encyclical[6] of Pope Francesco. According to the Laudato Si', the Earth is essentially a shared inheritance, whose fruits are meant to benefit everyone[7] and the natural environment is a collective good, the patrimony of all humanity and the responsibility of everyone.[8] An essential ascertainment of Pope Francesco's encyclical is that the notion of the common good also extends to future generations. The global economic crises have made painfully obvious the detrimental effects of disregarding our common destiny, which cannot exclude those who come after us.[9] With regard to the connection of the everyday consumption and the interests of the future generations, it is worth highlighting the encyclical's finding that „as long as the clearing of a forest increases production, no one calculates the losses entailed in the desertification of the land, the harm done to biodiversity or the increased pollution. In a word, businesses profit by calculating and paying only a fraction of the costs involved."[10] The encyclical formulates recommendations for the solution as well. It points out that our immense technological development has not been accompanied by a development in human responsibility, values and conscience[11] and we cannot presume to heal our relationship with nature and the environment without healing all fundamental human relationships.[12] The current world economic order and the growth constraint makes the realisation of the necessary changes extremely difficult. Pope Francesco defines the philosophical strategy of degrowth: „Even living on little, they can live a lot, above all when they cultivate other pleasures and find satisfaction in fraternal encounters, in service, in developing their gifts, in music and art, in contact with nature, in prayer."[13] Our most important task is to recognise that a more modest life does not necessarily mean a worse life. On the contrary, this kind of change of perspective could be the key element in overcoming the crisis.

One of the conclusions of the Terra Mater international conference organized in 1982 in Gubbio was that we have to reinterpret the current definitions on growth, so they could contribute to the improvement of the quality of life. This assumes the respect of life, the appreciation of individuals, cultures and communities, the easing of the social tensions, the eradication of hunger and the stopping of overpopulation.

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[4] *Science,* VOL 347, ISSUE 6219 (16 January 2015).

[5] http://www.stockholmresilience.org/research/research-news/2015-01-15-planetary-boundaries---an-update.html

[6] Encyclical Letter Laudato Si' of the Holy Father Francis on care for our common home. http://w2.vatican.va/content/francesco/en/encyclicals/documents/papa-francesco_20150524_enciclica-laudato-si.html

[7] Encyclical Laudato Si', p. 93.

[8] Ibid, p. 95.

[9] Ibid, p. 159.

[10] Ibid, p. 195.

[11] Ibid, p. 105.

[12] Ibid, p. 119.

[13] Ibid, p. 223.

The UNESCO Declaration on the Responsibilities of the Present Generations Towards Future Generations[14] underlines that present generations should bear in mind the needs and interests of future generations. The finding in Article 4 of the Declaration is worth highlighting: „The present generations have the responsibility to bequeath to future generations an Earth which will not one day be irreversibly damaged by human activity. Each generation inheriting the Earth temporarily should take care to use natural resources reasonably and ensure that life is not prejudiced by harmful modifications of the ecosystems and that scientific and technological progress in all fields does not harm life on Earth."

The aim of degrowth is to help to reconsider the limits of our lives by providing new perspectives on the processes influencing our future and changing the money-oriented way of thinking to a human and community oriented one. The mission of the movement is to present that responsibility for nature, commitment to ensure decent living conditions for future generations and the essential moderation and frugality to this does not necessarily results in the decay of the quality of our life, moreover, it rather enriches it.

Generally speaking, I assess that the protection of the interests of the future generations and the goals and principles set by degrowth are pretty much overlapped: our aim is to guarantee a future for the next generations where their fundamental rights will be ensured. Based on this idea we created the "Fatestvér Program" (Seedling Siblings Program). The objective of the initiation is to plant a tree after the birth of every child in Hungary, which supports the protection of the interest of present and future generations. The goals of the program are to create green corridors by planting trees in urban areas; to stress the importance of the long-term thinking and environmental education. In addition, we aim to develop an emotional attachment of the children and their families to their trees; to reduce the risks of climate change, and promote the importance of the healthy environment and compensate the effects of the economical footprint.

Conclusions

The concept of sustainability does not fit into the dominant paradigm that exists today, which is focused on economic growth and the global market of cheap products. This is the reason that certain institutions were founded, that are confronting the lawmakers with the outgrowths of their decisions. In Hungary the independent Ombudsman and an advising council of the Parliament (the National Council for Sustainable Development) operating in close cooperation was also created for this reason. As the Ombudsman for Future Generations, my main tasks are to contribute to a change in public opinion through awareness raising and to point out system anomalies.

The link between degrowth and the interests of the future generations is very important in preserving a healthy environment for the future. We need to be aware of the future changes and upcoming tendencies in order to arrive at the best decisions that could be made to fulfil our mission. Degrowth means that we give up the subjugation of nature and try to find our place in the world with responsibility, recognising that we have only one planet and we cannot consume the goods needed for the wellbeing of the future generations.

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[14] *General Conference of the United Nations Educational, Scientific and Cultural Organization, Paris, France, 12 November 1997, http://portal.unesco.org/en/ev.php-URL_ID=13178&URL_DO=DO_TOPIC&URL_ SECTION=201.html*

Discussion following the welcome note

notes from various participants

The inspiring speech by Marcel Szabó initiated a lively discussion among the workshop participants. As no note taker was explicit designated to this task the notes here are collected from various participants.

Question: How different is the talk that you've given us today compared to a talk that you would give to more mainstream audiences and to government and business people? In other words, do you feel a need to change your message when speaking to certain audiences who aren't open to hearing ideas such as degrowth?

Answer: I try not to change my message. We must as academics have the courage to say the emperor has no clothes and to confront misinformation. Degrowth is the world's most important movement.

He recalled the recent report of the UN Secretary-General, which also looks at how intergenerational solidarity and future generations have been taken into consideration in policy-making at the national level in a variety of institutions (https://sustainabledevelopment.un.org/content/documents/2006future.pdf), and gave three examples, which can set an example for other countries. In New Zealand the office of the Parliamentary Commissioner for the Environment collects information about the environment and inquires into specific environmental issues on the requests of the Members of the Parliament. In Finland the Committee for the Future deliberates with the Parliament upon request. In Canada the Commissioner of the Environment and Sustainable Development within the Office of the Auditor General looks at the annual state budget from the point of view of future generations.

He also noted that in Hungary they have a good working relationship with the Hungarian Academy of Sciences, which increases the credibility of their work. In that sense his office has a role of translating scientific language into law. He also mentioned their ongoing cooperation with the HAS on a soil report.

Sustainable Consumption and Social Justice in a Constrained World

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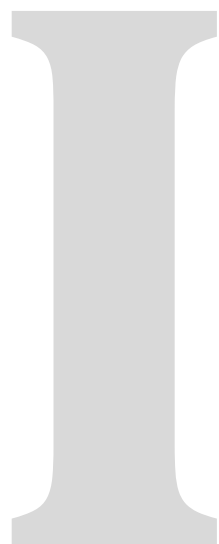
**Defining the limits
in relation to wellbeing and
planetary boundaries**

Consumption corridors: integrating the good life and justice in sustainable development

Doris Fuchs* and Antonietta Di Giulio**

*University of Münster, **University of Basel

Introduction

This paper discusses and further develops the concept of (sustainable) consumption corridors. It starts from the assumption that sustainable development is an inherently ethical concept oriented by the goal of allowing human beings now and in the future to live a good life, implying certain rights, but also certain duties for both individuals and states. Individuals are entitled to have access to the necessary resources allowing them to satisfy their objective needs and thus have the opportunity to live a good life. States and the international community have the duty to guarantee that individuals have access to the necessary resources and to ensure such access for future generations. Individuals have the duty to (at least) not harm others with regard to their access to sufficient resources and therefore their possibilities to live a good life. Against this background, we suggest to discuss, define, and implement "(sustainable) consumption corridors" to chart out a space of consumption limited by consumption minima and maxima. We argue that the existence of environmental and social limits necessarily implies that reckless consumption of resources is fundamentally unethical and unjust. It is unethical, because no one has the right to compromise the possibility of other human beings to live a good life with his or her consumption choices. It is unjust, because limits to what safely can be consumed mean that overconsumption by some implies under-consumption by others. We argue that we need to define minimum consumption standards ensuring an individual's ability to live a good life now and in the future as well as maximum consumption standards preventing individuals from consuming to an extent that they endanger the reaching of minimum consumption standards by others. In turn, the space defined by (sustainable) consumption corridors is a space where human beings can freely define how they want to live their lives and choose what and how to consume according to their individual preferences. Against this background, (sustainable) consumption corridors provide a means to engage the relationship between consumption, sustainability, justice and individual freedom.

The paper proceeds as follows. We start by briefly delineating how ideas of the good life and justice lead to the development of the concept of (sustainable) consumption corridors and how this concept has been developed. We then discuss the implications of the argument for an appropriate role of the state. Next, we point out similarities with and differences to other related concepts in the literature. The conclusion then summarizes our argument and discusses relevant societal and political challenges.

The background of (sustainable) consumption corridors

The history of the idea

Our argument builds on the results of a six year (2008-2014) inter- and transdisciplinary research programme "From Knowledge to Action – New Paths towards Sustainable Consumption", for which the German Federal Ministry of Education and Research (BMBF)

as part of its Socio-Ecological Research Program (SOEF) funded 10 research groups (with a total of 100 researchers from more than 15 different disciplines and 80 partners from practice), as well as an accompanying research project, which was given the task to facilitate integration and help develop overarching results (for detailed information on the research programme see Defila et al., 2012).

The development of integrated results was informed by four questions that also have been collaboratively developed. These four questions are: What exactly is consumption, i.e. how should individual consumption be conceived? How do consumption and sustainability relate to each other? How can the sustainability of consumption be assessed? How can individual consumption be influenced? The answers gained to these questions were primarily directed at a scholarly audience (see e.g. Defila et al., 2012; Di Giulio et al. 2014; Defila et al. 2014; for those answers building the conceptual background of the idea of consumption corridors see below). Proceeding from there, a group of 16 scholars belonging to the research programme engaged in a process of developing results specifically addressing the societal actors shaping the social and political discourse on sustainable consumption in Germany. This process led to eight messages and recommendations for the implementation of sustainable consumption in practice, the so-called "consumption messages" (Blättel-Mink et al. 2013) – the idea of "consumption corridors" being one of them. The eight messages have not been developed solely by scholars. Rather, in order to validate and refine them, they have been subjected to a broad transdisciplinary discussion in 2012 involving about 70 representatives of government, education, business, science, organizations and foundations. The collaboration with this group of scholars has continued beyond the publication of the "consumption messages," and we continue to be grateful for the inspiring and on-going discussions with our colleagues.

The conceptual background of the idea

The integrated results gained in the course of the abovementioned intensive inter- and transdisciplinary process are the conceptual background of the idea to define (sustainable) consumption corridors. We want to briefly summarize the most important ones:

By definition and ever since the WCED-report (WCED 1987), the goal of sustainable development is to allow all humans to live a good life, now and in the future. Thus, the notion of a good life lies at the heart of the idea of sustainability and should inform concepts and actions devoted to sustainable development. Accordingly, the synthesis reached in the above mentioned research programme defined sustainable consumption as consumer actions that are intended to secure the external conditions to satisfy the objective needs of people today and in the future and that actually have demonstrable impacts (see Fischer et al. 2012 for a broader coverage of the argument and its implications and specially for a discussion of the adopted approach integrating an impact-oriented and an intent-oriented approach). What exactly do the notions of 'external conditions' and of 'objective needs' mean and to what kind of approaches to a good life do they relate?

Acts of consumption are not an end in themselves, but a means to the end of satisfying one's needs. According to the idea of sustainability, the development of society must be oriented towards the satisfaction of the objective needs of all human beings, now and in the future. Thus, the concept of need is central to both consumption and sustainability. It goes without saying that humanity would run into severe trouble if each and every want of all humans were to be satisfied, as the 'realm of nature' would collapse. Hence, a conceptual differentiation of legitimate and non-legitimate (in the sense of an obligation to humanity to satisfy these wants) wants is required. The debate within the research programme on how to find a suitable concept of need allowing for a distinction of

legitimate and non-legitimate wants resulted in the exploration of the concept of a good life, especially of anthropological approaches as promoted, for example, by Nussbaum (1992; capability approach), by Max-Neef (1991; needs based approach) or by Costanza et al. (2007; integrating a capability approach and a needs based approach). The proponents of such approaches argue that humans have universal characteristics that are, on an abstract level, independent of subjectively felt desires and historical and cultural contexts (e. g., to engage socially, to enjoy bodily integrity, to be secure). They further claim an ethical obligation to provide all human beings with the external possibilities of realising such universals, regardless of whether people make use of them or not. Thus, the goal of sustainability can be specified as providing all humans, now and in the future, with the external (social, cultural, economic, environmental, etc.) conditions that are necessary to live a good life (to better link with the on-going debate in sustainability sciences, external conditions can be renamed as being satisfiers made available through natural and social resources). Legitimate wants in turn are needs clearly originating in such universals. Legitimate wants can be called 'objective needs' because of the claim that they are universal human needs. As such they are ends in themselves and cannot be ethically questioned. All humans now and in the future have a right to be provided with the possibilities to satisfy these needs. To be able to live a good life means that an individual has the possibility of satisfying those objective needs he or she develops according to his or her preferences, culture and physical as well as emotional and cognitive features and thus to live a life he or she values.

This line of argument has been further elaborated and resulted in a conceptual system with regard to sustainability and consumption. The system is shown in figure 1 (for explanation of the whole system, the arguments in detail and the body of literature relied on see Di Giulio et al. 2012).
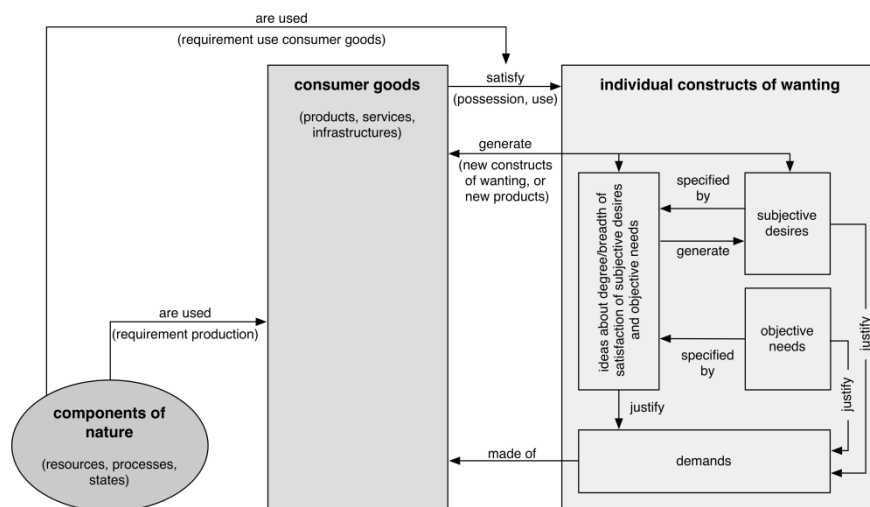
Figure 1: The conceptual system (from Di Giulio et al. 2012, p. 55). To be read as follows: Components of nature are used as a result of requirements of production as well as by the use of consumer goods. Consumer goods are for one thing satisfiers with regard to constructs of wanting and the generate new ideas about the degree and breadth of satisfaction of needs and desires as well as new subjective desires for another things. They have no influence, however, on the existence of objective needs. The ideas about the degree and breadth of satisfaction are specified by desires and needs, and they can in turn generate new desires (but not new needs). They can lead to the production of new consumer goods, and the same goes for subjective desires. Demands are made of consumer goods on the ground of needs, desires and the ideas about the degree and breadth of their satisfaction.

Consequently, the notion of sustainability explicitly asks to provide human beings now and in the future with a basic level of satisfiers drawn from natural and/or social

resources. Sustainable consumption, in turn, has to support others' endowment with satisfiers and corresponding resources – at least, it should not compromise it.

Clearly, this is not arguing that the ability to live a good life is a function of material consumption alone, or that material consumption even has to play as dominant a role in the pursuit of a good life, as it appears to do in today's consumer societies. Satisfiers and resources necessary to meet objective human needs have to be defined much more broadly than in terms of material goods. However, some of these needs, such as food, shelter, and even the development of one's personality, require the provision of some material resources. Unfortunately, many resources are limited both in terms of quantity and quality. Some of them are finite as they are not renewable (at least not in the sense of human time horizons). (Slow) rates of renewability or the scarcity of accompanying resources that are needed to provide them limit others. Governmental funding (=resource) for a functioning health care system (=satisfier) is not available for other purposes, for instance. Both quantitative and qualitative scarcity become particularly relevant, in turn, when we consider issues of justice. After all, limits imply that consumption of satisfiers/resources by an individual or group of individuals can hurt (now or in the future) other individuals' access to the same satisfiers/resources.

The idea of (sustainable) consumption corridors is informed by this kind of reasoning and it is a suggestion of how it could be put into action.

(Sustainable) Consumption Corridors

The concept of (sustainable) consumption corridors ((S)CC) suggests, as mentioned above, a strategy to integrate ideas about the good life and justice and the concept and pursuit of sustainable development. Such corridors would be defined by minimum standards, allowing every individual to live a good life, and maximum standards for every individual's use of resources guaranteeing access to sufficient resources (in terms of quantity and quality) for others, both in the present and the future (see figure 2).
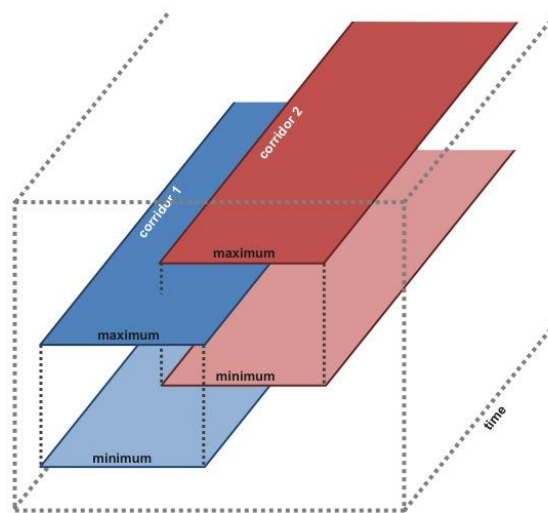
Figure 2 (from Di Giulio, Fuchs 2014, p. 187): Corridors of sustainable consumption are defined by minimal and maximal standards of consumption. Their number and the degree of overlap depends on how many points of reference (fields of consumption, environmental and social impact categories, etc.) will prove to be reasonable and on how much these will be disjoint. The corridors will have to be readjusted periodically.

Ensuring that all humans have the possibility to live a good life is quite a complex task. Attempts to accomplish it have to acknowledge, on one hand, that notions of what a good

life consists of in detail differ not only across time and culture, but also between different members of the same society living in the same period of time. Individuals differ in terms not only of preferences but also in terms of their physical, cognitive and emotional potential. Thus, to lead a good life means different things to different individuals. On the other hand, attempts to accomplish this task must necessarily proceed from a notion of what a good life consists of. This notion has to be based on the assumption that there are some essential needs of humans, which they need to have the possibility to realize to lead a meaningful and fulfilled life, while at the same time allowing for diversity and individuality and avoiding standardization.

As envisioned here, sustainable consumption corridors will allow the pursuit of a good life for all, now and in the future, as well as intra- and intergenerational justice as they are defined by minimum consumption standards, providing the basis for living a good life to an individual, and maximum consumption standards, ensuring that one individual's consumption does not hurt other individuals' abilities to achieve minimum consumption standards in a world of limited resources, be they natural or societal. Such corridors of consumption leave room for the realization of individual life plans and choices, and they are a way to ensure that all individuals are able to live a fulfilling life according to their own preferences. Thus, one of the basic assumptions the idea of consumption corridors builds upon is that it is neither possible nor desirable to prescribe specific 'sustainable' patterns of consumption and ways of living, but that we need criteria that leave room for individual life plans. Consumption corridors do not question the existence of needs, they question how needs are satisfied, and they question subjective desires. They do not question individual freedom either but define limits of individual freedom by taking justice into the equation.

Justice

As pointed out above, sustainable consumption corridors are located at the interface between ideas of "the good life" and "justice". In this context, it is important to be extremely clear what we mean when we refer to justice. After all, different concepts of justice exist, sometimes in conflict or at least competition with one another.

On a rather basic level, in referring to justice in the context of sustainable consumption, we relate to approaches of social ethics and not to approaches of environmental ethics. Hence, our concern, here, is not how the actions of human beings impact nature, but how they impact other human beings. According to this line of reasoning, nature (living creatures, the abiotic environment, ecosystems, resources etc.) is of instrumental value. This perspective may be subject to criticism, of course. For our present argument, however, such an anthropocentric approach to the idea of sustainability is suitable.

Because of the way we link (objective) needs and sustainable consumption, the notion of justice entailed in the idea of consumption corridors is one rooted in natural law: Every human being deserves access to the minimum level of natural and social resources necessary to be able to live a good life simply because he or she is a human being. This necessarily directs our focus to a keen recognition of those human beings being actually or potentially disadvantaged and thus in need of protection.

Building on Aristotle, we consider justice not as a personal trait of character, but as a quality of relationships between individuals. Specifically, we see justice then as a fundamental condition of and basic norm for structuring how humans live together in societies, in which an adequate and balanced redistribution of resources and opportunities between individuals is required. This is a presupposition, which a rationality-based approach to justice (rather than a natural law-based one) would concur with, by the way. Hume, for instance, suggested that egotism will prevail and injustice increase in contexts of scarcity, against which the pursuit of justice can ensure the continued ability of societies

to experience stability and order. As we will further clarify below (and in accordance also with John Stewart Mill and Immanuel Kant, for instance), this notion of justice as a norm entails a 'should', i.e. a definition of (claimable) rights and of (according) responsibility and duties.

Concerns with justice as a societal norm have existed throughout history, in all cultures and religions, even though they have taken and may take a wide variety of forms or ascribe sources of justice in a wide variety of ways (e.g. god given versus based on societal institutions). Concerns with social justice became prominent during the industrial revolution and the impoverishment of large segments of societies in the industrializing countries and regions. Ecological justice, in turn, appeared on the scene in the context of an increasing awareness of limits to growth and the distribution of environmental harm, just as the Brundtland report extended traditional notions of justice in terms of space and time (Heimbach-Steins 2011). Today, a large variety of justice norms exist in societies and these norms frequently compete with each other, for instance, when it comes to political decisions. In our approach we follow scholars such as Sen (1996) and Nussbaum (1992) in delineating a needs-based approach to redistributive justice, in which we postulate the necessity and the ability of societies to jointly define minimum consumption standards ensuring an individual's ability to live a good life. This notion of justice as an individual right to a certain minimum quality and quantity of resources implies duties for others not to consume resources to such an extent that they violate the individual's right to this minimum level of resources. The criteria for determining this kind of justice, in turn, would be equality of human beings with regard to (objective) needs for one thing and resources in relation to these (objective) needs for another.

Justice in a good life context has to take into account the necessary individual freedom when it comes to defining a good life on the individual level. This includes the fact that people live in different living environments and thus need different amounts of resources to satisfy one and the same need (the most simple example is the amount of resources needed to heat and/or cool flats). Importantly, then, our notion of justice does not imply that we think that everybody should consume exactly the same quantity and quality of resources. The notion of justice going along with consumption corridors is not one aiming at some kind of normalization, in terms of according the exactly same endowment with satisfiers and/or resources to everybody. Rather, it is a notion of justice based on the assumption that individuals should have as much freedom of choice as possible – as long as their consumption does not constrain other's chances to live a good life. Indeed, the core characteristic of the space between the maximum and minimum consumption standards, i.e. between the ceiling and the floor of the consumption corridor, is that it offers freedom of choice. This freedom, in turn, can be used to choose consumption in a manner as to pursue one's personal ideas of a good life. As these ideas vary between cultures, historical contexts, etc., the choices individuals make in the corridor are likely to vary strongly as well. An approach that equates justice with allotting everybody the exact same amount of each single resource would not be appropriate, therefore. What we need is a notion of distributive justice allowing for differences, albeit differences the specifics of which we do not really know yet.

Given that we live in a world where resources are ex- and interchanged on a global scale and given the fact that our actions and omissions might have not only far-reaching but also long-reaching effects, a restricted view in terms of space and time would not be appropriate. Thus, we are talking about distributive justice encompassing social as well as natural resources for one thing and having to take into account big scales in terms of space and time.

Moreover, our understanding of sustainable consumption corridors from a perspective of justice also entails a concern about procedural, participatory, and cultural justice. Given that individuals' ideas of a good life are diverse and given that we cannot really conclude

(objective) needs from any scholarly knowledge, decisions about adequate minimum and maximum consumption standards will need to result from processes of societal deliberation. In those, we will need to ensure that all parts of the population can participate in an equal manner. To that end, such deliberative processes need to be transparent, include individuals from all walks of life in a fair manner, and be unconstrained by power asymmetries.

Sustainable consumption corridors, in our view then, are a strategy to pursue intra- and intergenerational, social and environmental distributive justice. They form such a strategy in particular because the maximum consumption standard forming the ceiling of the corridor does not come out of nowhere. Instead, the maximum consumption standard is defined via the minimum consumption standard, i.e. the basis for allowing every individual to live a good life, now and in the future. The development and implementation of these standards in turn will need to pay attention to aspects of procedural, participatory and cultural justice, as well.

Finally, sustainable consumption corridors inevitably link justice to questions of responsibility not only of individuals, but also of the community. And this is where the notion of the state comes into the picture.

(Sustainable) Consumption Corridors and the State

Two rather different perceptions of what states are in terms of institutions are of importance in discussing (S)CCs: What we address as 'state' can either be understood as a counterpart to 'civil society', that is to the inhabitants of the territory perceived as a sovereign political unit. In this case, it is quite natural that people want to keep institutions belonging to the actor 'state' out of their private lives as much as possible and use narratives expressing the division between them and 'the state' – freedom is freedom from "the state".

Alternatively, we can conceptualize the state as part of how the inhabitants of the territory perceived as a sovereign political unit organize their interaction and coexistence (e.g. social contract, see (Hobbes 2012[1651/1668], Rousseau 1997 [1762]). In this case, it is quite natural that people want 'the state' to take on responsibility for the common good – freedom is freedom from too much interference by others. In this sense, the state is legitimized by its role in the protection of the individual/society as well as by its ability to help individuals to jointly pursue an objective they would not be able to reach individually. Indeed, to the extent that the development of citizens and property ownership foster societal competition and conflict, as delineated by Rousseau, the state is necessary for preventing resulting injustice.

From this latter perspective, state action clearly is relevant and legitimized when it comes to (sustainable) consumption corridors. After all, the pursuit of the satisfaction of all subjective desires of consumers today is threatening the survival of humanity and implying severe constraints on the current ability of other members of humankind to live a good life. At least two problems exist, however.

The first problem is that a sense of entitlement exists in today's Western societies, combined with a higher valuation of private rights relative to public duties. This problem is of a factual rather than conceptual nature, however. Our very starting point in terms of the wish to allow all individuals to live a good life in a world of scarce resources means that we cannot but denounce any unlimited sense of entitlement. We need to remind people of the impact of their consumption choices on others and their duties as members of humanity. The human being is a social being, and living within societies is associated with rights and responsibilities, as well as the acceptance of certain limits on individual freedoms.

The second problem is that states rule over delimited territories and the respective current demos, while the notion of justice underlying (sustainable) consumption corridors has a global and intergenerational dimension (and by intergenerational we do not mean todays' children, but the human beings living entirely in the future). This problem is also a factual rather than a conceptual one, but clearly a daunting task. States do cooperate in attempts to solve global problems and have done so for centuries, albeit with, at best, very mixed results. Likewise, conceptual developments regarding the representation of future generations in political deliberations exist, but lack serious efforts at implementation.

Returning to the first perspective on the role of the state laid out above, it is also important to note that, clearly, there are limits to what we would want states to do. Excessive intervention leaving little room for individual freedom and life choices cannot be the goal. Moreover, one would not want a surveillance state with detailed and comprehensive systems of control. We do not cherish ideas of a dictatorial, but of a democratic and constitutional state protecting the individual as well as the community. In consequence, we will need criteria for consumption that are not too specific a prescription for individual consumption choices, but suitable to pursue the overall goal of ensuring everybody's ability to live a good life.

Standards, thus, need to be defined on the basis of societal deliberation. They will not be the same for all societies and for all times, but both be culturally influenced (albeit not completely relativistic) and likely dynamic over time, as they also will depend on the availability of the natural or social resources in question. The question, then, is not one of simply advocating to consume less, especially not in terms of renunciation or an ascetic lifestyle. Rather the task for societies is to first jointly define the conditions necessary to live a good life and secondly to derive minimum and maximum consumption standards on that basis. Moreover, since societal and ecological development may well imply the need for the standards to change over time, as pointed out above, such a process would have to be dynamic and reflexive, allowing for necessary adjustments. This leads to two quite specific tasks of the state with regard to (sustainable) consumption corridors: The state should organize the societal deliberation needed to define minima and maxima of consumption, ensuring procedural justice in doing so. And, after the development of such standards, we expect that we will need to rely on the state to adopt, implement and enforce them.

Related Ideas and Concepts

Other writers, scholars and commentators have suggested similar or related ideas and concepts, and we are highly appreciative of and inspired by their work. Kate Raworth's (2012) concept of "doughnut economics" aims to identify a safe and just space for humanity by relating planetary boundaries to social justice. The concept of "environmental space" (Hille 1997, Opschoor 1987, Spangenberg 2002) pursues a similar aim, focusing mainly on natural resources. Likewise, the concept of a "safe and just operating space" (Dearing et al. 2014, Rockström et al. 2009) addresses the link between planetary limits and justice. Finally, the concepts of "strong sustainable consumption" (Fuchs and Lorek 2005) and "absolute reductions" (see JCP special issue 2015, eds. Akenji et al.) relate to the idea that acknowledging planetary boundaries means addressing consumption levels and imposing limits on consumption rather than merely tinkering with improvements in the resource efficiency of consumption

(Sustainable) consumption corridors clearly have a lot in common with these concepts in that one joint core concern is to link questions of social justice and the sustainable use of natural resources. The main difference is that the (sustainable) consumption corridors concept squarely focuses on consumption. It moves the role that consumption plays in enabling individuals to live a good life and, at least, as importantly, in overstepping

ecological and social limits to the centre of attention. This decision does not mean that consumption corridors look only at what happens at the level of the consumer. Adopting the "consuming lens", (sustainable) consumption corridors regard everything that happens along the production chain as driven by consumption and/or targeted to consumption. Another difference is that the notion of consumption corridors provides a framework for looking at and defining different corridors (e.g. for specific resources or satisfiers such as services) and potential transits between them (doors). Smaller differences between (sustainable) consumption corridors and one or another of the other related concepts mentioned above exist, finally, in that the consumption corridors concept explicitly and intentionally considers not only natural but also social resources in defining consumption minima and maxima, and in that it ties such corridors to (objective) needs and thus to a good life.

Conclusions

In this paper, we have presented (sustainable) consumption corridors as a conceptual framework linking ideas of the good life, justice, and sustainable development. Importantly, in this approach, we consider them as an instrument to protect both planetary boundaries and freedom. We started from the assumption that every individual, now and in the future, should be able to live a good life and have access to the necessary minimum quantity and quality of social and natural resources to that end. Given that we live in a world of limited natural and social resources, we further argued that consumption choices and levels by some that hurt others' ability to meet these minimum consumption standards are unjust. Harming others' opportunities to live a good life is inherently unethical. Thus, it is our human duty to consume natural and social resources only in that quality and quantity that others' access to a sufficient quality and quantity remains possible.

Accordingly, we arrive at minimum and maximum levels of consumption defined by what an individual needs to satisfy (objective) needs and thus live a good life and what would hurt other individuals in pursuit of the same aim. We call the space between this floor and ceiling a (sustainable) consumption corridor. Sustainable consumption respects and takes place between these minima and maxima. This does not mean that (sustainable) consumption corridors allocate all responsibility for (un)sustainability only with the consumer. Quite differently, we see many constraints for "consumer sovereignty" in today's world resulting from structural contexts shaped by inequalities in power and information among others. Thus, it is important to differentiate between the responsibility of the individual consumer and consumption as a cultural characteristic and politico-economic dynamic. As such, consumption extends way beyond the consumer.

To our experience, the idea of defining (sustainable) consumption corridors fascinates and repels people at the same time. We take this as a sign that we should further develop the concept and proceed to provide the technical knowledge needed to implement it. On a technical level, we currently identify two main challenges: One challenge is to define (objective) needs (this is what one of the authors is investigating in a current research project). The other challenge is to relate needs, actions of consumption and resources. On a practical level, the main challenge is that huge asymmetries in power exist in the political system today (Fuchs 2013) and that those with a lot of power will likely have little interest in defining sustainable consumption corridors (Fuchs et al. 2015). To be clear then, we do not suggest that the development and implementation of (sustainable) consumption corridors will be easy. Yet, we consider them relevant and necessary! Given our discussion on the contextual nature of objective needs and corresponding satisfiers as well as the complexities of global governance, such efforts will have to start in individual states (if not subnational units) rather than wait for the global effort.

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Sufficiency, degrowth and sustainable consumption

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Introduction

The purpose of this paper is to support strategy discussions on strong or substantially sustainable consumption by first distinguishing the different motives for consumption which require different strategies to be turned sustainable.

In a second step I assess the causes for the different motivations to be endemic, and argue that they will not be overcome without major social and economic policy changes, and changes in value patterns: sustainable consumption policy will fail unless embedded into a Great Transformation towards sustainable societies. Concepts of a good life will play a major role when defining the transformation trajectory, but will not be sufficient as they are either too abstract to guide concrete strategy formulation across the board of policy domains, or they are too narrowly focussed on leisure, consumption and individual behaviour and need to be complemented by concepts of good work and a fair economy, including issues of trade and peace. Social security including a physical basic supply and changed price structures would be one element of a sustainability transition.

However, some of the consumption motives identified can be seamlessly integrated into a sufficiency strategy which emphasises the necessity of political framework setting to give progress (technical and social innovations, and human orientations) a sustainable direction, first by declaring the orientation towards ever more, faster and higher to be obsolete and offering an alternative of "enoughness". Key here is to reclaim and refashion a new and desirable form of 'progress' away from endless orthodox economic growth and endless consumption and accumulation. Economically speaking, this requires policy reorientation from the maximum (of growth, consumption, power, …) towards an optimum which balances values and sets limits.

Taking a closer look at the definition of human needs, we distinguish the finite set of needs from the unlimited list of (potential) wants, and argue that sustainable consumption does not mean ignoring human needs, to the contrary, but choosing sustainable satisfiers to these needs. Many of these will be social achievements and not products and services traded on markets, but what is traded needs to be reshaped as well – this is the domain of Design for Sustainability DfS. It goes beyond ecological design by emphasising the social and institutional dimensions of sustainability.

This includes revisiting the way strong sustainable consumption has been advertised: as in the current commercialised societies there is hardly a space and an opportunity to lead a sustainable, for instance a low-carbon life style, I advocate to pursue the issue as a question of the right to self-determination, the right of citizens in their communities and towns to have places of self-determined non-consumption (or consumption of non-market goods and services), in zones free of advertising and commerce.

In the conclusions, the paper returns to the different consumption motives and discusses which of the strategy elements mentions can be mobilised to address them, and integrate them into a sufficiency transformation towards strong sustainability.

Why people consume

Consumers have different motivations to consume, some individual, some collective, some inherently unsustainable, some caused by the absence of sustainability in their social environment. For successfully promoting strong sustainable consumption, it is necessary to distinguish the different motivations. Beckenbach et al. (2012) distinguish four motivations:

Catching-up consumption refers to the unmet needs in particular of low income groups. The means of satisfaction and the level aspired can be very different, depending on the respective society and the economic system, including the role of subsistence production versus exclusive market supply.

Conformist consumption responds to the desire to match the status of the social reference group, not being identifiable as an outsider or otherwise discriminated for the absence of certain goods which signal group membership. Smart phones and branded clothing, although initially not an essential need, can have this role, in particular among younger people. Who does not have these symbolic items runs the risk of being excluded from her social reference group (Røpke 1999), turning the ability to exhibit such goods into a social necessity.

Positional consumption refers to the same peer groups as conformist consumption, but with the desire not only to conform to common cultural standards, but to be superior (Veblen 1899). The aspiration can either be the claim for a leading role in the respective group, or the attempt to (seemingly) qualify for a different one, usually with a higher social reputation. Goods can be owned, rented, borrowed or stolen – visibility is more important than ownership details (Lorek, Spangenberg 2003).

Defensive consumption is the result of efforts to compensate for the deterioration of the prevailing living conditions. The mortgage-based consumption binge in the USA before the collapse of the bubble and the subsequent Great Recession, following long-term and still prevailing income stagnation and economic losses in the dot.com bubble, is probably the most prominent example. Scherhorn (1997) calls this kind of consumption compensatory consumption and points to the fact that socially bad working conditions (lack of self-determination, permanent control, interference of superiors, lack of recognition) are empirically linked to compensatory consumption (Spangenberg 1995). In a similar vein, the social psychologist Tim Kasser (2002) has argued that with low self-esteem and low mental well-ness are often associated with consumerism (excessive/unhealthy consumption) as well as 'materialist' and 'self-enhancing' as opposed to 'self-transcending' values.

Scherhorn (1991) adds another, cross-cutting category, addictive buying, which can be catching-up, positional or compensatory. It is characterised by the fact that the consumer has limited rational control over the buying decision (like any addiction, severe debt can be the result). The act of buying is much more important than the ownership of the respective good (they may remain on a domestic shelf without being unpacked), and medical treatment is required.

Addressing the motivations

Endemism

The causes for the different motivations to be endemic are rather obvious: catching-up consumption is a legitimate objective of those feeling left behind, and fuelled by the increasing polarisation of income and opportunity. Conformist consumption is the material expression of social group membership, one of the basic needs of humans (Max-Neef et al. 1989). As such this need should not be suppressed, but from a sustainable

consumption perspective better, less resource intensive means to satisfy it should be found, for instance immaterial cultural symbols. Regarding positional consumption, while people's ambition for social upwards mobility should not be suppressed either, the social polarisation increasing the incentives, and the predominantly material consumption based expression of group membership can be reduced. Redistribution of wages and wealth, high taxes on luxury goods and a culture of understatement would lower the resulting level of conspicuous consumption (Fischer-Kowalski et al. 1995). Finally, avoiding defensive consumption requires social security networks, formal and informal, to avoid the threats of both income and access poverty and safeguard the living standard achieved, and an organisation of working life supporting the self-realisation in one's working environment.

Framing

Obviously, the causes of unsustainable consumption can neither be expected to be fading away under the influence of education, ethics and reflection; they are reflections of interaction of humane aspirations and the means the outside world offers to realise them. Rather than hoping for "new humans", it is necessary to reshape the conditions for realising humane aspirations. This can be rather obviously not achieved within the sphere of consumer policy: unsustainable consumption is an inevitable symptom of a lack of sustainability in society.

The major social and economic policy changes essentially address all aspects of the socio-economic system, from the way labour is organised (and informal labour shared) via institutional mechanisms like the social security systems to institutional orientations and changes in value patterns and behavioural routines (Spangenberg 2014). Implementing such changes would alter the fabric of our societies. Important first steps can be taken here and now; exploring the possibilities is an urgent task. This includes 'unlocking' individualised, unsustainable consumption towards more collective and socialised forms of consumption, with libraries, tool sharing or a concierge rather than online book orders and purchasing expensive power tools. As a rule of thumb, for all durable consumer goods private ownership is the least efficient ways of service supply, as sharing is always superior.

This implies that sustainable consumption policy will fail unless embedded into a Great Transformation towards sustainable societies, including reducing social stratification, enhancing distributional justice, promoting non-material means of self-realisation and gaining reputation, and last but not least good work.

Good life

Concepts of a good life will play a major role when defining the transformation trajectory, but will not be sufficient as they are either too ambitious for people to identify with spontaneously, too abstract to guide concrete strategy formulation across the board of policy domains, or they are too narrowly focussed on leisure, consumption and individual behaviour. Concepts like "being instead of having" (Fromm 1976, with reference to "reasonable consumption", for the benefit of humans) or self-limitation and conviviality (Illich 1975) have inspired much of the sustainable consumption and the sufficiency debate, but are too elitist and complex to serve as everyday life guidance for ordinary citizens. Their emphasis on human relations, a critical approach to technological progress, the primacy of human needs over economic interests, the call for solidarity, an end to the exploitation of nature and the chance of active participation in society are echoing in the discussions on what makes a good life.

A good life is neither measurable in income terms, as already F. Schumacher and J. M. Keynes emphasised (agreeing about the role of profits, the market and the love of money,

they both believed that there was much more to life than getting and spending).[15] Nor can a good life be measured in terms of individual happiness – trying to do so is a projection of neoliberalism's methodological individualism on sustainability issues. A good life can only be led in a good society; the call for a good life is one invoking ethics, behaviour and policies to establish sustainable societies (Lorek, Spangenberg 2014). A good society reduces the incentives and even more so the need for unsustainable consumption; concluding from the different motivations it must be more equitable than current societies. As Wilkinson and Pickett (2009) have shown, less social polarisation can be expected to be positively correlated with better population health, less mental illness, violence, imprisonment, lack of trust, teenage births, obesity, drug abuse, and poor educational performance of schoolchildren. It is this broader context which provides self-interest motives for sustainable consumption, far beyond motivations of green consumerism or voluntary simplicity usually discussed as motives (Marchand et al. 2010). Since – as we know from Piketty 2014 – increasing social polarisation is the rather automatic result of free market economies (trend chances occur in timers of crises or under strong redistributive policies), societies have a stark choice: continue following the neoliberal business as usual including deregulation and free trade, at the cost of eroding social cohesion, lack of trust (we might call this the Trump phenomenon) and other social ills, or opting for a political U-turn, risking a conflict with mighty interest groups but benefitting society as a whole. However, for the time being, elites prefer to gamble, keep their neoliberal policies hidden from the public eye instead of honouring democratic decision making, as the TTIP leaks have illustrated. Ideology trumps the public good, for the time being, but how long can that last?

Visualisation

To gain transformative power, communicating transition concepts requires metaphors and visualisations making the simple core of a complex process intuitively accessible. Environmentally motivated limits need to be complemented by concepts of good work (with gender justice in paid and unpaid work) and a fair economy, including issues of trade and – of course – peace (as war is the ultimate unsustainability). At the same time, the concept must be promoting democracy and participation, individual freedom and self-determination, offering a freedom of choice regarding lifestyles. One early tool doing so was the environmental space concept with and upper boundary limiting exploitation of the environment, and a lower bound, known as the 'linea de dignidad' describing the minimum conditions for a dignified life in the respective society (Spangenberg 1995; 2002) which was also been used to identify criteria and indicators for sustainable consumption (Lorek, Spangenberg 2001)[16]. In the meantime, scientific and political developments permit to specify both limits quantitatively or qualitatively: the upper threshold can be identified with the Planetary Boundaries (Rockström et al.2009; Steffen et al. 2015) while the floor of the environmental space represents the Social Protection Floor suggested by ILO, endorsed by the 2012 UNCSD Rio conference and adopted by the UN General Assembly. Measures suggested include redistribution of income and wealth, a cap on income and inheritance, an unconditional minimum income including a physical basic supply (free provision of water, electricity, gas and means of mobility to bring vulnerable people out of the influence of market fluctuations and achieve a certain level of decommodification of basic needs) and changed price structures (progressive price

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[15] For Keynes, economic activity was the means to bring society to a position where the good life could be enjoyed. Schumacher was even more ambitious: he thought economic activity should be made part of the good life (Chick 2013).

[16] The importance of avoiding 'social shame' by having the resources to live a decent life, have a dignified standard of living and participate fully in society was highlighted already by Adam Smith. It also plays a role in Sen's idea of 'development as freedom' and in the 'capability approach'.

scales), and a strengthening of democracy (Spangenberg 2014). The idea has been resonating in the sustainable consumption scholarship; for instance, Di Giulio and Fuchs (2014) used it, renamed as 'Sustainable Consumption Corridors', to analyse the possible objections which the found to be not insurmountable.

However, regardless if environmental space or corridor, such concepts define the boundaries but not what are the sustainable lifestyles with this space. One good reason is the freedom of choice: any lifestyle within the boundaries is equally sustainable (other judgement criteria may apply). However, a few things can be said resulting from the boundary concept, both addressing the distributional challenges which become the most pressing issue once the prospect of endless growth has been given up:

- If a ceiling for the national resource consumption is demanded, the question must be answered how the possibility to consume should be allocated. If done through the market according to purchasing power, squandering scarce resources by wealthy citizens could coincide with suffering by the poorer ones (drought-induced water scarcity in California is a point in case: government had to intervene to avoid that the rich fill their swimming pools while the poor are desperate for cooking, drinking and washing water). Against this background, some campaigners have advocated equal distribution rights (Buitenkamp et al. 1992) have calculated the "fair share" of each citizen, a resource budget per capita. The basic concept has been revitalised 20 year later by scholars suggesting a fixed carbon budget per capita (in Germany in particular by Niko Paech), this time combined with the permission to trade the entitlements against money (which undermines the basic idea quite substantially). However, if an equal individual budget is not advocated, another distributional pattern or mechanism must be defined, paying due respect to the principles of justice in procedure and outcome. One suggestion has been to have market allocation, but to safeguard justice by introducing an individual capping to income, a maximum salary complementing the minimum salary defining the floor of the corridor. A tax rate on more than 90% on all earnings above, say, 1 million €/year (as it was in the USA before Ronald Reagan dismantled it) would effectively be such a capping.

- However, as little as they will like it, wealthy people could still use the stock of wealth to buy themselves out of any restrictions (wealth distribution is even more uneven than income distribution). As wealth concentration is also a political power threatening real democracy, redistribution of wealth is a necessary element of a "good society". Taxes of more than 100% would be effective, but hardly find public support. So a suitable measure could be an inheritance cap, set e.g. at a maximum of 10 million € per capita. This is enough, without any interest taken into account, to guarantee a work free monthly income for a whole life of 80 years – hardly anybody can claim that it would cause poverty amongst the next generation, nor would normal tax payers become afraid as they will nowhere close to having m 10 € to pass on to their kids. Limits of both, income and assets, would undermine the habit to express group membership by exhibiting expensive material goods, enforcing different position and status symbols to be used.

Of course any such proposal if aired in the political arena will be labelled as weird, unrealistic, and utopian (if it less weird to try continuing an unsustainable model, and less utopian to defend the status quo ante is usually not discussed). Thus there is a language problem which must be solved: protagonists of the status quo, of unlimited growth of production and consumption, try to define the terms of debate (stripping for instance "sustainable development" of all its non-neoliberal content) and to determine the course of the discourse. Changing that is essential, hence the search for new terms, partly qualifying embattled ones, like substantial sustainability and strong sustainable consumption, partly provocative by clearly contradicting status quo ante orientations and

thus raising necessary disputes (like 'degrowth'), partly defining new policy fields, like 'sufficiency policy'.

Sufficiency

However, some of the consumption motives identified can be seamlessly integrated into a sufficiency strategy which emphasises the necessity of political framework setting to give progress (technical and social innovations, and human orientations) a sustainable direction, first by declaring the orientation towards ever more, faster and higher to be obsolete and offering an alternative of "enoughness". Economically speaking, this requires policy reorientation from the maximum (of growth, consumption, power, …) towards an optimum which balances values and sets limits. However, it would be too narrow to understand this as an individual task, as done by the happiness analysis school of thought. Rather than preaching individual behavioural change, the challenge is striving for a society which allows, encourages and in some cases enforces such a behaviour: a good life is only possible in a 'good society', a concept dating back to Aristotle (he called it 'happy society') organised in a way that that is serves the common good of the people and not of those with power, must rest on laws the ruled have agreed to and had part in their making rather than on a ruler's power, with laws that are just and apply equally to all. This resonates well with Buddha's teaching of collective goodness and compassion to nature, as well as with the key principles of "Koranic Values" identified by Rehman and Askari (2010), which are surprisingly most comprehensively realised in Ireland, Denmark, Sweden and the UK, with the best performing Muslim countries Malaysia and Kuwait ranking 33rd and 50th. Obviously implementing ethical, moral and even religious virtue is by no means easy or self-explaining; it requires a significant institutional change on all levels of society (Spangenberg 2014). In our modern societies, the cultivation of sustainability character with sustainability virtues will require enhanced efforts in terms of education and life-long learning, but also strengthening community ties.

From a consumer research perspective, such philosophical and moral support is welcome but insufficient to change lifestyles. However, if we combine the insights of Max-Neef et al. (1989) and Irving Fisher (1906), we might approach a solution: the former found that needs are few, finite and classifiable (unlike economic wants that are infinite and insatiable), while the satisfiers by which these are met diverge over time and between cultures. Needs include physical (nutrition, health, shelter) and non-physical ones (subsistence, protection, affection, understanding, participation, idleness, creation, identity and freedom). The satisfiers catering to these needs can be more or less sustainable without necessarily changing the level of need satisfaction – sustainable consumption is a matter of choosing suitable satisfiers to fulfil needs, rather than criticising the needs themselves – not humans as such, but the consumer culture causes the problems. In a 'good society' a number of non-physical needs will be guaranteed as a matter of the very structure of the society; quite some satisfiers provided today by professional psychotherapists would no longer be required (sad for the therapists, bad for the GDP). Regarding the physical and some non-material needs, many of them will be social achievements but supported by or provided using products and services traded on markets, so these products need to be reshaped to meet social and environmental sustainability criteria. This is the domain of Design for Sustainability DfS which goes beyond ecological design by emphasising the social and institutional dimensions of sustainability as inherent criteria for designing goods and services (Spangenberg et al. 2010).

Fisher points out that human satisfaction is not derived from buying something (that would be the case of addictive buying and a case for the remaining therapists), but from enjoying the services a good provides over its lifetime, whenever it is used. This '*psychic income*' is what creates satisfaction and contributes to human well-being –and it

accumulates the longer a good lasts, it can be higher for products the user identifies with (e.g. self-made, home-made) and if s/he can consume them with good consciousness, e.g. knowing that they are environmentally benign. The growing interest in 'collaborative consumption' is based on the same feelings. Fisher understood this as the really important income and questioned the standard definitions of income and capital, but failed to make psychic income measurable and thus operationalise an alternative accounting method to GDP. We should make use of this treasure and its inherent exposure of the lack of understanding standard economics has towards why people consume, criticise the wrong attribution of value to the point in time of buying instead of the period of enjoying, but refrain from quantifying enjoyment – the psychic income is an eye-opening metaphor not to be quantified.[17] Thus emphasising *psychic income from real satisfiers* as an alternative to 'more, faster, wider' could be a convincing appeal to reason as it directly addresses the human needs and satisfying ways to fulfil them – which is what consumer culture and advertising promise, but is more than they can keep. In a nutshell: we need a different narrative and what makes good, satisfying consumption, not elitist like voluntary simplicity, but appealing to the consumers at large, and we need pioneers practicing such selection criteria and reporting about their experience and satisfaction – what could be more credible?

Conclusions

This includes revisiting the way strong sustainable consumption has been advertised: as in the current commercialised societies there is hardly a space and an opportunity to lead a sustainable, for instance a low-carbon life style, it seems advisable to pursue the issue as a matter of the right to self-determination. Currently the right to choose a lifestyle, in particular a frugal one, the right of citizens in their communities and towns to have places of self-determined non-consumption (or consumption of non-market goods and services), is grossly violated in consumer societies. Putting it this way, the right to have zones free of advertising and commerce is a civil rights issue.

Under these conditions, *catching-up consumption* should be significantly reduced in a society with a basic unconditional income, limited polarisation of income and asset distribution, and equal opportunities. In such a society the borderlines of social reference groups would be blurred to some degree, while group membership would be expressed by other traits than material thus reducing the role of *conformist consumption*. The same argument applies to *positional consumption*, and *defensive consumption* would become a privilege of the (still but less) rich who are too few to make the nation as a whole transgress the planetary boundaries.

In a nutshell: a 'good society' is not only necessary but also desirable for the vast majority people, for moral and practical reasons. As it requires a makeover of the institutional setting of our societies, it will not by a one-time act but requires a process. This process needs guidance; sufficiency policy can provide a *leitbild* for this transformation, the joint vantage point of the desirable and the possible.

Acknowledgements

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[17] Like biodiversity and ecosystem services are brilliant metaphors which can turn into „complexity blinders“ if monetary valuation is applied to them (Norgaard 2010).

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Ossified materialism: on achieving Absolute Reductions

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Abstract

As well as being self-explanatory in the sustainability context, REDUCTIONS is an acronym for "Reducing Environmental Degradation & Unsustainable Consumption Trends & Impacts On Nature & Society". Absolute Reductions (AR) is an exploratory project which brings together knowledge on and explores ways to address core elements for societal transformation towards a sustainable civilisation – one living within ecological limits. The choice of the words "Absolute" and "Reductions" are deliberate, reflecting the growing body of scientific assessments and policy outcomes testifying to the understanding that current approaches to sustainability characterised by relative decoupling, efficiency standards, green consumerism and greenwashing, etc. are not enough.

The core reading for the workshop is introduction article from a Special Issue (of the Journal of Cleaner Production) on Absolute Reductions: a framework for assessing AR, systemic challenges to change, difficulties in setting AR targets, and a research agenda for sustainability science to establish alternative narratives to the current socioeconomic paradigm and towards AR.

Akenji, L., Bengtsson, M., Bleischwitz, R., Tukker, A., & Schandl, H. (2016). Ossified materialism: introduction to the special volume on absolute reductions in materials throughput and emissions. *Journal of Cleaner Production.*

For the final version of the paper – e.g. for proper citation – please contact the authors.

Discussant Contribution

Defining the limits

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Introduction

This session is entitled, "Defining the limits in relation to wellbeing and planetary boundaries." The third session of the workshop is about implementing "limits" with "social justice." These issues of limits, wellbeing, and social justice should all ideally be addressed in the same session. In fact, these three papers all attempt in their own ways of linking the three sets of issues.

"Sufficiency, degrowth and sustainable consumption," Joachim H. Spangenberg

This is a wide-ranging paper, which makes many valuable points, such as: the importance of seeking sustainable satisfiers to fulfill needs, rather than criticizing needs themselves; the idea that a good life can only be led in a good society; the need for greater equity in the distribution of wealth as part of the move to sustainable consumption; and the need for a new field of "sufficiency policy." That said, there are some points that need further development.

The paper starts by identifying motives that drive consumption, such as catching-up for low income groups, conformist consumption, positional consumption to demonstrate superior social status, and defensive consumption. The paper then discusses possible steps to address those motivations. It makes an important contribution in focusing attention on how to address each of the driving factors, which will be necessary if a sustainable consumption model is to emerge. One limitation, however, is that all the driving motivations of consumption that are identified are primarily negative or reflective of social pathologies. Addressing such driving factors certainly will not be easy, but focusing only on these negative factors understates the level of the challenge. This issue came up at the recent SCORAI conference in Maine, where one participant asked: are there not also positive, attractive elements to consumption? For example, do academics—myself included—consume so much jet fuel for air travel to go to conferences only because we are conforming to the standards of our reference group, or driven to it by other negative forces such as insecurity about the impacts on our careers if we did not do so? Or does it happen, at least in part, because there are positive pleasures involved in the experience of intellectual exchange, travelling to new places, etc.? It seems quite clear that environmentally impactful consumption of this kind also brings some positive benefits to people. One implication is that there is a need not only to remove or limit the negative social forces driving consumption; there will also be a more difficult challenge in finding ways to scale back some forms of consumption that bring some real wellbeing to people.

One valuable point in the paper is that many concepts that have guided thinking about sustainable consumption are too elitist to appeal to ordinary citizens. It is important to

think about how to broaden the political appeal of sustainable or sufficient consumption beyond green circles. Many working-class people are being left behind by globalization and neoliberal policies—and their anger is often taking politically destructive forms, such as support for Donald Trump in the US and right-wing political movements in Europe. Can sustainable consumption be approached in a way that addresses some of the concerns of people that feel they are being left behind? This is a considerable challenge; it certainly should not involve pandering to racist or anti-immigrant sentiments. However, it could potentially involve addressing issues of economic security—i.e., making economic security a social and policy priority higher than consumption growth (Barry 2015). With that in mind, Spangenberg's paper includes some valuable ideas for a sustainable consumption agenda, such as an emphasis on income redistribution, proposals for minimum and maximum incomes, and a focus on good work and a fair economy.

The paper includes a statement that "as a rule of thumb … sharing is always superior." More sharing could certainly be an important element of a shift to sustainable consumption, but as we have learned more about the "sharing economy" it has become clear that the impacts are varied and complex. For example, "sharing" can save people money and generate rebound effects as they spend their savings on other forms of consumption (e.g. Airbnb enabling more travel). In this sense, sharing is like efficiency; sharing without sufficiency will not necessarily bring any net environmental improvement.

"Ossified materialism: on achieving Absolute Reductions," Lewis Akenji

This paper is challenging to comment on since it is a broad-ranging introduction to a special journal issue, covering a great deal of territory. It emphasizes the need for absolute reductions in our material resource demands and environmental impacts; identifies four main challenges to achieving such reductions; offers some potential solutions, such as ecological fiscal reform and design for sustainability, among others; and proposes a research agenda focused on six domains of change. As with Spangenberg's paper, there are many sensible and valid points that are likely familiar to many of those working in the field of (strong) sustainable consumption, but which the political mainstream yet to fully acknowledge. These include: the need for a radical transformation in light of the urgency of the sustainability challenge; the fallacy that enhanced efficiency alone will be enough; the need not only for absolute decoupling (and not merely relative decoupling), but for absolute reductions that occur at a sufficiently rapid pace and scale; and the importance of trade in shifting ecological burdens globally and moving production to more carbon-intensive regions.

In terms of this session's theme of "defining the limits in relation to wellbeing and planetary boundaries," perhaps the most important section is the one on reduction targets, which leaves an overriding message of both the importance and complexity of translating planetary boundaries into absolute-reduction targets. The paper includes an important point about the need to approach target setting differently depending on the category of environmental impact being considering; for example, global norms for per-capita CO_2 emissions may play a role, but global targets for water use are of limited utility as watershed level targets appear more appropriate.

One issue that could have come across more strongly in the section on target setting was the importance of justice in allocation of targets (it is perhaps assumed in the analysis). The idea of linking target-setting to what is sufficient—i.e., what is enough, but not excessive—for a good life might also make a valuable addition to that discussion.

The paper notes the precedent of "time-bound targets" when it comes to climate change.

Although such target-setting has been a key focus of global climate negotiations since the 1990s, there has in practice been a shift away from trying to reach negotiated international agreement on binding climate-reduction targets in line with scientific assessments of necessary reductions. The Paris agreement (like Copenhagen before it) in effect abandoned that process and left it to nations (or groups of nations such as the EU) to voluntarily set their own, non-binding reduction goals. That shift has been necessary to bring the big emitters, the US and China onside, but it has left a large gap between the level of emissions reduction needed and what countries are prepared to do. That climate-change experience leads to the question of whether there are there any lessons about what ought to be done, or not done, as we think about target setting in other areas?

The article states that "The choice of the words 'Absolute' and Reductions' are deliberately provocative...." As a reader, I wondered what is provocative about those words "absolute reductions?" When it comes to climate change, for example, there seems to be little serious disagreement—with the exception of a few delusional corners of the political world, such as the US Republican Party—on the need for absolute emissions reductions. The main question seems to be how to get there. The more provocative point in the paper, in my eyes, was that the mainstream approach of relying on technology, efficiency, and green consumerism is not enough to achieve the absolute reductions that are widely recognized as necessary.

Finally, the paper includes a brief statement about the "transformative function of targets and monitoring." Please forgive my skepticism about the impact of targets; as a Canadian, I have seen key environmental targets established in recent years that have not been transformative at all. The Canadian experience with climate change is to establish targets, ignore them, and continue moving in exactly the opposite direction. This raises a question for us all to consider: what are the necessary components of targets that would make them transformative? What else is needed alongside the targets to give them real transformative impact?

"Consumption corridors and social justice: exploring the limits," Doris Fuchs & Antonietta Di Giulio

Fuchs and Di Giulio's paper discusses the idea of consumption corridors, i.e., establishing minimum standards for consumption that are sufficient to live a good life, while also setting maximum standards so that consumption does not undermine the ability of others, today and in the future, to live good lives as well. The concept of consumption corridors has considerable promise and is worthy of further elaboration. It conceptually integrates ideas of the good life, justice, and sustainability, and encapsulates the core challenges that we face. Of course there are significant complexities, as the authors acknowledge, in defining the standards for consumption corridors—not to mention building political support for them, and enforcing them. It is a very big idea—and at this point it is too much to expect that all the details are worked out. That said, there are some questions to ask to see how far the thinking has gone in beginning to work out the details.

The most basic question is what would these consumption corridors look like? What form would they actually take? How narrowly or broadly does one define the relevant fields of consumption? Are we talking about establishing standards for activities such as air travel? Is that too narrow? Do we need to think more broadly in terms of energy consumption, allowing people to choose how they want to use their fair share of energy use among different activities?

Might we define consumption corridors as broadly as setting minimum and maximum income standards, which could be a fairly simple proxy for overall resource use?

A related question is what does the policy instrument actually look like to set these standards? A few years ago in Britain, there was a proposal, which the government considered, to establish personal carbon allowances—allocating everyone an equal per-capita carbon-emission allowance, while allowing trading of allowances among individuals to give some freedom to individuals to consume more or less depending on their priorities (Fawcett 2010). Is that the kind of policy instrument that could make this work? Or would it require something else altogether?

A question emerges about the role of the state with regard to consumption corridors. The authors identify key state roles in organizing a societal deliberative process to set norms for consumption corridors and in enforcing standards that emerge. But they also write that a main challenge is that "those with a lot of power will likely have little interest in defining sustainable consumption corridors." I take "those with a lot of power" to include the state. If action by the state is needed, but the state will not be interested, a profound problem exists. Perhaps that is simply the situation that we find ourselves in today. However, perhaps there are ways to imagine that the state and those with power more generally could become interested. Some political theorists have looked at the prospects for linking environmental demands to the core political imperatives of contemporary states, which include security, legitimation, and the perceived imperative of economic growth (Dryzek et al. 2003; Meadowcroft 2007). Might there be ways to link consumption corridors to one or more of these imperatives? As the experience of climate change and environmental degradation grows, could we find that ensuring basic environmental conditions increasingly becomes an increasingly central element of state legitimacy? Could there be openness to security-related arguments about the need to ensure access to sufficient resources to people across the globe to reduce risks of conflicts and the numbers of refugees crossing borders? In a world of increasing global demand for more scarce and expensive resources, might we even find economic arguments for establishing maximum consumption standards to reduce a country's dependence on costly resource imports? There will certainly be major challenges in getting the state to support the idea of consumption corridors, but it is worth giving thought to the possible forces that could drive state interest, especially if the state is essential to making the idea work.

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Note taker report

Defining the limits

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Emerging topics

Justice - still a central concept in societies?

The consumption corridors concept, presented in the paper by Fuchs and Di Giulio, appeared to capture participants' imagination, so the discussion started with reflections on it. First, the concept of justice, fundamental to consumption corridors, received attention. There was some debate between participants as to how important justice is to societies today. Some participants thought modern societies have moved away from justice as being a central organizational concept in societies, as even in countries that were so far considered exemplary, for example Sweden, inequality increased a lot. Other participants did not agree with this and thought that in several countries justice is one of the most debated issues as, for example, since the economic crisis people are able to justify their large incomes less and less. Furthermore, applying the principle of justice alone will not limit environmental impact.

How to define and implement consumption corridors? How do they relate to the concept of good life?

The concept of consumption corridors is very appealing and attractive. But how is it different from similar ideas such as, for example, the environmental space theory? And how should it refer to and integrate planetary boundaries?

How should minimum and maximum consumption values be defined? Using average consumption values for this may be problematic as the very rich bring the average value up considerably. There was a suggestion that linking to the planetary boundaries principles and calculations could help with defining minimum and maximum values.

Another solution to defining values may be focusing less on income disparities, but rather on which and how much resources people need to lead a good life. It is important to avoid and repeat the narrative of economic growth by not getting into the problematic of income disparities. For defining sustainable consumption corridors it is necessary to define what is needed for leading a good and satisfying life. For this, universal human needs also need to be defined, and what resources are necessary for satisfying these needs as well as which resources have limits.

Sustainable consumption corridors do relate to the concept of the good life, but how exactly? Also, consumption corridors will likely need to be enforced, but should not the good life be more voluntary? Perhaps, instead of asking people what they need for the good life we should ask them what prevents them from having the good life.

Negotiation and social deliberation processes will need to be used for defining the minimum and maximum corridor values. Indeed, a great amount of dialogue will be needed to exchange information and knowledge on resources and their global and local

limits, how efforts for preserving them affect their availability, etc. It is also necessary to define - through dialogue - the level of existence that does not compromise a level of existence for others, including future generations.

It is not enough to include researchers in these types of dialogue and knowledge exchange, as the discussion on sustainable consumption corridors lead to a lot of questions by other stakeholders. Questions relate to issues like what is the good life? Can it be defined in a way that is universal? Does society at large accept the idea that there are resource limits and planetary boundaries? Do we accept that the definition of the good life may vary from generation to generation, and even within a generation?

Finally, there needs to be discussion (and research) on how consumption corridors could be implemented? How could they be established and then introduced when they will vary from resource to resource? What kind of policies could reduce consumption and in which settings? What is the role of power in relation to the consumption corridors?

Working hours

Several times during the discussion ideas and issues related to working hours came up. Participants wondered about how many hours of work would one need to do in a voluntary simplified lifestyle? Does taking a sufficiency approach entail working fewer hours? Or perhaps fewer paid hours but more subsistence related work, so on the whole maybe even more hours of work?

There was also some discussion on whether we mean and also how to prioritize between resource and labour intensive jobs and work. We would all like to see consumption reduced. But do we achieve this through machine or manual work? How should one choose between saving time (i.e. buying a new machine or piece of equipment) or saving energy and resources? This brings up the question on the role of technology. Still there is a strong belief by many that technology will help solve all our resource-related problems and will provide answers. Will it, and to what extent?

Furthermore, after the 'age of fossil fuels', reduced working hours may not provide a (or 'the') solution, as it currently appears society will no longer have access to easily accessible and relatively cheap energy.

Finding answers in a new, re-framed system

Participants also mused about the fact that we often start our discussion by critiquing the present system. However, our answers and suggested solutions often rely on the same framework of thinking. So, it is very important that we create a new framework.

In relation to this one participant even said that we are in the 'prison of sustainable development thinking' that is defined by the four dimensions. There is need for reconsidering this and even breaking away from it. European policy makers and political decision makers are increasingly convinced that the 'business as usual' scenario is no longer an option as witnessed by the Copenhagen and Paris climate negotiations and the discussion on the sustainable development goals (SDGs). The resulting targets are relatively new, but they are more stringent than previous similar targets as it became clear that those targets had not brought the required results and a lot of them had not even been met. Considering the resulting gap between desired and actual scenarios and admitting that the gap exists is a very sensitive issue, and can lead to situations of crisis. So, how do we move forward as a society without falling into crises or prey to the right wing movement?

The relatively recently emerged discussion on the circular economy (even though the concept is not new) also has a misguiding metaphor especially related to recycling (e.g. that it is not less but more labour intensive than 'original' production). Is it a good way forward that the industry is trying to find a solution to this problem through using artificial intelligence? Furthermore, it is very important that companies should have a mandate for implementing but not for planning and finding the best solution as they are interested in profit, which may make decision making about the best methods flawed.

Finally, the point was raised that while breaking with previous frames of thinking we should also realize that education - although very important - alone will not provide a solution to the issues and challenges that the human society is facing. As a result, we should not only rely on education.

II

Grappling with social justice

The economics of sharing: an empirical study from Barcelona (Spain) and Bulgaria

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1. Introduction

In a recent survey on attitudes towards sharing, commissioned for various regions of the UK, 81% of the respondents state that sharing makes them feel happy and 75% declare to feel better when sharing their time and possessions with others (Griffiths 2011). Culturally sharing has a connotation of cooperation, togetherness, and sociality. The term is wide in significations, among which are: to apportion, to budget, to cut, to set aside, to slice, to give and to allot.

Writings on sharing treat its conceptual differences with gift, reciprocity and barter. For anthropologist John Price (1975) sharing is the most universal form of human economic behaviour, which ensures that the "intimate" (i.e. small-scale and personal) economic system effectively distributes resources in a non-reciprocal manner. Belk (2007) sees sharing as "the act and process of distributing what is ours to others for their use". In a literature review in the field he notes that sharing tends to be overlooked, and confused with commodity exchange and gift (Belk 2010). Benkler (2005) also positions sharing as based on social-relations which are not necessarily reciprocal. He believes that sharing represents a modality of production, which is widespread, while undervalued in many advanced economies.

A review of more than 300 academic papers with the word "sharing" in the title shows that the term is most frequently studied in the context of managing digital information, or distributing costs, risks and various "bads". Less research has been dedicated to sharing in the sense of joint use of objects. This type of sharing is interesting for several reasons. Presumably, it can contribute to mitigating pressing environmental problems (e.g. climate change). It can be perceived as a consumption that embraces sustainability and sufficiency as ethical principles. This is especially relevant considering that the 'use-efficiency' of goods, (the highest number of people using a particular item throughout its life-cycle), is not an objective meticulously pursued by public policy. On the other hand, sharing alone might be too easy of a solution, or a misleading path towards sustainable degrowth (Demaria et al. 2013). Sharing can also backfire and result in an increased use of resources, for example. This is especially relevant, given the rise of collaborative and commercial consumption practices, defined as systems of organized bartering, lending, trading, and renting where sharing plays a prominent role (Albinsson and Perera 2012, Lietaert 2010).

Analysis here draws upon a stylized representation of the conditions under which sharing is beneficial (on both individual and societal level). The potential rebound and educational (or side) effects of sharing are also considered. Original data from metropolitan Barcelona (Spain) and rural Bulgaria several is used to firstly identify several common types of sharing, namely – of cars, housing, electro-domestic appliances and tools. Secondly, the

psychological, social and cultural determinants of sharing are sought through series of econometric regressions.

2. Types of sharing

The first differentiation in the domain of sharing one can make is with regards to its organization. Sharing can be done commercially (i.e. purchasing a laundry service) or non-for-profit (using a washing machine among friends). The first type of sharing is discussed in the literature on product service systems, and the second - in anthropological studies and in writings on collaborative lifestyles. A number of sharing practices, such as markets where goods are given away, swapped or sold, however fall in the grey area between the two (Botsman and Rogers, 2010).

Commercial solutions to sharing abound. Mont (2004), for example, looks at product service systems as an alternative to ownership. Reviewing schemes for tool rental and laundry serices in Sweden, she finds that washing machines have a higher success at sharing. Users of public washing-machines are generally satisfied with the equipment quality and availability. Tool rental by private persons is, however, relatively low. Only between 5% and 10% of the available commercial renting services are rendered to private persons. Mont concludes that commercial sharing is more likely to happen for goods which are relatively expensive, infrequently used and having high insurance and maintenance costs. Prettenthaler and Steininger (1999) also find that the switch from ownership to service-purchasing would be easier for durable high-value goods, whose total flow of services does not extend beyond one's lifetime. Observing schemes for commercial sharing, Lamberton and Rose (2012) find that the propensity to share is defined by consumers' perceived risk of product scarcity even when cost, utility, substitutability, and knowledge are accounted for. Approaches to sharing as a prosperous business model appear in a book by Gransk (2010), titled "Why the future of business is sharing". There the author argues that making money and building communities of sharing can go together. In her words companies can flourish by renting goods at the moment when these are needed, 'relieving' customers the burden and expenses of ownership. The intention here is to maximize profits on sales of services, rather than on sales of goods[18].

The literature on sharing as an informal, non-for-profit or collaborative practice is less rich (Botsman and Rogers 2010). Non-commercial sharing is more complex and varies with the locus of ownership. Shared goods can either be individually or communally owned. The use rights and responsibilities associated with these two types of ownership differ. Sharing goods with a community-based ownership can be related to the work of Elinor Ostrom, demonstrating how resources can be sustainably and collectively managed outside market and state institutions (Ostrom 2003, 2010). Studying the motivation of people using communally owned goods, such as library toys, Ozanne and Ballantine (2010) find that sharing is often chosen as a way to reduce consumption and a form of 'market resistance'. Albinsson and Perera (2012) look at sharing in grass-root marketplaces, organized by consumers for consumers. The authors find that participation is often non-reciprocal and driven by the desire and need to foster social collaboration and strengthen communities.

One practice which falls in between the commercial and non-for-profit domains, is mobile phone-sharing in Africa. James (2011) finds that mobile phones can be shared by up to ten

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[18] This vision of the sharing economy, however, does not go without a criticism. Paul Davis, editor of the Shareable Magazine, comments that: "Focusing on the profit motive reduces the scope of the sharing economy, from a transformative cultural movement to an easy way to make a quick buck. Sharing isn't just a way to make start-ups profit ...—it's a cultural movement that has the power to build community, engagement and a new, more sustainable peer-to-peer economy, transforming how we define our interpersonal relationships in the process" in Davis, P.M. 2011. Collaborative consumption: It's not about the Money. www.shareable.net

people, either within a family or commercially in a number of African countries. If phone-sharing, rather than ownership, is considered, he estimates that mobile-phone use in Africa is almost as high as in Europe. In poor countries, he notes, the benefits from use are more heavily derived by the sharing of a particular technology, rather than from its ownership.

Sharing further differs with goods' design and function. Public goods with high fixed costs (such as hospitals, schools, public transport, parks, museums, libraries) and some private ones (restaurants, bars and music clubs) are generally designed for sharing. Much of the transport, energy, communication and entertainment infrastructure is meant, built and existing for a shared use. We also share small-size goods, such as newspapers in trains, books in libraries, bicycles in public transport schemes, and dining tables in restaurants. Other categories of goods we tend to share less. Private goods (like houses, cars, swimming pools) are commonly shared within a close group of friends or relatives. Often the sharing of these goods is asymmetric, implying that one individual, or family, has the property and priority use-rights. Furthermore, while having one stationary telephone, one music player, one car and one computer per household was common in richwe countries about ten years ago, now the number of these items per household is growing proportionate to the number of members. Some goods are now especially tailored for individual use. Examples are small-size laptops, I-pods, and mobile phones. Non-durable small-sized goods, which are not easy to repair are costly to share as they easily break down and are relatively expensive to fix. The trend towards reduced sharing of various appliances and tools is thus driven, among the rest, by a goods' design.

Still, few of the goods we use are strictly individual. Unless we live alone, we share the larger part of everything in the household or office with others. A large number of these goods are "lumpy" according to Benkler (2005), meaning that they can only be provided in certain discrete bundles, offering discontinuous amounts of functionality or capacity. The author gives examples with computer processors, books, cars, and toys. Since only the owners of these goods use the capacity generated by them, a large pool of idle and excess capacity is generated in many small "drops" while remaining unused. Unlike Mont (2004), Benkler finds that sharing smaller and not too dear objects is relatively easy to achieve because individuals are not interested in buying excess capacity. Nonetheless the most common examples of sharing studied in the literature concern pricy and bulky items like housing and cars. These are reviewed in turn.

Co-housing projects are broadly understood as neighbourhood developments where various facilities are combined to respond to the social and the practical needs of urban citizens. Lietaert (2010) shows that cohousing projects started 30 years ago in Denmark, and quickly spread to the Netherlands and Sweden, where the model was institutionalized in 1980. Eventually these type of projects appeared in the USA, the UK, Australia, New-Zealand, Canada, Japan and more recently in Italy, France, Belgium and Spain (McCament and Durrett, 1993). While the concept of co-housing dates from pre-industrialised times, implementing it in the context of post-industrial societies, where people rarely work where they live, is meant to recreate social links and share daily amenities (Lietaert 2010, Carlsson-Kanyama 2004). Heath (2004) finds that the nature of the relationships and proximity that arise and exist between household members are crucial for house-sharing[19]. People self-select for the type of house-sharing, be it peer or family-based. In an older study of the US housing market Schreter (1986) writes that most people who share their homes do so consciously and voluntarily, rather than due to considerations of age, debility or income disadvantages. Schreter further notes that living with others, either family or friends, is reported to be more psychologically rewarding. Based on a data-set of 1,018 individuals in the UK, Griffiths (2011) shows that 72% of the respondents prefer sharing their homes rather than living on their own. Mulder et al. (2006) further find that

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[19] House-sharing is understood here as a group of people residing in a common flat, or a house.

communities using shared housing are likely to have a higher and more sustainable quality of life and lower rates of consumption than the average, which is relevant for the analysis in the upcoming section). For this a balanced contribution from built, human, social and natural capital, as well as proper community design are crucial. The current trend in housing, however, points to a reduction in sharing space, together with an increase of the square meters of space used per person. For example, over the last twenty years the number of secondary homes throughout the Spanish coast increased several folds, pointing to the availability of an excess housing capacity (Gallent et al. 2005).

Cars are the other category of goods most commonly studied in the literature on sharing. The UK survey on the attitudes to sharing quoted earlier reports that 63% of the population would like to share their journeys to work. One of the largest car-sharing companies in the US has about 360,000 members and roughly 6,000 cars, implying up to 60 users per car[20]. The forms of car-sharing are further diversifying. Shaheen et al. (2012) find that peer-to-peer vehicle sharing is growing, especially in the cases when trust among the auto-owners and renters is enforced. Mont (2004) notes that car-sharing is usually chosen for the associated capital and maintenance costs savings, availability and flexibility of use, and an environmentally sound image. Prettenthaler and Steininger (1999) further analyse the main services rendered by cars among car-owners in Europe to find that 69% of the surveyed households would benefit from car-sharing if it is the yearly mileage that motivates the ownership of their vehicle. When the service of having a car always at disposal makes an important motive for its ownership, 22% of the surveyed households would benefit from car-sharing.

Furthermore, Mont (2004) estimates that car-sharing may reduce the number of cars on the roads by 44%[21] and the distances driven by 30- 60%. Steininger et al. (1996) study drivers' behaviour before and after joining a car-sharing organization in Austria and find a 46.8% reduction of total private vehicle mileage. They find that participants do not regard car-sharing as more difficult than private car use. Fellows and Pitfield (2003) also show that car-sharing can produce a high net benefits to society. Yet, car-sharing need not always reduce the number of cars on the road. Seik (1999), for example, shows that the introduction of car-sharing schemes in Singapore made people switch from public transport to cars, and served to satisfy citizens' aspiration for using personal vehicles. Similarly, Steininger et al. report that individuals who had owned a car before joining car-sharing initiatives reduced their car mileage by 62%, while individuals who had never owned one, increased their car-mileage by 118%. Vehicle-sharing can thus lead to a reduction in the total amount of kilometres of car-travel as long as these schemes reduce car-dependency and do not lure users of public transport to switch to cars (an illustration of the rebound effect). For this reason Huwer (2003) suggests that car-sharing is promoted as a form of combined mobility jointly with public transport. The author argues that the basic orientation towards public transport can be maintained if car-sharing is pursued as an option for specific activities or days within a mix of available transport modes.

3. Conceptualizing sharing and its determinants

While sharing is conceptualized broadly in the literature on a long continuum between simple market transactions and altruistic, non-reciprocal actions, the definition explored here is more restrictive.

In what follows, sharing is confined to the collective and non-market, or non-commercial use of physical resources and goods beyond the family structure and regardless of the

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[20]   Car and Bike Sharing Capture Urbanites' Eyes. Electricity Journal, 2010. Vol. 23, Issue 5, p.3
[21]   Result are derived by Meijkamp (2000) and Sperling et al. (2000).

ownership regime (hence considering both collective and single-owner property/goods). This type of sharing can be studied as a private decision and as a socially beneficial solution, considering the gains and losses on both levels.

3. 1 Sharing as a private decision

Starting with the assumptions that individuals are rational and self-interested, (a premise which can be dropped further on), one would share when the net benefits of sharing outweigh those of private ownership (of not sharing). Staring with the socio-psychological benefits of sharing, these are associated with feeling part of a community and belonging to a social network. The psychological benefits of non-sharing, on the other hand, reflect the importance, social status and self-perceived sense of security that individuals assign to the ownership of particular goods. Moving to the socio-psychological costs of sharing, these are associated with facing uncooperative behavioural, free riding, conflict and having a lower degree of privacy, comfort and freedom. The psychological and economic costs of non-sharing are respectively related to the feeling of rivalry and conspicuous behaviour. Finally, the economic cost of sharing represents the financial and time-related resources of purchasing, using and maintaining a particular good in a shared way. They increase with the amount of time required for coordination and decreases with the cooperation efforts exerted by all users.

A rational individual would then share when:

- the associated monetary and time savings are positive. In this case sharing is a strategy to afford pricy, high-quality tools or housing. If the amount of extra effort and time needed for sharing is not excessive, its economic cost is normally lower than the one of private ownership one;

- the socio-psychological gains of communal use outweigh these of non-sharing, or when sharing creates social bonds and enhances trust and mutual aid in the community;

- the psychological costs of sharing are not excessive.

The individual decision to share can then be described as a trade-off between the economic gains and psychological constraints of sharing (i.e. distrust, uncooperative behavior; the role of social status assigned to individual ownership). For example, an individual would share a car if the interaction efforts and time required for agreeing on its use schedule and maintenance are smaller than the preference of having it always at disposal.

3.2 The societal aspects of sharing

The earlier section, however, does not consider the fact that people do not necessarily calculate the gains and losses of all their actions and can decide to share even when their net individual benefits are negative; or when societal and environmental benefits are high. These could be reductions in pollution, erosion, landscape damage and natural resource use and more generally, the mitigation of environmental problems like climate change, biodiversity and landscape loss. Overall, the environmental costs of sharing a good, or a property, are likely to be lower than in the case of its private use.

Two effects can influence the potential environmental gains of sharing, however. One is associated with rebound and the other with its educational (or side) effects. Starting with the notion of rebound effect, it is well established in the literature that efficiency in product design and use does not necessarily lead to a consumption reduction due to behavioural or other systemic responses. The underlying phenomenon here are the rebound effect and Jevons paradox (Polimeni 2008). As consumption aspirations tend to adapt upwards, efficiency savings are often redirected toward new consumption (Herring

and Sorrell 2008, Alcott 2008). Energy and material efficiency alone can thus bring environmental gains only when rebound effects are minimized. The same holds for sharing. If sharing is promoted as a way to tap new market niches, like in product service systems for example, making certain goods cheaper and fashionable, it might rebound and result in an amplified resource use and pollution. In her book on commercial sharing Gransk (2010) suggests that customers should be encouraged to buy less and use more. Applying her recipe to cars-sharing implies that easing access to vehicles can help customers redirect the savings made on car-ownership to car-use and thus travel more. Furthermore, car-sharing can either get us in the habit of using motorized vehicle, (eventually inspire a purchase of an individual vehicle), or it can have an 'unlearning' effect. Alternatively, while sharing luxurious holiday apartments can bring down demand for new vacation housing, it can also make the use of secondary housing cheap and accessible, encouraging unsustainable life-style practices (i.e. high level of international travel) which are quickly adopted and replicated. In sum, if sharing rebounds, its environmental costs are likely to be multiplied.

The process of sharing can be associated with lifestyle changes and have educational, or side, effects. The direction of these is, however, often uncertain. Lietaert (2010) finds that house-sharing can lead to behavioural shifts from an individual to more collective action. He argues that members of cohousing communities often adopt more environmentally sustainable habits after joining one of these projects, thanks to the stimuli and coordination inside the community (i.e. within co-housing communities sharing systems for small items such as tools for gardening, maintenance, cleaning and cooking are often created, and the sharing of cars, freezers, and washing machines is well-organized). Thus, on the benefits side, sharing can be a tool to introduce (and debate) societal choices and practices on the use of specific goods, resources and space. It can trigger cooperation and sustainability in life-styles and habits through (mutual) learning. This learning effect would scale up, or multiply, the environmental gains of sharing. At the same time, sharing can also discourage environmentally sustainable practices. Negative experiences with co-housing, for example, can evoke a dislike for sharing space and objects and increase demand for individual housing. Hence, from a society-wide perspective (non-commercial) sharing would contribute to sustainable degrowth when potential rebound effect are minimized and new practices and habits (in line with sufficiency and conviviality) are developed and adopted.

Sharing has multiple other social repercussions and implications. For example, it can contribute to the reduction of the inequalities in the access of goods and services, and thus contribute to higher well-being in society (Verme 2010). Sharing can further be studied in the context of social comparison and rivalry. More than 20% of the personal expenditures in the US can be attributed to conspicuous consumption[22] (Heffetz 2007). If sharing improves access to conspicuous goods, it can make their possession less important for status. Stated differently, the pleasure and social status obtained from the ownership of a conspicuous good (e.g. a sports car) might diminish with the notion that many others have access to the same good. For example, only 9% of the people who possess a car for status reasons would like to share their vehicle (Prettenthaler and Steininger 1999). More generally, increasing the possibilities of sharing might calm rivalry and the desire for goods ownership as a medium for identity-building. Given the negative impact of conspicuous consumption on subjective well-being, reducing status-based consumption can translate in higher well-being in society (Frank 1999). Certainly, reducing status-based consumption is not equivalent to reducing status-seeking, which is inherent to society. With more sharing, status-seeking can only be moved to other, hopefully less

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[22]   Consumption defined as "conspicuous" is aimed at demonstrating social status, and the goods most frequently included in the conspicuous basket are cars, housing, clothes, jewellery, furniture and modern electronic appliances.

environmentally burdensome areas. This said, possession of conspicuous goods which are only made accessible to a small circle of peers can still be a source of social status (i.e. the ownership of a castle). Asymmetric sharing where one individual has the property- and priority use-rights over a conspicuous good might reinforce status-seeking and wasteful consumption.

Given the private and societal aspects of sharing presented above the number of conditions required so that sharing is both individually and socially beneficial grows. For sharing to become a meaningful element of sustainable degrowth some the following (not-exhaustive) provisions need to be met:

- the associated economic and time-savings are positive;

- rivalry and conspicuous consumption decrease with sharing;

- trust, cooperation and social capital increase with sharing;

- rebound effects are minimized and the educational side effects of sharing favour sustainability and conviviality; or the environmental costs are smaller than these of private ownership.

4. Sharing in urban Spain (Barcelona) and rural Bulgaria

4.1 Data

Certainly, any empirical tests as to whether and to what extent the aforementioned determinants of sharing are present in our societies are immensely difficult to undertake, mostly due to the lack of consistent and representative data. The analysis in this section is based on a social survey covering various themes, including subjective well-being, sharing, and awareness about environmental deterioration. It was administered by the author in urban Spain (Barcelona) and rural Bulgaria in 2011. The choice of countries is random, rather than intentional and motivated by the author's residence and respectively knowledge of both countries. An identical questionnaire was launched in both countries, resulting in two data sets. The data set from Spain resulted in 840 observations (from 1000 interviewed individuals) and Bulgaria one in 600. It should be noted that the Spanish data set is representative for the city of Barcelona in terms of gender, age and districts coverage. The Bulgarian one is representative (for gender) of the rural towns and villages that have experienced floods or are located close to settlements where inundations have taken place recently or longer in the past. The econometric analysis below should thus be borne with these data particularities and limitations in mind.

The survey included questions on demographics (age, gender, education, income, marital and employment status), subjective well-being, free time, social life, sharing and social capital (a table of descriptive statistics will be later attached). Starting with the data from Barcelona, most of it was collected via face-to-face interviews in randomly selected houses in all city districts.[23] On the question *Would you like to continue sharing what you already do (share)* 61% of the respondents (in Barcelona) gave an affirmative answer, 24% state they would like to share more while 15% would rather avoid sharing. When asked to identify the items they normally share, the majority of the respondents in Barcelona mention books, clothes, space, furniture, and computers. Moreover some 34% understand sharing as a socializing event, such as spending time (or a having a meal) with the others, or as an exchange of information and knowledge. Responses are furthermore mixed between those who perceive sharing as a non-commercial activity, done outside the family circle (the majority), and these who prefer to share with a partner. With regards to the

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[23] Sixty respondents filled in the questionnaire on the Internet.

categories of shared goods, 26% of the respondents in Barcelona share a car.[24] Exactly half of the sample share a house. As regards to the other two categories of goods, 55% of the interviewed share tools and 39% - a washing machine, fridge or a TV with others. Obviously, much of the electro-domestic appliances and tools are shared in the context of a shared house, as 70% of the people who share electro-domestic appliances and tools also share a house. However, only 33% of the people who share cars live with other people in the house.

The Bulgarian data consists of survey responses conducted in 15 villages and towns in north/north-west part of the country. Exactly one third of the respondents declare that they would like to continue sharing (the items they already share), and 21% state they would like to do it more. The remaining 45% prefer not to share. When asked to list the items they normally share, many of the people interviewed talk about sharing money (in the sense of helping those in need), and a few refer to food, services, seeds and clothes. Sharing in this sample is culturally understood as a form of reciprocal mutual support, often monetary, done outside the family circle. By categories, 18% of the respondents share a car, 30% a garden, and only 9% a house, electro-domestic utilities and tools. In the Bulgarian sample cars are shared more than houses. Car-use in rural Bulgaria is however, relatively higher than in Barcelona.[25]

Comparability between the two data sets is impossible given the culturally specificities of both regions and countries. Yet, one possible reason for the substantially lower level sharing in rural Bulgaria can probably be sought in the responses to the questions concerning trust and confidence in others. While 58% of the Catalan respondents state that people can be trusted, only 31% of the Bulgarian responses subscribe to this statement. Furthermore 79% of the Bulgarian respondents consider that people normally abuse each other's confidence, while 46% of those surveyed in Barcelona chose this response. At the same time those who believe people help each other are more in rural Bulgaria (52%), than in Barcelona (39%).

4.2 Regression model

The hypothesis of the private decision model from section 3.1 states that sharing is jointly determined by economic factors (such as income and time availability) and psychological ones (such as the need to be part of a community versus the social status and self-perceived sense of security assigned to the ownership of particular goods). To test the social decision model from 3.2, variables associated with the environmental awareness can be included as drivers of sharing. The datasets allow for testing some of the variables in these categories, together with age, education and marital status. Given that the dependent variable is a dummy, taking values between 1 and 0, and responses are only ordinarily comparable Ordered Probit (OP) model suits best the purpose of the analysis. OP explains the act of sharing by the probability that an individual decides to share, given a number of conditions. This can be formalized as:

$P_i(x) = F(\mu_i, x, \beta)$

where F is the probability distribution of sharing, i is the number of the observation, x is an independent predictor of sharing, and β reflects its strength and size. The threshold parameter μ is then equal to zero or one. Assuming that $F(.)$ is normal, with a variance 1 and expected parameters $\beta_1 x_1 + ... \beta_{pi} x_p$, probability P can be defined as a function of a latent utility as follows:

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[24] 52% of them do not normally commute by car.

[25] 43% of respondents in the Bulgarian sample do not normally commute by car

$P_i(x)=N(\mu_{i-}\beta`x;0,1)$, where $\beta`x = \beta_1 x_{1n}+ ...\beta_p x_{pn}$,

Here p is the number of characteristics which jointly determine sharing and n is the number of observations. In the OP regressions presented in Tables 1 and 2, the dependent variables are respectively answers to the following questions: Would you like to continue sharing (what you already do)? Do you share a house? Do you share electro-domestic appliances? Do you share a car? Do you share tools?

4.3 Empirical results (Barcelona)

Each data set was analysed separately. Table 1 presents the results from five specifications based on the Barcelona data-set, with separate dependent variables: one corresponding to the willingness to continue sharing, and the rest – to particular shared objects (a house, a car, domestic appliances and tools). In correspondence with the private decision hypothesis from Section 3.1, results in Model 1 indicate that people tend to share less with *age* and the number of *working hours*. Figure 1 shows that people with the highest willingness to share are in their thirties and forties. Individuals who are *single* are less willing to share, while g*enerosity* (defined as the frequency of lending objects to others), *volunteering* and *higher incomes* have a positive effect on sharing. The dependent variable here is contingent upon respondents' subjective interpretation of sharing, implying that regressions per item of sharing (Models 2-5) provide some further detail.
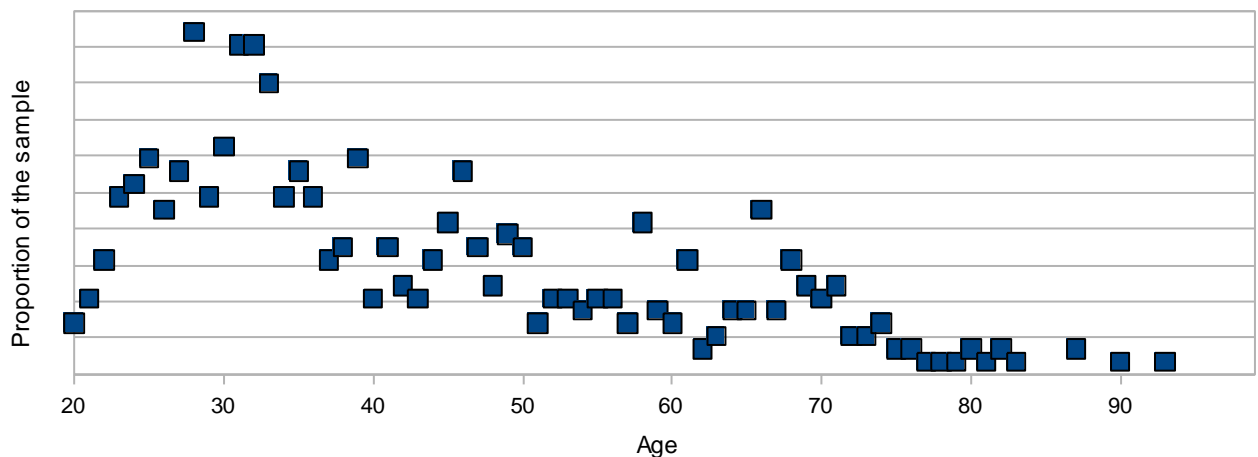

Figure 1. Willing to share in Barcelona for different ages

House-sharing

As in the previous case, house-sharing tends to decrease with *age*, *being married* and the number of *working hours* (Model 2). The sharing of housing is more likely to occur among individuals who are generous, or used to lend their items to others. The level of *education* and, surprisingly, *income,* do not have an influence on the decision to live in a shared house, while *environmental awareness* is highly significant.

Sharing electro-domestic appliances

The regression results with *sharing electro-domestic appliances* (such as a TV, a washing mashing, and a fridge) as the dependent variable (Model 3) resemble the ones of house-sharing. Again *age, working-hours* and being *married* decrease the probability of sharing electro-domestic utilities, while *education* is not significant. *Income* in this model is significant and negative, implying that higher earnings tend to discourage the communal

use of TVs, washing machines, computers or other utilities. The variable (number of) *friends* is significant here and has the expected positive sign. As inverse causality cannot be completely dismissed with this variable, a test for endogeneity was conducted, which turned negative.

Table 1. Sharing in Barcelona

Model 1

Share	coef.	std. err.
Age	-0,01**	0,00
Single	-0,36***	0,12
Working hours	-0,01**	0,00
LogY2011	0,21***	0,07
Generosity	0,33***	0,05
Volunteering	0,26**	0,12
Number of obs		818
Pseudo R2		0,0840

Model 2

Share house	coef.	std. err.
Age	-0,02***	0,00
Education	-0,03	0,05
Married	-0,31***	0,10
Working hours	-0,01**	0,00
LogY2011	-0,04	0,07
Generosity	0,24***	0,04
Env.awareness	0,22***	0,11
Number of obs		812
Pseudo R2		0,1083

Model 3

Share electro-domestic utilities	coef.	std. err.
Age	-0,01***	0,00
Education	0,03	0,05
Married	-0,46***	0,10
Working hours	-0,01**	0,00
LogY2011	-0,15**	0,07
Generosity	0,19***	0,05
Friends	0,02*	0,01
Number of obs		768
Pseudo R2		0,1317

Model 4

Share car	coef.	std. err.
Age	0,00	0,00
Education	0,12**	0,05
Single	-0,30***	0,13
Full-time work	-0,44***	0,12
LogY2011	0,04	0,08
Generosity	0,23***	0,05
Car hours	0,28***	0,04
Public transport	-0,10**	0,04
Env.awareness	0,22*	0,11
Number of obs		825
Pseudo R2		0,1150

Model 5

Share tools	coef.	std. err.
Age	-0,01*	0,00
Education	0,11**	0,05
Full-time work	-0,27**	0,11
LogY2011	-0,01	0,07
Generosity	0,24***	0,05
Friends	0,02*	0,01
Number of obs		775
Pseudo R2		0,0776

Car-sharing

The factors which determine car-sharing (Model 4) are somewhat different from the former three models. While age and income does not influence car-sharing in this

specification, education is positive and significant. Being single, using frequently public transport and working full-time are all significant and negative determinants of car-sharing. The frequency of using a car in this model contributes to sharing your car, as demonstrated by the significant and positive sign of car hours, defined as the number of hours spent in a car per week. The variable environmental awareness is positive and significant.

Sharing tools

In Model 5 the variables *age, full-time work, generosity* and *friends* feature the same signs and significance as in the regressions on sharing housing and electro-domestic appliances. The endogeneity test with friends is also negative here. The level of *education* is associated with higher levels of tools sharing, unlike the income parameter which was not significant.

Several general trends in all five models can be spotted. The first one is the negative signs of *full-time work* and *working hours*, which can be related to the discussion from Section 3.1 on the importance of the time-constraints in the private decision on sharing. Another trend is little influence of the *income* parameter in four of the models. One interpretation of this result could be that sharing is not so strongly driven by economic reasons, or by constraints on earnings. Yet, the working hour parameter has a relatively highly correlation with the log of income (40%), and despite insignificant tests on multicollinearity, it captures the effect of income. Higher level of working hours could imply, (though not necessary) higher level of income. The third trend concerns age. The variable is negative and significant in almost all models, implying that sharing tends to be associated with a particular life-stage.

4.3 Empirical results (Bulgaria)

In the Bulgarian data set the number of individuals who share housing, electro-domestic appliances and tools is fairly low. Sufficiently high number of observations for running regressions were only available for testing two models: one with the *willingness to continue sharing* and another with *car-sharing* as dependent variables (Table 2). In the Bulgarian sample, as is the case with the Spanish one, the *willingness to share* decreases with *age* and being *married,* and increases in *income* (Model 6). The positive contribution of *income* might, however, indicate that people with higher incomes here have more to give, and more to share. Given that the Bulgarian sample was drawn in fifteen towns and villages, it was possible to differentiate between the types of urban areas. People living in villages have a considerably higher willingness to share than town-dwellers, illustrated by the significance and sign of the *village* coefficient. Interestingly, the variable reflecting negative emotions is significant in both models. Frequent episodes of *anger* are associated with a lower willingness to share. Indeed, 26% of the respondents in the Bulgarian sample report to frequently feel angry, while this is the case for only 3,7% of the Barcelona respondents. The other two predictors of *the willingness to share* in the Bulgarian sample are *watching TV* daily and *distrust* in the good intentions of others, which are both highly significant and negative.

Car-sharing

In this model the parameters age, higher level of education and use of public transport are all associated with lower level of car-sharing. Income here is significant and positive, unlike in the Catalan case, although causality cannot be conferred from this result because higher income implies a higher probability of car-ownership. The highly significant variables here are being a woman and the belief that people are mainly self-interested, both of which emerge as negative determinants of car-sharing. The sign of female can, however, be explained by the relatively lower percentage of car-use among women: 63%

of the individuals spending more than one hour commuting by car per week are men and their percentage drastically increases for higher number of hours per week spent on car travel.

Table 2. Sharing in Bulgaria

Model 6			**Model 7**		
Share	*coef.*	*std. err.*	*Share car*	*coef.*	*std. err.*
Age	-0,01***	0,00	Female	-0,55***	0,14
Married	-0,35***	0,11	Age	-0,03***	0,00
LY2011	0,15**	0,06	Education	0,21***	0,08
Distrust	-0,36***	0,14	LY2011	0,22***	0,08
Watching TV	-0,23***	0,08	Watching TV	-0,24**	0,09
Village	0,32***	0,11	Public transport	-0,23***	0,07
Angry	-0,08*	0,04	Self-interest	-0,45**	0,19
			Angry	-0,1*	0,05
Number of obs		599	*Number of obs*		599
Pseudo R2		0,0645	*Pseudo R2*		0,221

5. Discussion

In both data-sets individuals' life-stages emerge as major determinants of sharing, as seen in the sign and significance of the parameters *age,* and *married/single.* The regression results further indicate that sharing is strongly influenced by time constraints (hence, the variables *working hours* and *full-time work*). Higher income is a (negative) determinant of goods-sharing, i.e the propensity to prefer private domestic appliances increases with the income level, which does not, however, hold for cars, housing, and tools in the Barcelona data set. It was argued earlier that sharing is more likely to happen when certain affiliation between the members of a community has been established. Some indication in this regard is demonstrated by the variables *friends, volunteering* and *generosity* which appear as strong positive determinants of sharing in the Catalan data set. In this regard, the negative signs of *distrust* and belief that people are mostly *self-interested* in the Bulgarian can be read as an indication that the low levels of trust increases the socio-psychological costs of sharing. The same holds for negative affect, or the frequency of being angry, which is a strong disincentive for sharing in the Bulgarian sample. Watching of TV on a daily basis is one of the common indicators of low social capital, crowding-out relationality and increasing material aspirations (Bruni and Stanca 2008). Its negative contribution to sharing in the regressions with the Bulgarian data also point to the importance of social capital for sharing. On the other hand geographical proximity between community members (i.e. living in a village) increases the episodes of sharing rural Bulgaria.

Overall the regression results tend to align with the hypothesis on the drivers of sharing for a rational individual from Section 3.1. Finding evidence that individuals decide to share even when their personal benefits are negative while the societal or environmental ones are high is more complex. The only result that can be interpreted in this sense is the role of environmental awareness (or concern with environmental deterioration), which emerges as a significant and positive determinant of sharing cars and housing in the Barcelona sample. Rebound effects are also difficult to trace. In the Barcelona sample individuals who spend many hours commuting by car per day are more likely to share a motorized vehicle. With respect to the educational, or side, effects of sharing, in both samples house-sharing correlates highly and positively with the sharing of electro-domestic appliances (0,66). Furthermore, when house-sharing is introduced as an independent variable in

Models 3, 4 and 5, it stands out as the most important (positive) predictor of car-, electro-domestic appliances and tool-sharing[26]. In this regard, some authors argue that when sharing within the household one learns to share with those outside the household. Co-housing can thus "create" sharing in other domains, or have educational effects such as adopting environmentally sustainable practices (Mulder et al. 2006, Lietaert 2010).

The hypothesis that rivalry and conspicuous consumption could discourage sharing is partly demonstrated by the low level of car-sharing in both samples among all types of shared items. Cars are often valued more for the associated status effect than use value, which makes their personalization essential (Verhoef and van Wee 2000). Hence car ownership is likely to derive more social prestige than car-sharing.

6. Conclusion

The practice of non-market sharing can be conceived as a challenge to the perception that goods need always be strictly personalized. It was argued here that (non-commercial) sharing can lead the way to sustainable degrowth if the associated economic and time savings are positive, rebound effects are considered (the associated resource savings are not directed towards increasing consumption) and the educational side effects enhance sufficiency and conviviality. Whether sharing could convert rivalry and status seeking to less-dangerous domains remains an open question. Yet trust, cooperation and social capital seem to be strongly tied with sharing, being simultaneously drivers and consequence of it.

The empirical analysis of sharing stems from two separate data sets based on the same survey conducted in Barcelona and Bulgaria. Although quite distinct from each other in terms of demographic indicators and cultural contexts, both data sets reveal some similar patterns. Results indicate that sharing is strongly influenced by time constraints and availability and partly by income. The sharing of electro-domestic appliances is shown to decrease at higher income levels, for example. Next, sharing is likely to take place when social bonds and affiliation (i.e. friendships, generosity, volunteering) among the members of a community have been established and the level of *distrust* is sufficiently low. Reverse causality, or co-determination however cannot be ignored: namely that sharing can contribute to the building of social capital in the long run, as found by Albinsson and Perera (2012).

The importance of psychological factors for sharing is manifested in the significance of the emotional status variables (such as *anger*). Geographical setting and one's life-stage are other important drivers. Younger generations and individuals who are not married are more inclined to share. Sharing further decreases with the amount of time dedicated to watching television (in Bulgaria), and increases with the amount of time dedicated to volunteer activities (in Catalonia). Environmental awareness is also a motivational factor for sharing.

The preceding discussion raises the question on the type of advocacy or promotion which sharing requires. Notably sharing need not be promoted for its own sake, that is, we need to share the right goods. Certain types of highly polluting and carbon intensive infrastructure, or harmful objects need neither be increasingly used, nor increasingly shared. Moreover, sharing could rebound: it might not always be associated with environmental and social gains. The promotion and marketing of car-sharing can shift passengers away from public transport, for example. Taxing car-ownership and use might not be a sufficiently powerful to avoid rebound on its own, as indicated by the lack of significance of the income parameter in the car-sharing model. Infrastructure adjustments which convert public transport into an easier and faster mode of transportation than

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[26] The variable was not introduced in the final regression models for reasons of multicollinearity.

personal car can avoid these types of rebound. Another relevant insight of foregoing analysis is that increased house-sharing, or the higher level person-occupation per square meter, could generate environmental benefits by incentivizing sharing in other domains. House-sharing can be promoted by fiscal measures as well as by increased taxation on secondary houses.

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Social justice in a constrained world: introducing Convergence Mapping

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Introduction

In the CONVERGE research project an international team of researchers and practitioners studied initiatives that incorporated elements pointing towards higher levels of equality and environmental sustainability. From all other aspects, the initiatives studied are very different: they include one-man projects like the No Impact Man, community initiatives like local exchange systems, transition towns and carbon clubs, business ventures, faith groups, policy initiatives, etc.. However, as our international team wanted to study how these very different initiatives worked towards more social equity and living within ecological limits, the need emerged to find a way to be able to compare them. 'Convergence Mapping' is the tool that resulted from this need, and this paper presents how the tool was conceptualized and used in the project.

Furthermore, during the process, in agreement with other authors (e.g. Demailly and Novel 2014, Gismondi et al. 2016, Sinclair 2014), the team also came to the realization that all too often 'sustainability initiatives' are considered almost automatically more sustainable than the mainstream way of doing the same thing. Convergence Mapping offers a way to analyse whether this is indeed the case as well as offers ways for initiatives to develop further. The paper presents the first conception of the tool with the aim of inspiring further discussion as well as cooperation between research and practice.

1. Background to Convergence Mapping: the CONVERGE project

The aim of the FP7 EU-funded CONVERGE project was to 're-think globalisation' by developing the implications of a 'Convergence' approach to global development based on more equitable access to the life-support capacities of the planet and fair livelihoods within planetary boundaries through a transdisciplinary systems approach (Fortnam et al. 2010). Convergence is defined as being a rights–based framework based on the principle that every global citizen has the right to a fair share of the Earth's biocapacity and access to fundamental human rights. It advocates socio-ecological justice and calls for wealth, well-being and consumption to converge across and within nations to a level that the biosphere can support (see Figure 1).
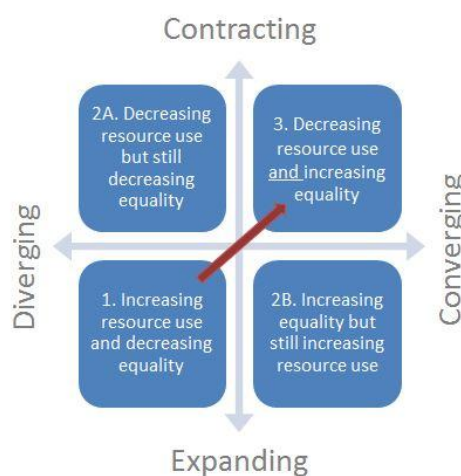
Figure 1: Schematic overview of the process of Convergence (Roderick in Vadovics et al. 2012)

The CONVERGE project used pre-existing sustainability science as a foundation for investigating the issues concerning taking an equity-based approach to managing planetary resources. It started by addressing the issues surrounding the concept of per capita 'allocation' of the planetary commons but evolved to take a broader systems perspective about resource boundaries, allocation and modes of distribution and to make "a deeper inquiry about the conceptual frames, principles and processes which groups and organisations could use in order to guide joint approaches to sustainability" (Parker 2013).

Correspondingly, this paper has four main sections. Firstly, a description of the genesis of the CONVERGE project is provided which includes some detail about the concept of Contraction and Convergence™ (C&C™). This section illustrates how one project output, the Convergence Mapping System, fits into the overall project structure and the literature. Our objective was to link the scientifically-validated need to reduce (i.e. to contract) resource use with a justice-based approach to apportioning the responsibility for doing so (to converge); a need which has been expressed by numerous authors and researchers (see e.g. AtKisson 2012, Bührs 2008, Daily and Ehrlich 1996, Ehrlich and Ehrlich 2013, Jackson 2009, 2011, Kitzes et al. 2008, Latouche 2010, Pontin and Roderick 2007, Simms 2009, Victor 2008, UNDP 2012, etc.). Next, a brief discussion of some of the theory behind the project – Environment and Development-related literature – is provided. This is followed by a description of the methodological approach taken when developing the mapping system. Finally, specific details are provided about the outcome of using the mapping system to examine a small grass-roots carbon club, an EU policy-driven carbon reduction initiative, a microfinance bank and a transition initiative..
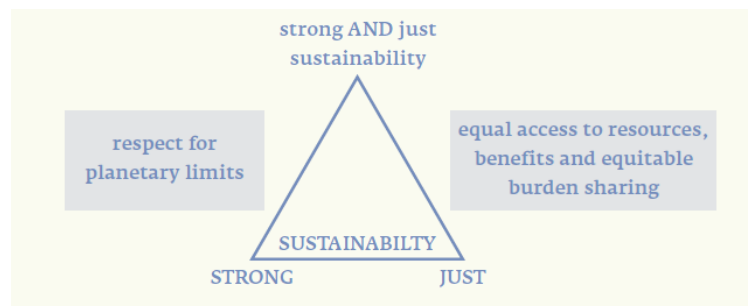

Figure 2: Framework and rationale for the CONVERGE project research (Vadovics and Milton 2013)

2. The concept of Contraction and Convergence™

'Convergence' has been a subject of study in economics literature since the mid-1980s in terms of trends in distribution of world per capita income and productivity (Abramovitz 1986, Baumol 1986, Sutcliffe 2005). However, the concept of Contraction and Convergence (C&C™) to which we refer in this document and from which the CONVERGE project originated comes from Aubrey Meyer and The Global Commons Institute (GCI). C&C™ is a global climate policy framework which has been proposed to the UN since 1990 by the Global Commons Institute as one way to manage and reduce anthropogenic carbon dioxide through a burden-sharing approach (Meyer 2000).

C&C™ proposes combining recognition of planetary limits with an equity approach to distribution in the following format: (a) Establishing a full-term contraction budget (a 'cap') for global emissions consistent with stabilising atmospheric concentrations of greenhouse gases (GHGs) at a pre-agreed concentration maximum deemed to be safe by the UNFCCC , and: (b) The international sharing of this budget as a pre-distribution of entitlements that result from a negotiable rate of linear convergence to equal shares per person globally by an agreed date. The framework would be given flesh and blood through

the setting of interim carbon reduction targets, drawing up of national de-carbonization strategies and a carbon trading scheme to allow a degree of flexibility to account for national differences in carbon intensity. The principle of C&C™ has been formally recognised in European Parliament resolutions (European Parliament 1998), is supported by numerous policy makers, academics, NGOs and lay people[27] and has was examined as an emissions allocation approach by the IPCC in their Fourth Assessment Report (IPCC 2007).

One of the advantages of the C&C™ proposal is the recognition that any effective and sustainable response to slowing the rise in carbon dioxide levels in the atmosphere inevitably requires addressing the issue of equity – who should reduce carbon emissions and by how much? C&C™ effectively slices the Gordian knot of allocating responsibility for cutting carbon dioxide emissions by proposing a global per capita allocation solution (a so-called 'strong equity' approach) which also takes account of the issue of the 'historical responsibility' of industrialised nations through its proposal for a negotiated rate of convergence.

Many scientists and policymakers have come to consider this approach to be not only the most equitable but also the most pragmatic approach to managing climate change when compared to other carbon reduction regimes: according to Böhringer and Welsch (2004; see also Berk and den Elzen 2001) who examined the implications on economic welfare of various approaches to emissions reduction "a Converge approach to emissions trading stands out for offering the developing countries substantial incentives for participation in the international greenhouse gas abatement effort without imposing excessive burdens on industrialised countries" (p. 21.), and is therefore the most acceptable arrangement.

Criticisms of the approach tend to focus on one of two issues: 1) demographic - a per capita based allocation rights might promote national pro-population growth policies. As a solution to this, Meyer (2000) suggests a cut off year after which population growth is no longer factored in to carbon allowances; 2) issues with implementation and political acceptability; these are addressed in some detail by Aldy (2005). Nonetheless, the severe impacts of climate change (IPCC 2013) and the resounding lack of success of alternative approaches to decreasing carbon emissions continue to make the C&C™ approach increasingly attractive. Furthermore, the need to recognise ecosystem limits and ensure more equal access to resources and the benefits they provide (as well as to more equally share burdens) has become more pronounced (Schneider et al. 2010). Equity driven approaches, such as the C&C™ proposition, suggest a way to meet these needs.

3.1. The need for a 'Limits' approach

Beginning in the 1970s, scientists from various fields started calling attention to the importance of planetary limits. One of the first pieces of research to draw attention to the environmental and social impacts of growing levels of material consumption was the 'Limits to Growth' report of the Club of Rome (Meadows et al. 1972). It observed that rising levels of affluence could have significant impacts in terms of increasing resource scarcity and causing environmental degradation. Several other authors articulated the same opinion (see e.g. Vitousek et al. 1986, Charkiewitz 1998) and were either of the opinion that levels of consumption and production should be decreased or that consumption processes be made more efficient (Weizsäcker et al. 1998).

Historically, a focus on increasing the efficiency of both the production and consumption of products has been a strong trend in both research and policy making (see, e.g. Sachs et al. 2010, or Knight and Rosa 2011, Victor 2012 for a review). Although this is still a rather strong trend, an increasing body of research points out that focusing primarily on

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[27] A comprehensive list of endorsements and awards for C&C™ is presented at: http://www.gci.org.uk/endorsements.html

efficiency is not sufficient for a variety of reasons, the first of which concerns the well-known 'rebound effect'; examples of which are numerous (Weizsäcker et al. 1998, Ropke 1999, Hofstetter and Madjar 2003).

Researchers have also argued that making efficiency improvements will prove sufficient to increase incomes and by then implementing appropriate market and policy measures the state of the environment will eventually improve (see e.g. Vincent and Panayotou 1997), as suggested by the environmental Kuznets curve (Archibald et al. 2004). In contrast to this view, other researchers conclude that environmental deterioration cannot be de-coupled from growth in consumption (Perrings and Ansuategi 2000, Knight and Rosa 2011). Instead, it can be said that more affluent countries can afford to create cleaner immediate environments but that, partly due to their trading relationships, they produce long-lasting negative environmental impacts at the global level and less affluent regions (exporting countries) suffer from worsening local environmental impacts (see e.g. Munksgaard and Pedersen 2001, Peters and Hertwich 2008, WWF et al. 2012).

A majority of evidence thus suggests that the 'efficiency' approach tried so far

1. has not led to a decrease in overall environmental impact (see e.g. Vitousek et al. 1986, Mont and Plepys 2008, WWF et al. 2006, 2012, 2014);
2. has not clearly lead to general increases in well-being (Constanza et al. 2004, Venetoulis and Cobb 2004, Worldwatch Institute 2004, Marks et al. 2006, Abdallah et al. 2012); and,
3. although progress has been made, it has not led to the meeting of important development-related targets (e.g. reducing the proportion of the population that are undernourished or are without access to clean drinking water) (Raworth 2012, UN 2015).

Due to these concerns, along with the current focus on the phenomenon of peak fossil fuels and the impacts of global climate change which are now being experienced by people at large, research into the concept of non-renewable resource and ecological limits and planetary boundaries has intensified. In a seminal paper, Rockström and his colleagues (2009a and 2009b) identified nine important planetary boundaries which should not be transgressed to maintain a "safe operating space for humanity" (2009b: 1). In the original paper and the update published in 2015 (Steffen et al. 2015) they argue that four of these boundaries – namely climate change, biosphere integrity, biogeochemical flows, and land-system change - have already been transgressed. This work has inspired a great deal of further research and discussion about the nature and existence of planetary boundaries. Two of the most important conclusions arising from these are that, on the one hand, it is likely that more boundaries than those identified by Rockström et al. have already been crossed (e.g. freshwater consumption (Molina 2009) and phosphorus inputs (Sverdrup and Ragnarsdottir 2011, Carpenter and Bennett 2011)), and, on the other, that global boundaries, although very important, are not sufficiently well-defined and sub-boundaries and/or local boundaries need to be identified to allow for more precise analysis (Molina 2009, Bass 2009, Steffen et al. 2015).

Considerable research has also been carried out in order to assess the long-term availability of non-renewable materials, a description of which would go beyond the scope of this paper28. However, the common conclusion is that, as with critical Earth system processes, humanity is reaching – or has already reached – many non-renewable material resource limits. For humanity to stay within planetary boundaries and resource limits, a focus on increasing resource efficiency must be supplemented with equal or greater emphasis on creating alternative models and levels of production and consumption. Evidence suggests that 'contraction' of overall levels of resource use is necessary, along

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[28]For a summary of literature see Ragnarsdottir et al. 2012; metals: Ragnarsdottir 2008; fossil fuels: Hopkins 2008.

with ecosystem restoration. Diverse types of initiatives which address these concerns at various levels already exist, for example, the Planetary Boundaries Initiative, the Resource Cap Coalition[29], and several countries use the ecological footprint to guide their strategic policy making (WWF et al. 2012, 2014).

3.2. The need for an 'Equity' approach

Most definitions of sustainable development include reference to the need to promote intra and or intergenerational equity. However, normative concerns about human development have not always been harmonised with approaches to managing resources, either in theory or in practice (Hayward 2006, Melamed et al. 2012, Raworth 2012, UNRISD 2012). Demand is growing for the technocratic global pro-growth paradigm to be refocused into a normative approach to development and sustainability, an approach that Meadows et al. (1992: 10) call "the last and most daunting step toward sustainability"; one which "requires solutions to the pressing problems that underlie much of the psychological and cultural commitment to growth: the problems of poverty, unemployment, and unmet nonmaterial needs".

The following arguments have been advanced to support the proposition that a focus on the social dimension must be behind efforts to improve environmental quality and development in general:

1. that countries with a) more equal income distribution b) greater civil liberties and political rights c) higher literacy levels and/or d) a more equal distribution of land may have higher environmental quality (Agyeman et al. 2003);
2. that environmental problems have now and will continue to have disproportionately high effects on the poor (compounded by the fact that globally and nationally the poor are not the biggest polluters) – a question of environmental justice (Ikeme 2003);
3. that regions with low levels of socio-economic development and low environmental quality have a higher probability of turning into conflict zones which can cause associated, sometimes significant, costs outside of their immediate zone of impact (Homer-Dixon 1994);
4. that emerging sustainability policy (e.g. from the United Nations Conference on Environment and Development in 2002 and the Rio+20 Conference on Sustainable Development of 2012) stresses the need for a) precautionary and b) ethically-driven approaches to sustainability (OXFAM 2013).

Arguments to support contention one, which might provide an instrumental rationale for supporting human development, are only partly convincing. For example, although empirical investigations show that many of the weakest performing countries on the Human Development Index (HDI) are only weakly sustainable, high HDI countries are often highly unsustainable in terms of their disproportionate consumption of biocapital and significant (sometimes offshored) carbon dioxide emissions (Neumayer 2010). Arguments two, three and four are largely undisputable. The normative rationale for promoting a more equitable approach towards development is clear. For example, although efforts are being made towards meeting the eight Millennium Development Goals for 2015, progress is mixed (OXFAM 2013, UN 2015). Several authors (e.g. Wilkinson and Pickett 2009, OXFAM 2013, Stiglitz 2012) report that global development of the last 30 years has lead to a situation of wealth and income extremes which is economically inefficient, politically corrosive, socially divisive, environmentally destructive and unethical.

While some progress has been in with quantifying planetary boundaries, apportioning environment-related rights and responsibilities through applying an ethical framework

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[29] See http://planetaryboundariesinitiative.org/ and http://www.ceeweb.org/rcc/

(promoting distributive justice) is challenging. Significant contributions to this end have been made from the research areas of Environmental Justice (Ikeme 2003), Environmental Debt (Paredis et al. 2006, Goeminne G, Paredis E. 2010, Simms 2009), Environmental Space/Resource Budgeting (Bührs 2008, Kitzes et al. 2008, Spangenberg 2002), and the Global Commons (Debarbieux and Price 2008, Ostrom 2008).

What is common to the research areas referenced above is that they all address one or more of three primary questions: 1) To whom must justice be done?; 2) What is it that should be more equitably distributed?; and 3) How should justice be carried out (according to which principle/s and mechanisms)? Sustainability literature has produced near consensus about the answer to question 1): justice should be rendered to both the living (intragenerational equity) and those not yet born (inter-generational equity). Answering question 3) is predicated on knowing the answer to question 2); what is the 'currency' of distribution? (for example, welfare, resources, rights, or some combination of them?) Muraca (2012) has defined a triptych of current theoretical approaches to distributive justice. The author terms these aproaches a) welfarism; b) resourcism; and, c) the capabilities approach.

According to the welfarism approach, individuals are entitled to distributive justice which is aimed at improving welfare or happiness (as it is perceived and self-reported), rather than being entitled to a specific set of goods or services (see Kamman 1984). The 'resourcism' approach, meanwhile, concerns the distribution of resources (natural resources, wealth, income earning opportunities) and the ability to enjoy them. This is largely compatible with Rawl's (1972) theory of justice which posits that each person should have an equal right to the most extensive basic liberty compatible with a similar liberty for others, and that social and economic inequalities are to be arranged so that "they are to be of the greatest benefit to the least-advantaged members of society" (the difference principle) and that "offices and positions must be open to everyone under conditions of fair equality of opportunity" (Rawls 'Theory of Justice', 1972: 303). Examples of this approach are found in proposals for 'capping and sharing' the use of certain planetary resources (Jackson 2011, McLaren 2003) and proposals for inalienable rights to social benefits derived from the consumption of resources. The 'capabilities' approach takes as its focus the promotion of a distributive justice that facilitates the ability of individuals to live the kinds of lives they desire.

An example of a rights-based approach would be the identification and implementation of a basic set of non-negotiable rights which are sufficient to provide a decent human existence, and the implementation of transformative policies and programmes that support the meeting of these needs. Sachs (2003), for example, writes that equity can be envisioned as meaning 'equal subsistence rights', which encompasses what individuals need to develop as living beings: clean air and drinkable water, elementary health provision, adequate nourishment and clothing and a roof over one's head. Spangenberg (2002), meanwhile, distinguishes between a triptych of minimum human rights; a physical minimum (necessary preconditions for mere survival), a basic need minimum (which would cover crucial needs for an active and healthy life including basic social standards and a social participation minimum (the minimum needed to lead a dignified life). Similar needs-based rights are enshrined in the Universal Declaration of Human Rights (see Article 25).

A recent paper from OXFAM (Raworth 2012) suggests that it may be useful to examine the concept of not only planetary boundaries but also a 'planetary social foundation' in terms of the proportion of the population who have access to 11 basic developmental indicators (such as food security, adequate income, improved water and sanitation, health, etc.).

The concept of 'Just Sustainability' has been proposed (Agyeman 2005) to address what has been called the 'equity deficit' of (environmental) sustainability. This conception of

sustainable development specifies the synergetic promotion of four focal areas: 1. improving the quality of life and well-being of current generations; 2. meeting the needs of both present and future generations (intra- and intergenerational equity); 3. fostering justice and equity in terms of recognition, process, procedure and outcome; and, 4. recognising and acting on the need for society to live within ecosystem limits ('one planet living'). As Hayward also comments in reference to a rights-based approach to carbon management, while it is indeed necessary to take due account of the human rights of those who are worst off, "[it] does not entail granting them [emissions] rights" but it rather it also "entails a recognition of the wider ranging redistributive responsibilities of those who have already benefited" Hayward (2006: 1).

The challenge for distributive justice thus requires reducing inequality in present generations, as well as looking both backwards (historical responsibility) and forwards (intergenerational equity). There has been recent interest research into addressing the goals of promoting equitable social development and well-being while reducing resource consumption simultaneously (degrowth literature; Gismondi et al. 2016, Holden et al. 2014, Schneider et al. 2010, Neumayer 2010, UNDP 2012) although a major transformation of policy, businesses, institutions and individual behaviours is required for significant progress to be made. Transforming economies towards a focus on social development may still allow for 'green growth' in developing nations while allowing for a well-being focused transformation of socio-economic structures in richer nations.

4. Methodology

The Convergence Mapping System was constructed after identifying through literature research and empirical methods different initiatives (communities, municipalities, policies, companies, etc.)[30] which appeared to be engaging in Convergence-type activities (i.e. were making attempts to address resource limits from a sink or source perspective, were addressing the issue of how Earth's biocapacity is shared, or were promoting access to fundamental human rights). It should be emphasized that the aim was not to assemble a representative database of initiatives but rather to illustrate the diversity of existing approaches to Convergence, implicit or explicit. As a result, apart from identifying initiatives in industrialised and industrialising regions as well as countries in transition, care was taken to include policy led (top-down) and grassroots (bottom-up) initiatives in the database.

The primary focus or theme of the initiatives was also deliberately selected for diversity - initiatives that were chosen for further analysis included those with a focus on carbon and/or global climate change-related topics, water, agriculture, food and microfinance. The nature of the activities undertaken within these initiatives was also diverse and included soil conservation, microfinance, environmental education and attempts at voluntary simplicity.

The 4-step initiative selection process initially involved creating an initial draft list of about 200 initiatives which were of interest. These (mainly environmental sustainability-themed) initiatives were suggested through a process of brainstorming by the research team and a review of general sustainability and development literature. In step 2, data was collected about a short-listed 51 initiatives that were selected from this larger list according to their interest to the researchers regarding Convergence related principles and diversity of approaches towards Convergence. Following this (step 3), the

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[30] A sustainability initiative as understood in the CONVERGE project is defined as being an act and/or action intended to solve the problems created by unsustainable anthropogenic action. CONVERGE initiatives are also about creating opportunities for putting the principles of (1) living within ecological limits and (2) equity into practice. Initiatives may take the form of policies, community initiatives and even personal/household level action.

dataset/number of initiatives was further reduced in size to 28 through an evaluation process with three main criteria: 1. How the initiatives addressed the issue of limits/contraction (if and how they recognised resource, ecosystem, or planetary limits in their documentation or activities and if they employed limits/contraction targets and indicators); 2. If and how they addressed equity/convergence in their documentation or activities and if they used any indicators to do this; and, 3. Their scale and potential impact. Other factors included whether initiatives represented both industrialized and industrializing countries, the grass-roots and community (bottom-up) and the policy level (top-down). The final set of initiatives contained examples from Hungary, Iceland, India, Sweden, and the UK as well as from India, Bangladesh and the U.S.

In step 4 of the process, detailed data about these initiatives was collected between September 2010 and July 2012 using a semi-structured survey format and a diversity of investigative techniques including field work, unstructured and semi-structured interviews and document reviews. Data was collected about Convergence elements, potential barriers and challenges to the success of the initiatives and their potential for replicability and up-scaling and other factors (location of the initiative, beneficiaries and participants, organisational structure, presence of limits/contraction and equity/convergence related features, indicators, evolution of the initiative, observations about hindering and facilitating factors and a preliminary assessment of how the initiative's activities relate to Convergence criteria and principles, etc.). (Vadovics et al. 2012)

The Convergence Mapping System developed to illustrate the features of these initiatives uses an ascending 5 item scale which can be used to quantify activity in the areas of 'limits/boundaries/contraction' and 'equity/convergence'. The 5 item scale for 'equity/convergence' borrowed on work by Agyeman about 'just sustainability' (2005) as well as work by Roderick and Jones (2008). The limits/contraction scale was created based on the authors' earlier work (Vadovics 2009) and following a literature review process. Using the scores for the initiatives for both scales, an initiative could be mapped on a 2 dimensional space. This process was repeated for all 28 initiatives. Initiative appraisals are necessarily somewhat subjective but nonetheless illustrative. The scales used in the mapping system are provided in the Appendix along with the Convergence Map of the initiatives.

5. Results and Discussion

It should be re-emphasised here that the aim of this research was not to assemble and analyse a representative database of initiatives, but to illustrate the diversity of existing approaches to Convergence. Thus, some of the 28 initiatives examined had as their goal reducing the use of resources; others had a focus on promoting equity. Some address both issues simultaneously and are therefore good examples of coupling of contraction (reduction in resource use and respecting planetary limits) and convergence (promotion of equity) processes. (Vadovics et al. 2012)

Even though the initiatives researched show great diversity, they can be clearly located in the top right hand quadrant of Figure 1 by using the 2 scales, and thus help to understand the concepts as well as practice of Convergence. Below we introduce four of the initiatives studied. More detailed descriptions of each of them can be found in Vadovics et al. 2012, freely available online.

5.1. Fownhope Carbon Reduction Action Group (CRAG)[31]

Fownhope CRAG is a small, voluntary, grassroots carbon rationing action group1 set up in 2007 in the village of Fownhope in the West Midlands, UK, with the primary goal of reducing the annual carbon footprint of its members. At the same time, Fownhope CRAG was part of the at-the-time very active broader CRAG network (Andrews 2008, Fawcett et al. 2007, Howell 2009) and explicitly recognises the risks posed by raised levels of atmospheric carbon dioxide. Members support the goal of reducing their personal carbon footprints to a sustainable and equitable level.   Individual Fownhope CRAG members measure their progress and attempt to reduce their carbon footprints. Members of the CRAG decide themselves about all issues, including but not limited to the following:

- the methodology for measuring their footprints (based on the general CRAG calculator they developed their own calculator);
- setting of reduction targets;
- the nature of community events they participate in and support (e.g. tree-planting events).
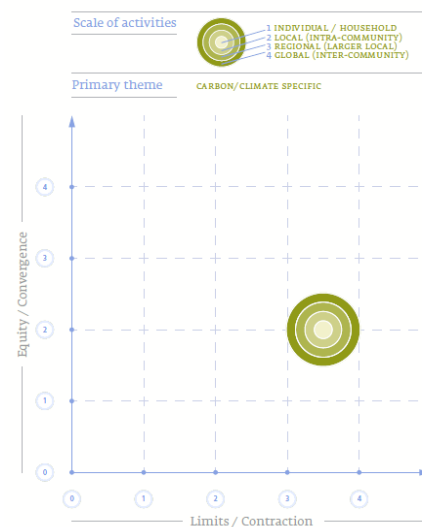
During the years, the scope of the CRAG has widened from the original focus on carbon reduction and CRAG members have become involved in a number of related projects and feasibility studies into sustainability activities such as provision of locally sourced alternative energy (biomass, solar, and hydro), decreasing food miles and wider sustainability goals. Fownhope CRAG is also involved with the Hereford in Transition Alliance, which is a loose association of groups within the county who have similar aims.

5.1.1. Convergence elements

The primary aim of the initiative is to contract the carbon footprint of the CRAG members in all areas of household consumption, not only those related directly to energy. However, members of the CRAG also "support each other in reducing those footprints, sharing skills and knowledge in lower carbon living and promoting awareness and practical action in the wider community"[32].

Practical actions they have been involved in include planting 350 trees around the village of Fownhope (to correspond to the 350 ppm target) , participation in the now annual local h.Energy[33] events (a festival to celebrate living more sustainably) and actively promoting the use of renewable energy in their locality.

CRAGs were started because people realized that carbon emissions needed to be contracted in the richer part of the world as well as 'converged' – made more equitable worldwide. CRAG members urge governments to adopt a universal and equitable framework to achieve this, while in CRAGs they are implementing this approach at a community level. They form local groups to support and encourage one another in reducing our carbon footprints towards a sustainable and equitable level as well as measure their progress against carbon allowances.

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[31] Each of the initiatives are introduced in more details in Vadovics et al. (2012) available from http://www.convergeproject.org/sites/convergeproject.org/files/CONVERGE_ebook_EquityWithinLimits_in itiatives_doublepageprint.pdf (last accessed August 2016)

[32] http://www.fownhopecrag.org.uk/ (last accessed Aug 8 2016)

[33] http://www.herefordshirenewleaf.org.uk/page/henergy (last accessed Aug 8 2016)

This belief is evident in the way Fownhope CRAG operates as well as in the actions its members implement:

- everything in the CRAG is decided on in a participatory manner;
- the CRAG participates in and initiates local community events and activities to share knowledge and information;
- members of the CRAG also voluntarily supported a tree-planting project in the Gambia, which concerns planting the Jathropa tree to combat climate change-induced desertification as well as to produce a renewable form of heating oil. This planting project, although it was later reconsidered, illustrates how responsible citizens in a rich country can voluntarily support a community in a poorer country as well as showing how equity may be promoted through voluntary support for environmentally appropriate projects which offer additional socio-economic benefits.

5.2. Covenant of Mayors (CoM), the cities of Genoa and Reykjavík

In 2008 the EU Climate and Energy Package was accepted and the European Commission launched the CoM. The vision of its signatories for 2050 is "accelerating the decarbonisation of their territories, strengthening their capacity to adapt to unavoidable climate change impact, and allowing their citizens to access secure, sustainable and affordable energy.".[34] Municipalities must play a key role in mitigating carbon emissions - it is estimated that 80% of Europe's energy consumption and CO_2 emissions are associated with urban activity[35]. CoM signatories are required to create adequate administrative structures for making municipal carbon reductions, undertake a Baseline Emission Inventory (of energy consumption and CO_2 emissions) and present, implement and monitor results of the city SEAP (Sustainable Energy Action Plan). Genoa joined the CoM programme in 2009, and Reykjavík in 2011, and both have officially accepted and published SEAPs.
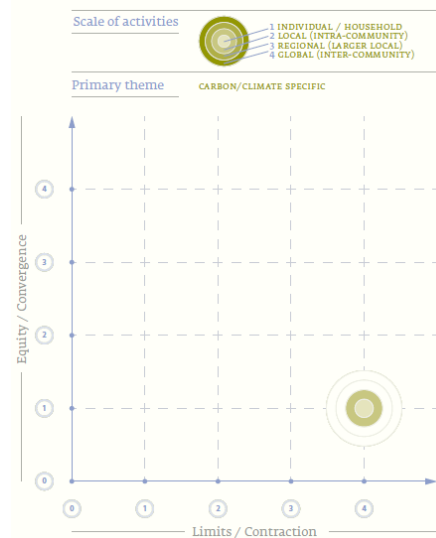
5.2.1. Convergence elements

As signatories to the CoM, the municipalities of Genoa and Reykjavík explicitly recognise limits and goals in line with the 2007 unilateral commitment by the EU to cut Europe's emissions by at least 20% of 1990 levels by 2020 to attempt to limit climate-change induced global average temperature rises to max. 2°C.[36] They both prepared an inventory of current energy use and CO_2 emissions and have defined their own programmes, goals, indicators and quantitative targets for reducing urban emissions and have pledged to report on progress.

The literature on and programmes of these initiatives do not explicitly refer to equity or social justice. However, there is some focus on procedures for increasing stakeholder involvement in the sub projects of the Genoa CoM: it recognises that reducing "emissions will be achievable only if local stakeholders, citizens and their groupings share responsibility" thereby "allowing citizens to benefit directly from the opportunities and

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[34] http://www.eumayors.eu/about/covenant-of-mayors_en.html (last accessed August 2016)
[35] http://www.eumayors.eu/index_en.html (last accessed August 2016)
[36] Please note that these targets were applicable at the time of conducting the research. Since then, they have been updated. See more at http://www.eumayors.eu/about/covenant-of-mayors_en.html

advantages offered by a more intelligent use of energy...".[37] One of the 7 primary themes of the Reykjavík SEAP is awareness-raising activities; city employees and schoolchildren are specified as being targets. In this sense, the rights of Reykjavík's citizens are being considered procedurally in terms of consultation, transparency and accountability of the SEAP implementation process and substantively in terms of the benefits of infrastructural and energy-related improvements to the city. Very similar elements are found in the Reykjavík CoM.

5.3. Grameen Bank

The Bangladeshi-based Grameen Bank is a microfinance and community development organisation (established as a bank in 1983) set up to target the rural poor – it was founded with the primary goal of alleviating poverty through providing micro loans to individuals excluded from using traditional banking services. The initiative was originally started by Muhammad Yunus who lent his own personal money to poor householders in the rural Bangladeshi village of Jobra in 1976.

Grameen bank provides zero collateral micro-loans to the low-income demographic, primarily rural Bangladeshis (usually women – who make up 97% of the current loan portfolio). Loans are typically in the order of 100-1000 Taki (a few dollars to tens of dollars) and lenders are supported through peer pressure to abide by the principles of solidarity lending and a set of values known as the 16 Decisions[38] (which include prescriptions about environmental protection and promoting social justice).
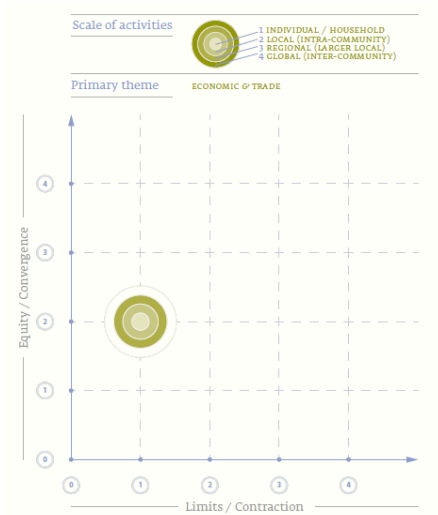
5.3.1. Convergence elements

The primary aim of the initiative is socio-economic empowerment. Escaping from poverty may mean that the ecological footprints of Grameen borrowers increase rather than decrease. It is understood that 'equity within planetary limits' requires a decrease in the environmental footprints of some citizens but corresponding growth in others. The literature of the initiative does not specifically refer to ecosystem limits but the 16 Decisions which each Grameen borrower pledges to abide by do cover environment-related issues (such as limiting family size, keeping the environment clean and the use of disease-limiting sanitation facilities).

Although intra and intergenerational equity are not specifically referred to in the initiative literature, Grameen has equity/convergence at its heart, seeing credit "as a human right". The initiative explicitly seeks to empower the low income fraction of the population it works with according to the principles and practice of social justice. The principle of social justice is also embedded horizontally through the initiative in the 16 Decisions, where borrowers pledge to work with each other in a democratic and ethical manner towards common goals.

[37] http://www.eumayors.eu/about/signatories_en.html?city_id=1842&seap (last accessed August 2016)
[38] http://www.grameen-info.org/index.php?option=com_content&task=view&id=22&Itemid=109 (last accessed August 2016)

5.4. Climate-Friendly Wekerle (Transition Wekerle)

The Climate-Friendly Wekerle initiative is the first transition initiative in Hungary[39] and is located in a Budapest residential area called the Wekerle estate. As the design of the estate was influenced by the British garden city movement of the late 19th century, Wekerle offers the environment of a small town in the metropolis; a friendly, green area that offers a basis for thriving community life. The initiative was started by a group from the largest local NGO (Wekerle Társaskör Egyesület). Their aim is to inspire local residents to shift towards a more sustainable way of living and to make the local community the foundation of this process. They wish to build on local resources, needs and ideas while adapting the transition model to their ambitions.
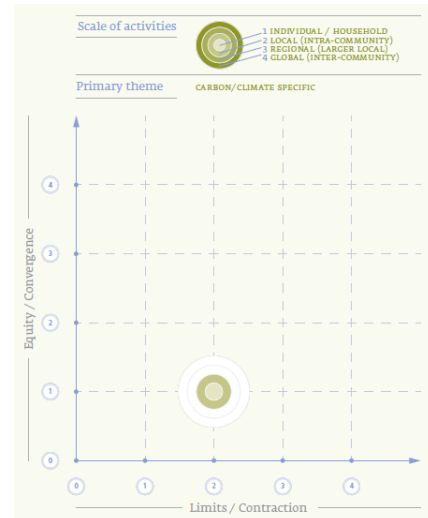
The long-term objective of this initiative is to reduce the food and energy dependency of the Wekerle estate by reducing consumption and by setting up infrastructure for community composting, an organic box scheme, 'edible gardens' and a local food market. They also aim to localize services, reduce waste, support direct trade with nearby (within 50 km radius) producers and to promote cycling and modes of community transport. The whole process is designed to be realized with the cooperation of the local community and be based on active citizen participation in decision-making.

The project is intentionally positive, encouraging and solutions-oriented, even though members of the initiative are aware of the severity of the challenges they face. At the moment of the research (in 2011/12) they are working on catching peoples' imagination through community events and "clubs" such as Green Saturdays, Energy Brigades, Gardening and Knitting Circles, and flea markets.

5.4.1. Convergence elements

The long-term aim of Climate-Friendly Wekerle is to reduce consumption and environmental impact. At the moment, they are mostly engaged in carbon footprint reduction initiatives such as their own Energy Brigades programme which assists people to insulate their homes, or EnergyNeighbourhoods. Thus, a lot of effort has been made towards reduction but concrete reduction targets or carbon quotas have not been established.

The group experiments with the techniques of participatory democracy, operates with a low level of hierarchy and all members have an equal say in discussions over strategic and/or operational issues. The core group of Climate-Friendly Wekerle has also initiated community planning events in the estate to involve local residents in the renewal and design of public spaces.

The overall aim of the initiative is to improve local resilience and self-sufficiency, which includes strengthening the connection between producers and consumers. Thus, the initiative has an influence at the individual, local and regional level. At the moment, apart from the recognition of global challenges (climate change and peak oil), there is no active focus on global equity and environmental justice issues.

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[39] https://transitionnetwork.org/initiatives/talakul-wekerle-transition-wekerle (last accessed August 2016)

6. Conclusions: potential uses of the mapping tool and future development

The initiatives studied in the CONVERGE project form a very diverse group: from an incorporated bank in Bangladesh to a transition initiative in Hungary. They include new and older NGOs, policy initiatives, social businesses, an international research-based initiative and a faith-based network. Still, they all explicitly or implicitly, though to different degrees, recognize the need for Convergence to enable humanity to live equitably within planetary and resource limits.

Apart from being used for descriptive purposes, the results of Convergence Mapping can also be used to identify and evaluate different developmental paths for initiatives. Indeed, the mapping system can be used as a (self-)assessment tool for assisting initiatives as well as organizations to see where they stand in relation to addressing the issues of planetary and resource limits and equity, and how they could move forward.

Similarly, Convergence Mapping could be used to identify (e.g. for funding purposes) further initiatives and projects that help move towards more equity within limits. It could also be used as an awareness-raising and engagement tool to discuss the positioning of different Environment and Development initiatives and organisations to help them reflect on their own efforts and commitment.

Although the tool could be used for these purposes in its current form, there are different ways in which it could be developed further. One obvious way would be to incorporate practice in the analysis process. At the moment, the tool only looks at existing practice that is contrary to the stated principles (see the minus score in the scales), but it would be important to evaluate practice further. This leads to another way of development which would entail defining universally applicable indicators to help the analysis process, especially from the point of view of practice. It would be important to develop a relatively easy-to-use and not overly complicated system of indicators that allows for an easy comparison across different types and sizes of initiatives. There is literature available that could be built on in this regard (e.g. Holden et al. 2014, Leppänen et al. 2012, Raworth 2012, Steffen et al. 2015). The third way for improving the tool would be the addition of a third dimension to the system: well-being or prosperity. Again, there is work available to build on (e.g. Holden et al. 2014, Fritz and Koch 2014).

Finally, it is important to recognize that, supported by recent literature (e.g. Fritz and Koch 2014, Hopwood et al. 2005, Keijzers 2002, Melamed et al. 2012, Raworth 2012), a more holistic approach towards sustainability is needed, one that calls for more integration and cross-fertilization between the social and environmental aspects of sustainability. Further research would be needed with a specific focus on cross-fertilization between limits and equity to investigate the different ways it occurs as well as how it could be facilitated.

Acknowledgments

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Appendix

Scales Used in the Convergence Mapping System

Limits/Contraction

-1 **Mention of** resource, ecosystem or planetary limits or boundaries in core mission statement or in prominent, contemporary textual, or programmatic material **BUT no obvious mechanism for, or attempts to**, reduce consumption of resources or reduce pollution. **Initiative activities may even contribute to increases in resource consumption/pollution.**

0 **No mention** of resource, ecosystem or planetary limits or boundaries in core mission statement or in prominent, contemporary textual or programmatic material. The initiative's main goals are not related to reducing consumption of resources or of reducing pollution in any obvious way.

1 **Implicit.** No explicit mention of resource, ecosystem or planetary limits or boundaries in mission statement. May have limited mentions of limits and resource issues in associated prominent, contemporary textual, policy or programmatic material. However, despite the lack of formal references to limits, the initiative is involved in activities to reduce resource consumption and/or decrease pollution.

2   **Explicit.** Resource, ecosystem or planetary limits or boundaries are mentioned in core mission statement or/and in prominent, contemporary textual or programmatic material and the initiative is clearly engaged in attempts to reduce consumption and/or reduce pollution. Specific quantitative reduction targets or goals may or may not be defined.

3   **Explicit + Targets/Indicators.** Core mission statement/prominent, contemporary textual or programmatic material relates to resource, ecosystem or planetary limits or boundaries and reducing consumption. Specific limits are identified and/or specific contraction targets are detailed. There are transparent and accountable methods for contracting resource use and tracking results (e.g. use of indicators).

4   **Explicit + Targets that are defined based on available (scientific) information** about resource, ecosystem or planetary limits or boundaries. Clear efforts are being made to connect limits-related science with practice. Transparent and accountable methods for contracting resource use and tracking the results (e.g. use of indicators) are in place.

Equity/Convergence

-1   **Mention of** 'equity' or 'justice' in core mission statement or in prominent, contemporary textual, or programmatic material **BUT no indication of activities** relating to promoting equity or justice. **Initiative activities may even contribute to increasing inequality/hindering justice.**

0   **No mention of** 'equity' or 'justice' in core mission statement or in prominent, contemporary textual, or programmatic material. No evidence of an equity/justice/re-distributional focus to the initiative's activities.

1   **Implicit or Limited mention.** No explicit mention of 'equity' or 'justice' in core mission statement. Limited mention (once or twice) in prominent, contemporary textual, or programmatic material. The initiative's activities involve attempts to address the issue of justice/equity.

2   **Explicit mention.** Equity' or 'justice' mentioned and reference given to either intra- or intergenerational equity in core mission statement. Limited mention (once or twice) in prominent, contemporary textual, or programmatic material. The initiative's activities involve attempts to address the issue of justice/equity.

3   **Explicit mention of and reference to both intra- and intergenerational equity** or 'justice' in core mission statement. Limited mention (once or twice) in prominent, contemporary textual, or programmatic material. The initiative's activities have a focus on addressing the issue of justice/equity. Specific quantitative targets or goals relating to Equity may or may not be defined.

4   **Explicit mention + Targets/indicators.** Core mission statement relates to both intra- and intergenerational equity and justice and/or 'justice' and 'equity' occur in same sentence in prominent, contemporary textual, or programmatic material. The initiative's activities have a focus on the issue of justice/equity. There are transparent and accountable methods for fostering equity and tracking the results (e.g. use of indicators) are in place.

Initiatives Map

Scale of activities

1 INDIVIDUAL / HOUSEHOLD
2 LOCAL (INTRA-COMMUNITY)
3 REGIONAL (LARGER LOCAL)
4 GLOBAL (INTER-COMMUNITY)

Primary theme

AG AGRICULTURE, LAND & FOOD
CA CARBON/CLIMATE SPECIFIC
CO CONSUMPTION
EC ECONOMIC & TRADE
ED EDUCATIONAL

FA FAITH
FU FUTURE GENERATIONS
IN INDUSTRIAL & TECHNOLOGICAL
OT OTHER
UR URBAN

Equity / Convergence

Ombudsman for Future Generations [FU]

The Bokor Movement [FA]

The Fairtrade Foundation [EC]

The Converging World [CA]

Navdanya [AG]

SCAD Kitchen Gardens [AG]

Whistler 2020 [UR]

Transition Town Totnes [UR]

Climate Ticket [CA]

The 30 Project [AG]

No Impact Man [CO]

Grameen Bank [EC]

FRANK Water [OT]

Fownhope CRAG [CA]

Eco-Schools Iceland [ED]

CoM Reykjavik [CA]

Greenways Hungary [OT]

Gödöllő Climate Club [CA]

Hägaby Ecovillage [UR]

Pilis LETS [EC]

Climate-Friendly Wekerle [CA]

Vauban [UR]

ZERI [IN]

CoM Genoa [CA]

Voluntary Simplicity [CO]

Farmers Heal the Land [AG]

Low Carbon SW[EC]

EcoTeams [CO]

Limits / Contraction

Multiple gaps in sustainable consumption

Climate justice perspective

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Introduction

Most of the latest studies on household environmental impacts suggest that current unsustainable consumption and behaviour patterns are in charge of most of the existing ecological challenges, such as climate change, water and resources depletion, loss of biodiversity, and others (Hoekstra 2015; Machovina et al. 2015; Tukker et al. 2006; Weinzettel et al. 2013).

At the same time, sustainable lifestyles and consumption patterns become more and more popular all over the world and also in Latvia. But consumers in Latvia are still very price sensitive. During recession, when disposable income decreased by 15%, there was a profound change in consumer attitudes towards shopping - around 52% of people started choosing shops with lower prices, 40% started chasing discounts and postponing purchases, 39% switched to cheaper alternatives, shifted to or continued using second-hand goods (15%), purchased goods directly from the producer (10%), purchased cheaper goods when travelling abroad (4%) or started using emerging collective buying websites (DnB NORD 2011). However, now when the economy is recovering consumption is increasing again.

Therefore it's important to understand how can we encourage and stimulate pro-environmental behaviour? How much of this thinking and talking is actually coming into real action and how much does it improve the environment and supports sustainability? Are sustainable lifestyles affordable by everyone? Which human values and governance approaches support sustainable consumption?

These questions have attracted interest from researchers already for some time. John et al. (2016) has studied the German longitudinal survey on environmental awareness and concludes by suggesting a social innovation-oriented policy as a way of linking policy goals with changes in consumption patterns. It is often agreed that there are numerous barriers of motivation for individual and collective environmental action and that the factors involved in making people willing to reduce environmental damage could be fundamentally different from the factors involved in making people actually take active steps to reduce damage and to improve the environment.

Sustainable consumption has also been studied in the developing countries. Shadymanova et al. (2014) emphasized existing consumer competencies (consumers generally distrust the environmental information provided by the government and NGOs, but trust is primarily apparent in informal relationships), meanings (consumers don't care about sustainability, but they do care about the health, nature, and local food) and materials (there is a little infrastructure available to support sustainable consumption) that enable and impede environmentally sustainable consumption practices in Kyrgyzstan. Many of the studies (Geels et al. 2015; Lorek and Fuchs 2013; O'Rourke and Lollo 2015; Spangenberg 2014) also advocate for strong sustainable consumption arguing that current

efforts that focus on efficiency and market-based solutions are insufficient to solve environmental problems.

Research concerning pro-environmental behaviour, household environmental concerns, and values or sustainable consumption patterns in Latvia has been carried out on a limited scale. Only restricted number of studies and surveys are available. They reveal that most of the people in Latvia do not think their behaviour has a negative impact on the environment and identify several barriers to sustainable consumption, such as the lack of information, perceived consumer effectiveness, difficulties to change habits, and perception of high costs associated with sustainable consumption exist (Auzāne and Elere 2008; EC 2011; SKDS 2008). There is also clear need for changes in the systems of provision, relevant knowledge, infrastructure and resources to facilitate switching to low carbon lifestyles (Brizga 2012; Brizga et al. 2016).

In this paper, we investigate the link between people's environmental awareness, values, life satisfaction and environmental impacts and links it to the governance of sustainable consumption. It's built on public surveys conducted in Latvia at the beginning of 2016 (n-1010). This survey is based on people's responses to a broad range of questions about household values, environmental awareness and behaviour patterns (mostly focusing on housing, mobility, and food) as well as possible choices people could make to decrease their environmental impacts. This paper has been developed as part of the Latvia's State research program SUSTINNO, project "Environmentally friendly and sustainable resource use".

Methodology

This study is built on the public opinion survey, consisting of 67 questions and was based on responses from 1010 persons aged 18 and older throughout Latvia. Respondents were chosen using a random, multi-stage sample design and interviewed during March 2016 via face-to-face interviews at their homes.

The aim of the survey was to identify, compare and analyse people's values, the level of environmental awareness, behaviour patterns, environmental impacts (carbon footprint), life satisfaction, and link them to the question of environmental justice and governance. Therefore the survey was structured around following broad themes:

- General attitudes towards the pro-environmental behaviour and consumption;
- Household environmental behaviour patterns;
- Environmental awareness and willingness to act;
- Household values (using Schwartz's value classification);
- Socio-demographic profile of the respondents.

In our study **environmental awareness** was identified based on the set of 15 questions about environmental values and willingness to act environmentally friendly. Scores were arranged in such a way that fewer points mean stronger environmental awareness. In this case, 15 and 32 points are minimum and maximum points available in the scaling.

Carbon footprint was used to indicate household **environmental impact**. 18 questions from the survey were used to calculate the carbon footprint of consumption activities. They were structured around consumption clusters of housing (including energy, water, and waste), mobility, and food. These clusters were selected as they are responsible for 70-80% of all the household consumption environmental impacts (Brizga et al. 2016; Tukker et al. 2006). For the benchmarking, we used the results of the latest multiregional input-output analyses of household consumption carbon footprint in Latvia (Brizga et al. 2016).

Additionally, we sought to look at the role **social values** play in distinguishing between the pro-environmental behaviour of different social groups in Latvia. Using Schwartz value classification (Schwartz and Bilsky 1990; Schwartz 1992, 2003; Smith 2004) relating to two dimensions, notably 'altruism–egoism' and 'openness to change–conservative', we constructed the questioner to identify 10 dominant values. Similar assessment previously has been done by Stern et al. (1995), Cameron et al. (1998), Corraliza and Berenguer (2000), Barr and Gilg (2006), and Howell (2013) arguing that those most likely to undertake pro-environmental actions were 'altruists' and 'open to change'.

However, in this paper, we did not use carbon footprint data and the results of the households' value survey as we are still computing the data. The paper will be updated with new results after the SCORAI workshop in August 2016.

To test for significant differences between people depending on their environmental awareness, pro-environmental behaviour, environmental impacts, life satisfaction, and income levels we did **cluster analyses** aiming to reveal groups which are homogeneous internally (i.e. members are similar to one another) but heterogeneous externally. Cluster analysis was conducted by SPSS 23 using the TwoStep K-means. We conducted analyses for solutions with four clusters, the average silhouette measure of cohesion and separation being 0.6 and a rating of "fair". For the future, we are also planning to visualize the relationships between the clusters using multidimensional scaling (MDS) as it shows overall distances between clusters more graphically.

Results

Correlation analyses demonstrate that there is a statistically significant link between environmental awareness and housed income (Pearson correlation .132). Highest environmental awareness is in the group with income between 601 and 1000 EUR a month (see Table 1). Environmental awareness also correlates with household education, housing type, gender, and geographical region. Women and people from Latgale (a most underdeveloped region in Latvia) seem to have higher environmental awareness. There is also higher environmental awareness for those living in the countryside rather than in the capital Riga or other towns; this is also reflected in the housing – higher environmental awareness for those living in the single family dwellings and dwellings with few (3-10) apartments, compared to those living in the multi-apartment buildings. Similar results were obtained by the study looking at the people climate awareness (BEF 2016).

Table 1. Environmental awareness and housed income (number of respondents)

| Monthly household income \ Environmental awareness	0 - 300	301-600	601-800	801-1000	1001-1300	1301 and more	n/a	**Total (n)**
15-19	6	7	14	8	6	11	11	**63**
20-23	36	73	59	91	48	40	98	**445**
24-27	30	64	45	48	58	31	85	**361**
28-31	11	20	10	15	10	17	56	**139**
Total (n)	**83**	**164**	**128**	**162**	**122**	**99**	**250**	**1008**
Average	**23.5**	**23.5**	**22.8**	**22.9**	**23.7**	**23.3**	**24.4**	**23.5**

Note: Strong environmental awareness between 15 and 19; average positive environmental awareness between 20 and 23; average negative environmental awareness between 24 and 27; strong negative environmental awareness between 28 and 31.

Results from the **cluster analyses** demonstrate that society can be divided into four groups (see Table 2) depending on the respondents' environmental awareness and readiness to act. The ratio between the largest and the smallest cluster being 2.86.

The first cluster (17.3%) refers to the people who do not care for the environment and are not ready to take environmental action. Due to the limited income and other obstacles, respondents from this cluster are more likely to live in the smaller apartments, consume meat only ones a week, use public transport for commuting and wood for heating. This significantly reduces their footprint on the planet resources. However, they would readily change these choices to unsustainable in the case of opportunity as they have lowest environmental awareness and are generally less satisfied with their lives. People from this cluster are not sure they could compromise comfort - drive less, become vegetarian, recycle more or use energy efficient equipment. They are also not likely to decrease the indoor temperature in winter, purchase organic food or get involved in environmental actions or learn more about the environment. We refer to this phenomenon as an Action-Value Gap.

Table 2. Results of the cluster analyses

Clusters	Values (n)	Percent (%)	Environmental awareness (average)
Cluster 1	175	17.3%	27.85
Cluster 2	395	39.1%	24.62
Cluster 3	138	13.7%	22.76
Cluster 4	302	29.9%	19.60
Total	**1010**	**100%**	**23.43**
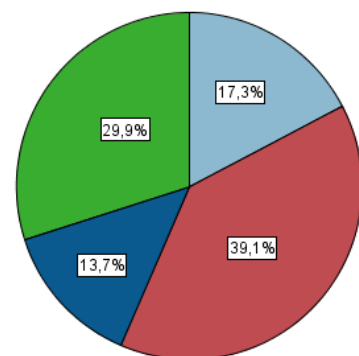
The second cluster is the biggest one (39.1%) and refers to the group of people with average to low environmental awareness but comparatively high life satisfaction. They mostly live in the larger apartments than people from the cluster 1, use some energy efficient equipment, recycle, regularly consume animal based products, sometimes purchase organic food, use local food products, and fly more than others. However, they would not be ready to decrease consumption of animal-based products, drive less car or switch to energy efficient car, decrease indoor air temperature in winter, or switch to renewable energy for heating, and decrease use of electric equipment. They are also not ready to learn more about the environment or encourage others to act environmentally friendly. Nevertheless, they would be ready to recycle more and do heating insulation for their houses.

Cluster 3 is the smallest one (13.7%). These are people with average environmental awareness level and life satisfaction. In comparison to the second cluster they are more likely to live in the larger apartments, rarely recycle, eat organic food, use energy efficient equipment, decrease amount of waste, and perform heating insulation of their houses. But they are not ready to decrease their meat consumption or indoor temperature. They would be ready to learn more about the environment, but not prepared to encourage others in pro-environmental behaviour or cooperate with neighbours to share tools and equipment. These are people more likely to live in the Riga agglomeration, where many

families moved as part of the urban sprawl and increasing the availability of the real estate loans during the last 10 years.

People of the **Cluster 3** are aware of the importance of environmental issues but are unable to practice sustainable lifestyle due to limited opportunities and abilities or barriers, such as lack of time, knowledge, financial resources, etc. or habits and routines, convenience, perceived consumer effectiveness. Internally this group is most diverse. Part of this group may be ready for proactive behaviour and to participate in the building of sustainable community, communal use of goods and de-commercialization. Others, on the other hand, rely on eco-labelling and choose environmentally friendly products and services while retaining their needs and socio-economic conditions.

In literature, this phenomenon has been widely stated as Value-Action Gap (Blake 1999; Burford et al. 2015; Owens 2011), which exists between one's knowledge of what should be done on the one hand, and the actual behaviour on the other. This gap arises because many factors other than values influence behaviour, and these may constitute psychological or situational constraints on the action (Howell 2013). This gap is also clearly visible in Latvia's society as the surveys showed that:

- 62% of people in Latvia are concerned about the climate change, but only 52% of them are also saying that they are ready to use more public transport. In the same time, 25% of those worrying about the climate change would not be ready for public transport instead of private cars;
- While 79% respondents say they are ready to buy environmentally friendly products even if they are more expensive, only 16% have actually done it during the month before the survey;
- Those interested in sustainable lifestyle use less public transport (63.5%) than those who are not interested (69.1%).

Cluster four (29.9%) is the one which cares about the environment and practices sustainable consumption in everyday life. They are also comparatively satisfied with their lives and live in the larger houses, frequently use energy efficient equipment, and most of them recycle. Organic and local are important factors when choosing food. They would be ready to eat more organic, decrease consumption of meat, and drive less, use more energy efficient vehicles, recycle more and decrease the amount of waste and indoor air temperature, insulate their houses as well as learn about environmentally and encourage others to act more environmentally friendly.

People of the cluster 3 and 4 are more likely to be a woman (58 and 64% respectively). People from Riga are more likely to be in the cluster 1 and 2, but people from Latgale are more likely to be part of the cluster 2 and 4. Urban population is more likely to be in the cluster 2, but rural population seems to be more environmentally aware (cluster 3 and 4).

Discussion and Conclusions

Many of the answers have suggested that people with higher environmental awareness should be more likely to engage in sustainable lifestyles and have lower environmental impacts. However, there is a complex of interactions of psychological, social and physical factors in the production of behaviour (Stern 2000), and as this paper presents a possible means by which conceptualise the discrepancy between environmental awareness and behaviour or environmental impact.

Research findings demonstrate that household behaviour in Latvia is driven by a complex set of factors and when dealing with household behaviour governments should take into account the heterogeneity of society. Tailored **policy approach** is usually preferred over "shotgun approach" (Defra 2008; Mckenzie-Mohr 2000; Nesbit et al. 2015; OECD 2016) to bridge multiple behavioural gaps and overcome sustainable consumption barriers. Such

an approach would increase the efficiency of environmental policy interactions used to stimulate pro-environmental behaviour as they are more specifically targeted to different social groups which each have different values, norms, and abilities of environmental behaviour.

Based on the two dimensions of the cluster analyses, namely environmental awareness and behaviour, we can construct 4 distant groups (see Table 3) of people reflecting different environmental values, levels of awareness and willingness to act. The range of pro-environmental behaviour is quite large and environmental concerns may have a higher impact on some behaviour than others. Household environmental behaviour is determined not only by knowledge and attitudes. Social aspects, costs, and infrastructure are also playing an important role. The survey shows that household consumption is driven by price and experience, but health effect and environmental concerns are not so high on the individual priority list.

Table 3. Target groups of sustainable consumption

Behaviour \ Awareness	Awareness – care for environmental issues	Awareness – neglect for environmental issues
Pro-environmental behaviour	Cluster 4 – care for environment and practice pro-environmental behaviour	Group 2 – do not care for environment but practice pro-environmental behaviour
Unsustainable behaviour	Group 3 – care for environment but do not practice pro-environmental behaviour	Cluster 1 – do not care for environment and do not practice pro-environmental behaviour

Consumers, who care for the environment and who are interested in the effects of consumption on the environment and health, are either ready to invest more or to change their behavioural habits and make pro-environmental choices, but there exist a number of barriers which can range from financial and institutional constraints (e.g., lack of income or facilities) to personal factors (e.g., lack of interest in environmental issues and hesitance to compromise on comfort or invest additional time – Cluster 3 and 4).

Some of the pro-environmental actions are more attractive than others. People are generally more likely to recycle, consume organic food (it should be noted that most of the people do not distinguish between organic and local food (Biologiski.lv 2016)), improve housing insulation and learn more about the environmental questions. These are activities which do not compromise on the comfort. In contrast, people refuse to cooperate with neighbours, and decrease consumption - decrease indoor temperature and consumption of meat, as well as the use of electronic equipment.

When building a sustainable consumption policy, the dependency of consumers' action on their needs, opportunities and abilities need to be taken into account. These factors work differently in different consumption sectors, different target groups, and depend on the specific environmental aspect and on the effort required. For example, the majority of respondents admit that it is the price and quality of products rather than products' impact on the environment or health which are the key factors determining their choices. Others, however, may be more concerned about the use of genetically modified organisms (GMOs) in food and they are ready to pay a higher price for products free of GMOs, while at the same time being indifferent to vehicle-generated air pollution or climate change.

When dealing with household behaviour, it is important to remember about the non-linear process and different barriers to overcome. Therefore, to ensure behaviour change, it is important to address the symbolic and social dimension of consumption as well. Also without other policy tools, campaigning on environmentally sustainable behaviour will not deliver significant change. Thus, it is important also to build necessary infrastructure and policy framework to facilitate changes.

The government of Latvia should also become more active in integrating sustainable consumption and pro-environmental behaviour tools in different national policy frameworks and get involved in international processes like UNEP and Marrakesh process, dealing with sustainable consumption issues.

Acknowledgements

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Discussant Contribution

Grappling with social justice

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The papers in this session address issues of social justice. I would like to start citing Barbara Muraca in the call for papers for this workshop:

"Social Justice, access to resources, distribution of wealth and income, and social recognition are at the core of sustainable consumption; how can the discussion of SC leave the confined sphere of educated middle class LOHAS and become a battleground of communities? How can issues of equality be addressed, from the perspectives of both over- and underconsumption? What kind of transformations of space, time, and relations are needed and at what scale? What can we learn from practices, social experiments and alternative projects beyond the microscale. What role do cities/ regions play?" (Citing Barbara Muraca).

The papers in this session address these questions in a variety of ways. Social experiments and alternative projects have been mapped by Edina and Simon, who have developed indicators to measure intentions on both the dimensions of social justice and ecological sustainability; Filka has looked into the personal drivers of people engaging in non-commercial sharing economies; and Janis has developed a typology of environmental awareness and behavior based on a survey in Latvia.

Below I will review these papers in more detail; but first I want to make a few more general remarks.

We all understand that in order to address over- and underconsumption and social injustice and inequality a cultural, political, and economical transformation is necessary. How such a transformation could take place has been the subject of many debates without so far a clear outcome. We of SCORAI NA have struggled with those questions for the past two years; and so we organized first a series of lectures in Boston, and then a workshop to address and discuss these issues. Finally this all culminated in an edited volume (to be published early 2017) in which we tried to address the questions: what a theory of change beyond consumer society could look like; and how such change could happen. We (Halina, Maurie Cohen, and I) drew in our introduction of this book on four theoretical traditions: the theory of strategic action fields (Fligstein and MacAdam); the framework of socio-technical transitions, the analyses of Eric Olin Wright in his book "Real Utopia"; and the works by Michael Polanyi. In a certain way these theories complement each other. Without going into any detail: from the case studies and theoretical studies in this book; and especially rereading the work by Polanyi, we came to the conclusion that transformative change in the final analysis necessitates a social movement (in Polanyi's terms a "second movement"), which according to Polanyi emerges as a reaction to the "first movement" of market fundamentalism and globalization led by neoliberal ideologies of free market. Such a second movement, which, if successful, could be supported by governments, would address entrenched power relations, economics, institutions, and culture; and would be led by an ideology quite different from neoliberal market fundamentalism: an ideology of human- and ecological-centered development and cooperation rather than cut-throat

competition. It is quite possible that the social movements of the sharing economy and of social innovation, and other social projects as described by Edina and Filka and others in this workshop could contribute to such a second movement; but unless they coalesce into a much broader and deeper movement of social change these activities may remain marginal as they have been during the last 40-50 years.

I now turn to the submitted papers:

Filka Filikova: The economics of sharing: an empirical study in Barcelona (Spain) and Bulgaria

This paper looks into the psychological, cultural, and social determinants and drivers of sharing, based on a survey of participants in non-commercial sharing activities and experiments in (urban) Barcelona and (rural) Bulgaria. Filka does a great job defining and analyzing theoretically various forms of sharing. She also unravels the drivers of sharing in rational economic determinants (saving time and money vs. transaction costs) and social-psychological determinants (creating social and ecological benefits vs. issues of trust and annoyance). She also discusses determinants like life stage, marital status and income level in relation to participation in sharing activities. What I found really interesting is that sharing requires a certain level of trust; but that it also may help to build trust. There are interesting differences between urban Barcelona (more trust and sharing) and rural Bulgaria (less social capital and less sharing). In all, the paper gives an interesting and scientifically well-founded overview of motives and drivers leading to sharing; but much less insight in what is necessary form larger-scale transformative change and for the building a "second movement".

Edina Vadovics and Simon Milton: Social Justice in a Constrained World: Convergence mapping

The concept of Contraction and Convergence is an interesting approach that has been around for a very long time. Concept Mapping combines the two major aspects of Sustainability: the ecological and the equity aspects. The theoretical aspects are very well developed in the paper: both the ecological limits approach and the equity approach. The authors did an admirable job to summarize the main outcomes of the EU project which was aimed to "map" the two dimensions in a number of case studies. The main aim of their paper is to link the need to reduce resource use with a justice-based approach to address inequity; and to examine various top-down and bottom-up initiatives. The paper shows that by creating a suitable representation it becomes relatively easy to assess, compare, and evaluate very different projects on these two dimensions. In addition, the mapping also shows in graphic form the emphasis on an individualistic vs. local, regional, and global approach; by showing it in concentric circles. I was especially interested in the way the initiatives were rated along the two axes. The appendix was very helpful to get an insight in how this rating was done. However, the rating referred to the project description; not to the actual outcomes.

Unfortunately this mapping does not really help to create some form of integration between the two aspects: they are literally two dimensions which are conceptually separated from each other. Another question I have is the one about the use and function of these maps. I am sure they can help raise awareness among project participants about their own strengths and weaknesses; and by comparing projects to each other to learn how to make improvements. However, it is unclear to me how these maps could translate into policy, action, and systemic change. First policy: it would be interesting to analyze the potentialities of those 28 projects to develop, influence, or implement policies at the various levels from local to global. Among the 28 cases there are various policy initiatives,

for instance developing carbon policies on the local level; but it is unclear to me what mapping could help to evaluate these policies, to improve them, to disseminate them.

Then Action: it would be interesting to use the mapping tool and the projects in an experiment in communicating sustainability towards consumers and other stakeholders. For that, some work needs to be done. Finally systemic change: it is hard to see how mapping could contribute to the systemic changes we all want: for instance a transition towards a degrowth economy that creates less inequality; forms of sustainable consumption; etc.

Janis Brizga: Multiple gaps in sustainable consumption

This paper does not fit very well in a cluster on social justice. It measures environmental awareness and household environmental impacts, as well as pro-environmental behavior and life satisfaction through a survey in Latvia among 1010 persons. This survey also measured social values; but neither the data on environmental impacts, nor those on social values could be used in this version of the paper.

Janis performed a cluster analysis which resulted in four rather homogeneous groups, which differ a lot from each other on two dimensions: environmental awareness and behavior. The most interesting cluster is cluster two: low environmental awareness but relatively high life satisfaction (and what remains implicit in the analysis a rather high environmental impact lifestyle).

The paper confuses me because the matrix in figure 3 (awareness vs. behavior) which maps the four clusters is not consistent with the description of the 4 clusters (which describe sometimes life satisfaction, sometimes not). The paper illustrates the well-known attitude-behavior gap; and it also affirms that different policies are necessary to address different lifestyle groups. As far as I can see it does not address issues of social justice.

In short: each of the three papers could be further developed by asking the following questions: how could the described activities and analyses contribute to systemic change; and how could they contribute to building a "second movement".

Note taker report

Grappling with social justice

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Emerging general topics

The session focused on crucial questions like how social justice relates to sustainable consumption, what perspectives need to be taken into account, what transformative tools are currently available towards more equitable forms of consumption, how we do quantify and qualify what is meant by social justice in a constrained world and what lessons we can learn from differing contexts.

General discussion focused on the following issues: (a) How to reframe the issues of sustainable consumption into a different language and generate a 'second movement' of real change? (b) How to include the previously neglected social processes into the debate and decision making? (c) What to do in order that the real questions are asked?

According to the discussant, the language of limits did not bring any or enough progress, this is why reframing these issues into a different language is necessary. Related to theories of social change a crucial question is how social change beyond sustainable consumption could take place. Current theories complement each other. The lesson is: we need a second movement which is different from neoclassical, liberal market fundamentalism. The question related to all papers is: what is their contribution to systemic change and to this second movement.

As the title and the content of the session strongly related to social justice, consideration of previously neglected social processes – instead of the economisation of everything – was suggested and discussed, as well as the risk to make poverty acceptable and misuse of the „degrowth" concept to label it as 'hiding behind poverty' was emphasised.

Another fundamental question of the whole debate on sustainable consumption was raised in terms of our knowledge which does not seem help us get further from where we are right now. The real questions should be formulated and asked.

Main discussion points on the paper by Filka Sekulova

In the discussion the theoretical analysis of the types and empirical testing of motives of sharing were emphasised as strengths of the paper and presentation. The trust-related issue is crucial and should be given more attention in our future. The paper was aimed at conceptualising justice, but the language of environmentalism was dominating and several social actors and layers were missing from the two surveys.

One of the main related questions is how effective those ways of sharing are and could they contribute to this 'second movement'? The practices of sharing are part of the multiple elements in the puzzle – there is no clear answer yet. If we ask how sharing will contribute to social transformation, the process of sharing seems more interesting than the results.

Some challenges of sharing were also discussed, including the time, energy and attention which sharing needs and the possibility of a lacking demand in the society or the historical and cultural impacts on sharing. In Bulgaria, people had to share which means that not to share is a progress, while in Barcelona it is voluntary, fancy and fashionable – although time-consuming. Emotional intelligence is here more important than just focusing on intelligence. We also have to look behind the scenes: even if sharing initiatives look appealing and sustainable, are they in principle, and in praxis really sustainable?

Some positive examples were also mentioned, e.g. about the famous football player who gives away everything voluntarily and lives in a van, creating a new movement with his behaviour. Those positive examples should not be forgotten.

Main discussion points on the paper by Edina Vadovics and Simon Milton

Discussion focused on the mapping technique and the methodology of self-assessment in terms of how it reflects reality. The author emphasised that although the mapping was based on self-assessment, responding entities were not high enough on the map and that is the reason why there is no change or insufficient change. Feedback was given to the participants who articulated that they realise it is not enough what they are doing. The mapping tool can function as a mirror for further development, so it can serve as a tool in the transformation process. Habits should be changed and we have to move away from being individualistic. Qualitative methodologies may have a bigger added value in social issues that quantitative surveys we often use.

The question arouse whether it really helps us in this integrated social movement as it is a tool-based assessment and not a problem-based assessment. It has a reason to think further which problems could be solved by the mapping.

Related to the problem of no change or insufficient change, the role of carbon footprint was discussed. The authors stated that we often do not know about our own footprint and we do not know how or do not ask ourselves how to make progress. Today, carbon footprint is in correlation with household income, it can be be directly derived from it which means that we need to ask and learn from the people who live on a very small footprint in our modern technological society and who maybe never heard of sustainability.

Main discussion points on the paper by Janis Brizga

The discussant claimed that the paper focused more on environmental attitudes and behaviour than social justice but the cluster analysis was useful. The question arises: what can we do with these four clusters of people? It is a clear challenge that high environmental awareness correlates with high carbon footprint. It may be partly due to the behaviour-impact-gap and makes a comparison between countries reasonable, but partly to factors like internal motivations, social environment, physical environment which do not allow you to change (no smaller flat is available, etc.). However, knowledge is important, especially in countries where it is still a habit, a tradition to bring waste to the forest. Due to the survey, the case studies and interviews, it is not only income which drives higher footprint but also the number of people in the household. There is a need for further investigation in the issue.

III

Implementing the limits approach

Limiting energy consumption while considering equitable distribution

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Introduction

There are several ways of motivating sustainable consumption in the society from consumer awareness raising, through giving appropriate price signals, to changing business practices. However, empirical evidence suggests that such efforts have not led to an absolute decoupling in resource use on macroeconomic level yet. Thus scaling down the economy and meeting the target of sustainable management of natural resources, which latter is also part of the Sustainable Development Goals (specific target under goal 12) as well as the EU resource efficiency policies, remains a challenge.

Limits to biocapacity[40] of a region or of the world as well as the minimum material/ecological requirements to sustain human life are setting the biophysical limits to resource use in absolute terms. Humanity uses, however, more resources than can be regenerated (EEA, 2015). Nevertheless, unsustainable resource use driven by unlimited economic growth has not delivered social justice, and inequalities are rising(OECD, 2015). But public policies still do not send clear signals to change these trends and find new ways for sustainability transitions. This seems to be the case despite the fact that consumption trends have been coupled since WWII with neither a clear rise in subjective well-being, nor reduction in inequalities(Tóth, 2013). The currently dominant market economic structure is responsible to drive these trends of unsustainable resource use patterns and the unfair share of benefits arising from resource use despite all recent achievements in eco-efficiency. Therefore, the need to re-adjust our economic model to our environmental space while taking into account social justice and equitable allocation of resources are desirable and unavoidable.

In order to solve this complex challenge, a systems approach is needed to address both unsustainable resource use and the unfair allocation. Without a guiding vision of sustainability it is not possible to target any single issues of global concern effectively not to mention modelling this complex and interdependent array of ecological, economic, and societal issues (Luda, 2013).It is from this vein that one of the founding fathers of ecological economics, Herman Daly (1992) proposed to conceptualize the three main issues any sustainability science in general and ecological economics in particular should be prepared to tackle. Daly(1992) suggested to use the terms of sustainable scale, fair distribution and efficient allocation. Ecological economics accepts all three issues as of significance in their own terms, but interrelated. Following a systems approach, it seems clear that sustainable scale (living within planetary boundaries) is the primary issue. Any sustainable society and economy can only be achieved by respecting the ecological limits of planet Earth. Since all economic activities gain meaning in particular social contexts, the

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[40]Biocapacity refers to the capacity of a given biologically productive area to generate an on-going supply of renewable sources and to absorb its spillover wastes. Unsustainability occurs if the area's ecological footprint exceeds its biocapacity. Source: Greenfacts

economy should be designed institutionally to respect societal concerns, including some conceptions of social justice. Consequently, the issue of fair distribution prevails over that of economic efficiency. In other worlds, there are social limits to growth (Hirsch, 1973).

This systems approach has some clear parallels with a Polanyian embeddedness thinking (Polányi, 1944) in the sense of imagining the biosphere as the larger system where the other systems, in a hierarchical order, the social and the economic systems, respectively, are embedded. Many other commentators(e.g. Gyulai, 2010;Fleming and Chamberlin, 2011)share the view of ecological economics and developed specific policy tools to set an absolute limit on energy use and reach out towards an ecologically sustainable scale, fairer distribution, and efficient use of energy resources.

This paper reviews a policy tool proposed for energy capping and evaluates its potential to deliver integrated solutions to reach sustainable scale, fair distribution, and efficient allocation of energy resources as called for ecological economics. We chose this proposal aiming to set absolute ceiling for energy use, since energy is the most overarching resource use having effect on all other resource use. This paper is based on the assumption that there is enough evidence on the need for absolute resource use reduction globally (Fischer-Kowalski et al., 2011) A further assumption is that it is required to take account of the social justice consequences of such a reduction in order to work towards sustainability.

The analysis presented here suggests that the environmental impacts of the presented scheme would contribute to reach sustainable scale as defined by ecological economics. The scheme has, at the same time, profound implications for social justice by delivering varied distributional impacts to different groups of the society.

Resource Use Capping in Ecological Economics

The three issues, which ecological economics originally sets to target are sustainable scale, fair distribution and efficient allocation. The first concern: sustainable scale refers to the amount of resources extracted and traded in total due to global economic activities. The physical limits of our globe, which are currently far trespassed (Rockström et al., 2009), define the scale of sustainable resource use – it constitutes an absolute limit to any kind of physical growth. In this sense, ecological economics follows a Malthusian (Malthus, 1798) logic of absolute scarcity, instead of a Ricardian one of relative scarcity (Ricardo, 1911). This clearly separates ecological economics from environmental economics, the latter being an applied microeconomics operating within the realm of relative scarcity. Sustainable scale eventually brings in a concern for the future and non-human living and non-living beings. Thus, it has a temporal (inter-generational) and a non-anthropocentric aspect.

The second issue is the intra-generational distribution of resources. The benefits deriving from natural resource use also requires an ecological-economic analysis and management considering that a fair distribution and a shared notion of social justice are also constitutive elements of sustainability. Obviously, there are competing conceptions of social justice at hand and it is not at all clear in which societal context which conception of justice prevails, or should prevail, if deliberated upon by citizens.

The third issue of ecological economics acknowledges the relevance of free markets in delivering efficient economic outcomes as mainstream economics argues for and models it. In case of market failures and missing markets, mainstream economics proposes some forms of collective intervention in order to correct failures and/or create markets that operate efficiently. Not surprisingly, proposals for resource, including energy use capping include to some extent the application of market mechanisms for the sake of resource-efficient outcomes.

The three concerns however may not be entirely independent as originally Daly seemed to be claimed (Daly, 1992). In contrast, other researchers (Prakash and Grupta, 1994) suggest first setting the scale, then letting the market achieve effective allocation through the use of the price mechanism and then calling for a form of collective intervention to correct, or compensate for, any undesirable distributional outcomes through the use of public policy tools (incl. fiscal instruments). As scale comes first and also due to the fact that scientific literature has been dealing with this concern most frequently, in the following paragraphs we summarize the articles touch upon sustainable scale.

When identifying the critical sustainable scale, intra-generational (space) and inter-generational (time) issues of scale also would need to be taken into account. The former includes spatial scarcity and heterogeneity of allocation and distribution (Jordan and Fortin, 2002). The other is temporal scale with respect to ecological turnover times and the rate at which humanity uses resources and disposes waste, together with how future generations will be affected due to environmental degradation caused by today's activities. Therefore, these two concerns of space and time would need to be taken into consideration when trying to identify sustainable scale.

Others have focused on methods through which the desired economic scale would be achieved. Either the Ehrlichs' equation (I=PAT) (Ehrlich and Holdren, 1971)or the ET=I equation based on the Global Welfare Curve (Wetzel and Wetzel, 1995) show that all economic activity requires throughput thus involves environmental impact, which can be mitigated by appropriate technology, but never eliminated completely. Based on this, Alcott for example classifies strategies to reduce environmental impact according to the I=PAT formula (Alcott, 2009). The research argues for giving preference to direct, left-side strategies over indirect right-side strategies to reduce I(mpact), such as resource depletion and environmental pollution. This would avoid rebound effect and would result in impact reduction. In contrast, lowering any of the 'right-side' factors, those which are found on the right side of the concerned equation (P: population, A: Affluence, T: Technology) causes or at least enables the other two to rise or 'rebound'.

Another approach towards meeting the challenge of scale is to distinguish between maximum and optimal scale (Lawn, 2001). The maximum sustainable scale is the largest macroeconomic scale that can be sustained by a throughput of matter and energy that is within the ecosphere's regenerative and waste assimilative capacities. That is why it has biophysical reference. The optimal scale maximises the net benefits of economic activity, while usually does not include all expenditures, especially social and environmental externalities. Thus it has macroeconomic relevance. These two scales should be harmonized so that the optimal do not exceed the maximum sustainable scale. In line with the optimal and maximum scale dilemma, others (Wetzel and Wetzel, 1995) distinguish between ecological and economic carrying capacity. Ecological carrying capacity considers how many people on Earth live, while the economic one also contains the lifestyles of people with their resource demands.

Degrowth scientists (Martinez-Alier, 2009) argue that economic growth is not compatible with environmental sustainability, thus mainstream economists need to catch up in recognizing the importance of scale in economic theory. There seems to be no other way of modifying the internal structures of a profit driven market economy to a not-at-all growing economy. This is where resource capping has a vital role to play: it provides an opportunity to set an absolute limit to resource use (external to the market), so it institutionalizes a maximum physical size of the economy (Spangenberg, 2013a). Even if the need for applying resource use capping tools is accepted, others argue (Ropke, 2015) that there are implementation challenges to be addressed. The challenges inter alia are the difficulties of implementing completely new and quite complicated policy tools, the lack of proper technical infrastructures as well as institutions, cultural expectations, and

entrenched everyday practices. All of the challenges have evolved through long historical processes which favour the substitution of labour by mainly fossil energy.

Despite the scientific findings and references listed above (further examples are (Malghan, 2010), (Pelletier, 2010)), in the last 20 years, the three issues, especially onfair distribution that Daly (1992) raised, have received no significant attention even among ecological economists. One just needs to screen the main topics and themes of international conferences dealing with sustainable development, ecological economics or with the decoupling of economic growth from resource use. The scientific community of ecological economics is aware of it, assumes it, and sometimes even stresses it (Giuseppe and Sawyera, 2016,Harris, 2008) but in line with environmental macroeconomics does not put it in the main focus of their inquiries (Heutel and Fischer, 2013)(Rezai et al., 2013). Furthermore, most of them (one exception is (Fischer-Kowalski et al., 2011)) do not explicitly stress the need to reduce our resource demand in absolute terms, which would be definitely needed in order to achieve fundamental changing in economic thinking. It happens despite the fact that accepting limits is one of the two guiding principles identified already by the Brundtland Commission (Lorek and Spangenberg, 2014). These principles are in line with the ones of a resource capped economy, namely accepting limits and satisfying human needs within accepted limits.

Experts from NGOs and a scientific think tank have developed policy tools, independently from the main scientific and policy trends, in the past decade aiming for sustainable scale and fair distribution as defined by ecological economics through the realization of energy resource capped economy. One of the tools has been worked out in Hungary (Gyulai, 2010), the other one in the UK (Fleming and Chamberlin, 2011). Both of the proposals aim to set an absolute limit to energy consumption, choosing this resource owing to its most overarching nature. Based on the two national proposals, a European-wide scheme, the European Energy Budget scheme has been developed through close collaboration among non-governmental and scientific organizations (RCC, 2015).

The holistic approach of the scheme aims to prevent the shift of one kind of environmental pressure to others. Environmental pressures contain pollution, land use change and the fall of the abundance of natural resources. In case of holistic approaches the biofuel tragedy could not occur, when the pollution arising from fuel used might have decreased, the overall CO_2 emission increased in the end due to land use change. Furthermore, due to the holistic approach of the schemes, they aim to prevent shifting environmental pressures in space and time (trying to solve the dilemma of intra- and intergenerational space of Jordan and Fortin) and thus also avoid the rebound effect (Alcott, 2009). Furthermore, they aim for reaching optimal economic scale due to maximizing effective allocation of energy use, while staying within the sustainable scale of the Earth (Lawn, 2001) through setting absolute ceiling of energy use.

Energy use caps not only influence the size of the economy and thus contribute to sustainable scale, but, combined with allocation/distribution mechanisms, they could also ensure, or hinder, the necessary transformation towards a fairer distribution of resources (Spangenberg, 2013a). Furthermore, the caps also stimulate an efficient allocation of the resource concerned, since in a resource-capped world, everyone is forced to use less and use resources in the most efficient way.

Policy Tool for Energy Use Capping.

The two aspects (scale and equitable distribution) are tackled together in the concept of the European Energy Budget Scheme (EBS). It aims to reduce energy use through setting an absolute ceiling of its use and distributing energy entitlements under it. With the energy units or entitlements energy consuming entities (individuals, companies, etc.) can trade among themselves. This core scheme already drives the change of production and

consumption patterns, as it covers the whole economy and demands a yearly reduction of energy use.

The proposal will be described by its story of development and gained support, their elements, required institutional and administration background in case of implementation as well as demonstration of its benefits through concrete examples. Later we examine how the scheme contributes to solve the three concerns of ecological economics. Social aspects will be highlighted and discussed more extensively due to their typical marginalization in sustainability science.

Story of development and gained support

The EBS is based on two well researched and debated national proposals from the UK and Hungary, where independent national impact assessments and feasibility studies were prepared, and the national parliaments debated the proposals (without final adoption). The Scheme has been supported by the Resource Cap Coalition, which brings together European organisations advocating for a global resource use reduction, a precondition for sustainability. This shall be achieved for the aim of halting biodiversity loss and maintaining, as well as recovering ecosystem services, which underpin human wellbeing. The RCC was launched in 2010 and has currently 42 partner organizations, including international non-governmental organizations and research institutes.

Since the launch of the RCC, the EBS and the national schemes, on which it is built have been presented in various platforms, including scientific (ISEE Conference 2014, degrowth conference 2014)as well as EU and global policy formulation scenes (SUSCO conference 2014, World Resource Forum 2015).

Elements

The Energy Entitlement of the EBS would set absolute ceiling of non-renewable energy consumption, which would be lowered year by year. Energy consumption entitlements of annually decreasing quantities would be allocated among the individual consumers (on an equal per capita basis for adult and varying percentage for children depending whether the individual is the first, the second, etc., child in the household) and public and private consumer groups. Those, who save a part of their allocated entitlements, could sell their remaining entitlements through an entitlement manager organization to those, who want to consume more than their allocated consumption entitlement. This manager organization would sell the entitlement in the national currency, and buys the remaining quota in "quota money". This currency is parallel issued to the national currency, or the currency of the region where the scheme is implemented. The national currency shall serve as collateral for quota money, based on specific legislation. Those who do not consume their entitlements receive quota money, which can be spent on the Green Market.

The Green Market aims to spread of sustainably produced and high human labour demanded products (e.g. organic food, insulation of buildings for energy saving, renewable energy investments), thus it would promote sustainable production and consumption. It would operate according to pre-defined environmental and ethical rules including aspects of sustainability and market considerations. It inclusion of the scheme is also valid do to the fact that encourage consumers and businesses to purchase from locally owned, independent businesses rather than national corporations, has grown rapidly in the past decade(Kurland and McCaffrey, 2013).

The EBS would also contain a so-called Transition Fund, which aims for providing opportunity for everyone, both the rich and the poor to achieve savings through energy efficiency and renewable energy investments. The Transition Fund would give interest free loan in "quota money" with a payback period adjusted to the energy savings or income generation realised through the investment.

The scheme also would have a Support Service that aims to provide advice for every day citizens how they can benefit from the system if it is implemented. Advisors are supposed to be fully aware of the system benefits as well as the challenge people from each income deciles face, and would provide concrete suggestions on changing lifestyle to live more sustainable, as well as on household investment to reduce energy consumption.

Administrative and institutional requirements

One can easily pose the question that the scheme looks very inspiring but how it can be implemented in reality. For proper implementation, the system requires proposing and implementing new laws, establishing new governmental bodies as well as developing electronic system for the energy allocation card.

First and foremost, the European Parliament would define a provisional energy reduction target for the next ten years in accordance with domestic and international expectations and opportunities. The rate of reduction would be stipulated by EU directive.

The system prescribes the development of electronic system for the energy allocation card, which has a running account indicating the available amount of non-renewable energy for the consumer for yearly use. Furthermore, it registers consumption at fueling stations and settles the account at the same time. The energy providers register the consumed non-renewable energy quantity on the card at the time of accounting the service in the books, while card owners can check any time their balance. Payment in the green market in quota currency happens by means of cards, owned by all consumers.

A quota managing authority is supposed to be established to allocate and monitor energy consumption entitlements. The body keeps parallel accounts for both customers and providers. Parallel accounting is designed to ensure data security, to allow the replacement of lost cards and the day-to-day traceability of all the accounts. It marks the consumption entitlements on an individual electronic energy allocation card with a personalised PIN code by the beginning of the respected year. Furthermore, the quota managing authority observes confidentiality regulations related to personal data management, and does not divulge individual consumption data.

The system defines issuing a new currency, so called quota money, which can be received when possessing energy quota surplus, which is returned to the managing authority. This quota currencycan be spent on the green market.It can be also converted to the national currency, its price is pegged to the respective value of non-renewable energy. A 20% commission shall be paid at the exchange, which will be used by the quota manager. Furthermore, the system would establish a council, which aims to verify products and services entering the green market as well as lays down product certification and branding rules of the market.

The Transition Fund is established by law; and its basic accounting instrument is the quota currency. Its operational costs are covered by a transaction charge amounting to 1,5% of credit transactions, which is paid back by the debtors from their savings as part of the loan. The EU ensures the assets of the fund from public funds set aside for the purposes of the energy sector. The funds provided by the EU secure the collateral for the quota currency in national currency. However, the EU may capitalize on that collateral, e.g. by depositing it in a central bank under a certain interest rate.

Besides the above mentioned requirements of the system, specific regulation shall be developed, which aims to govern opportunities and limitations for buying fuel outside where the EBS is implemented, as well as energy and fuel allocations for foreign individuals.

The operating costs of the whole system, including costs of the quota manager organization and the advisory service shall be covered by 0,5% of the amount of each purchase transaction.

Demonstrating the scheme through concrete example

In a region where this scheme is implemented, those who use more energy than their received entitlement can choose in different options based on their income. If well-offpeople want to use less energy they either could change their lifestyle in order to consume less energy or they could invest in energy reduction. If poor people use more energy than their fair share due to the low quality installation of their house or to the big size of their house, they could approach the staff of the Support Service to ask for advice on how they can benefit from the system. The Transition Fundcould provide interest free loans for realizing necessary energy efficiency or renewable energy investments. They could pay the loan back with a payback period adjusted to the energy savings or income generation realised through the investment. In other words, they would pay back the loan from their future energy savings. People who use less energy than their entitlements could sell their remaining entitlements to the manager organization, which in turn gives them quota money to be spent on sustainable product and services. Therefore, those who consume less energy could enhance their well-being through accessing healthier and sustainable products for free.

Trials or pilot studies on implementing the scheme on small scale

Opinions on trialing the scheme differ significantly. The author of the Hungarian national proposal thinks that these kinds of schemes cannot be implemented on small scale since they require at least nation-wide adaptation. Their elements such as the Transition Fund or the green market can be implemented separately. On the other hand, in the UK studies have been undertaken on how to implement personal carbon alliance (PCA) schemes. In one of these works, 'trial' means a real world experiment that as closely as possible replicates a real PCA scheme, on a small scale and for a limited time(Fawcett et al., 2007). It finds that the small scale trial cannot fully replicate the conditions of the real scheme, but can reveal the personal responsibility for and feedback on carbon emissions aspects of the policy. The research concludes thatrunning a trial would be a complex and demanding research task, but it could provide valuable and unique insights into PCA.

The UK government commissioned a number of studies on PCA (Defra, 2008), following high-level political interest. It concluded that public acceptability and the cost of the scheme were serious barriers to its introduction. However, other reports ((Environmental Audit Committee, 2008) ;(Lane et al., 2008)) and some further researchcontested the methodology and the main conclusions (Shaun et al., 2014). At the same time a variety of other research work has subsequently demonstrated (Parag and Fawcett, 2014)that public acceptability may not be such a barrier as feared, but they show that there are some other challenges, like introduction costs, some adverse distributional effects, and the low carbon capabilities of citizens, which need to be addressed. However, the main barrier is probably the lack of political will to consider PCA as a real option to reduce green house gas emmission(Parag and Fawcett, 2014).

Evaluation of the EBS

Three concerns of ecological economics	How do the proposed EBS contributes to solve the concern
Sustainable scale	• Aims to reduce the size of the economy • Sets absolute ceiling of energy resource use,

Three concerns of ecological economics	How do the proposed EBS contributes to solve the concern
	which would be lowered year by year
Fair distribution	• Modifies distribution patterns through distributing equal per capita units of energy use
Effective Allocation	• Pushes all stakeholders to use their allocated units as effectively as possible • Let stakeholders choose from different options (buying, investing, reducing) according to what is the most effective for them

Sustainable scale

The EBS considers the biophysical limits of the Earth. Its aim is to reduce energy resource use in order to stay within the thresholds of our globe. It contributes to reach sustainable scale through striving to reduce energy consumption and thus the size of the economy. The proposal would reach their goal through setting absolute ceiling of energy resource use, which would be lowered year by year. The continuous ceiling reduction would ensure that energy use decrease gradually until it reaches sustainable levels.

Effective allocation

The set limit of energy use would push all stakeholders impacted by the system to use their allocated units as effectively as possible. The proposal, however, allows the consumers to choose from different options (buying extra entitlements, investing in energy reduction or change energy use patterns).

Furthermore, the scheme provides an alternative to the casual and popular 'rationing by price' approach currently in effect. While the energy cap tool incorporates a market mechanism to do what markets do best – finding a price for scarce goods and facilitating exchange – it would not be based on market principles (such as the principle of utility), but on the principles of reaching sustainable scale and fair distribution.. The financial crises of recent times show all too clearly that markets are not good at regulating their own appetites. Rather, it creates framework within which the market would be constrained, in line with the set energy use ceiling.

Fair distribution

The social benefits the resource use capping tools would deliver are often forgotten. The public as well as scientific perceptions are dominated by the view that their primarily target is the unsustainable resource use and thus they aim to tackle environmental problems. Examining them more thoroughly, it may turn out that they contribute significantly to human well-being, especially of the poor. Studies have been carried out on the feasibility of those national schemes, on which the EBS is built on.

Rewarding marginalized people, underconsumers

According to national surveys (Centre for Sustainable Energy, 2008)(Dresner and Ekins, 2004);TEQs, the system developed in the UK (Fleming and Chamberlin, 2011) reward primary marginalized people who use less energy. According to the Strategic Environmental Assessment (SEA) of the Hungarian Climate Bill proposal comprising the energy quota scheme(Tombácz and Mozsgai, 2009)the Hungarian proposal also benefits the poor. Overconsumers, which are definitely the more wealthy in the UK, but arguably in Hungary, could choose whether they will start economizing, investing or paying for the

extra quotas. Due to the fact that saving can happen only to some extent without investments, as ceilings are lowered the choice will narrow down to investing or buying extra to satisfy their energy demand.

Reducing household energy cost

Among social benefits we can list that the expenses of households could be reduced if these kinds of schemes are implemented. Those who consume less energy than the fairly shared units under the energy cap would gain extra income from the system through selling their surplus units for those who consume more than their share. The system would provide assistance (Fleming and Chamberlin, 2011), (Centre for Sustainable Energy, 2009) for those poor people who consume more energy due to cheap and inefficient appliances or to lack of control over home insulation. This could happen either through providing interest free loans, butgovernmental support could be also considered. With such support they could invest in energy reduction, thus lower their energy use and reduce their household costs.

Creating jobs

According to the SEA of the Hungarian Climate Bill Proposal(Tombácz and Mozsgai, 2009), this energy capping tool creates jobs directly in the construction; renewable energy and energy efficiency sectors. Namely, only in the construction sector 40,000 new jobs would be created. Besides, the stimulus of these energy sectors would have the potential to pose further demand increase in other related industrial and service provider sectors (such as subcontractors of energy providers, telecommunication industries, etc.). Furthermore, new jobs would be also directly established in the Support System set to provide proper life-style related recommendations for citizens. The increasing number of consumers of the Green Market would drive further job creation for satisfying this emerging demand towards sustainable products. Besides, after each transaction taken place in the market or in the concerned energy sectors, tax would enrich the state budget. This tax would moderate the amount of loan provided from the central bank to the commercial banks to covering the initial expenditures of the Transition Fund. Thus, the whole process results in added value in terms of reusing currently unused productive capacities and idle human labour.

Moreover, due to the spread of sustainable, labour intensive practices and the income generation of the quota under-consumers, access to environmentally friendly goods and services would be enhanced, which contributes to enhanced wellbeing.

Enhancing motivation, ensuring freedom of choice

Behavioral studies have consistently shown that intrinsic motivation drives us more than extrinsic motivation. This point could be valid also to environmental issues (Compton, 2010) in terms of being more environmental aware, consuming less and doing it more consciously. The EBS can contribute to the transformation of values and consumer behavior through creating individual, as well as common motivation to stay within with the set limits. This means that it is in all's interest to assist each other and to work cooperatively to reduce their energy demand and stay within the set caps on energy consumption. Sharing ownership of the problem across society encourages both active, engaged participation in creatively reducing energy demand, and a sense of legitimacy around the tools' framework.

The EBS also leaves the freedom of choice with the energy consumer, whether a citizen wishes to consume more than his share or rather he would decrease his consumption by either attitude change or investment. This freedom would give the opportunity for individuals, families and communities to decide for them what is essential and what is not is critical both politically and practically.

Discussion on outcomes for fair distribution

Do poor people use less energy?

Unfortunately the number of people under the poverty line is increasing in the EU, and this trend can be also seen in those two countries, where the schemes EBS is built on have been worked out("BBC news," 2015)("Portfolio news," 2014). Therefore, the EBS would need to pay extra attention also to those slipping into poverty. These people usually cannot afford those environmental friendly, energy efficient solutions, which are affordable for the rich, and often they created living conditions and consumption habits far before becoming poor, and thus many of them would easily consume their entitlements soon and need special attention. The Transition Fund however has the potential to solve this problem through providing interest free loans, which can help to reduce energy use and save entitlements.

The EBS also has to pay attention to the different patterns of energy use within the countries. The UK and Hungary show some differences in household energy use patterns, and some of these differences might be typical for other Western and Eastern European countries as well. In the UK lower income households (Centre for Sustainable Energy, 2008), (Centre for Sustainable Energy, 2009)tend to use less energy and thus could sell surplus allowances to gain extra income. In addition in the UK the percentage of people living in low income is lower in rural areas than in urban areas, but nevertheless many thousands of individuals living in rural areas are in households below average income (Department for Environment, Food & Rural Affairs, 2014).

In Hungary the picture is not that clear. In Hungary, household's energy demand is defined mostly by the type, the size and the heating scheme of the house (Herpainé Márkus et al., 2009). Energy costs of the households are almost the same throughout the country, independent from the number and the income of people living in it as well as from the type of energy used. This is because urban households are usually smaller and are in better conditions, but at the same time they are heated by the more expensive gas and have often district heating. While in the rural areas, while most poor and marginalized people in Hungary live, households are bigger and outdated, have often expensive electric boiler and insufficient insulation, but at the same time have individual room heating mostly with cheaper wood. Due to these facts, we could not assume for all European countries that poor households consume significantly less energy than the richer ones and they can thus sell surplus entitlements.

Hungarian researchers also suggest that the rural energy related problems could be solved through energy efficiency improvements, which has been proved to be worth investing in (Rácz, 2013). Furthermore, it could be solved through decentralized energy production and simple renewable energy technologies (*Renewable energies for eliminating poverty conference recommendation, 2009. March 18-21. Pécs, Hungary*, n.d.). Supporting decentralized energy system EU-wide, which could work well together with the EBS, would allow cheaper production of energy and the establishment of workplaces through solar energy and community owned, low performance biomass related investments. The Transition Fund would also contribute to solve rural energy related problems and support the livelihood of poor families through supporting the local, community based use of renewable energy related investments.

Therefore, the Transition Fund as well as the Support Service of the EBS proposal would need to pay extra attention to those disadvantages households, which consume more due to their outdated conditions and lack of information on investment choices. As access to information by the marginalized people is often a challenge, it is of outmost importance to ensure that the information hub of the Support Service reaches the most disadvantaged

groups in an effective way and can inform them that these funds are available and provide professional advice on how to transform their energy consumptions.

In summary, due to the different housing and energy use patterns in the various countries, the extent to which the EBS can reduce income inequalities is different.By these measures the housing and energy poverty can be moderated, even if relative poverty would still remain due to the already existing inequality.This is especially true for the short term, until the necessary energy efficiency and renewable energy invetsments are realised in the countries, which can enable that the low income groups and higher income groups live in households with comparable energy performance. When the necessary housing modernisation investments have been realised, the consumption habits of the households will weigh much more in saving/ using extra entitlements, giving moreeffect to the redistribution mechanism within the scheme.

However, from the very beginning the scheme has the strong potential to protect the most vulnerable groups from the shocks of the energy transition, through providing interest free loans from the Transition Fund and providing advice by the Support Service. This advantage is often overlooked or underestimated when considering policy alternatives, even though this shall be fully taken into if economy wide transitions are planned affecting all consumers.

However, it requires further modelling to explore how the EBS proposal could most effectively address income and energy use inequalities taking into account the energy use pattern of the European countries and the special situation of low income groups.

When freedom of choice can strike back

In terms of the impacts of the scheme on middle class people, who can choose between investing in energy reduction or simply change their way of living, their choice would need to be examined more deeply. Arguments would support choosing investing due to that it does not require any additional expenditure (contrary to the entitlement purchase), it has added value and avoids future quota shortage problems. On one hand it would be very beneficial, since it is assumed that implementing the scheme would result in significant reduction of energy use. On the other hand, it would mean that everyone would choose to invest and not to purchase, which would result in the lack of utilization of the quotas saved by under consumers. This challenge could be overcome by setting the prices of the extra entitlements and the conditions of taking interest free loans from the Transition Fund right (ratio of own contribution, eligibility criteria, combination of setting the ceiling of investment cost following a local practice in the UK (WarmFront, 2010)). Modelling of the scheme could provide valuable insight, how the scheme could be tailored to meet different circumstances in the various countries.

Conclusions

The EBS tool for energy capping that has been scrutinized in this paper would contribute to the first concern of ecological economics set for us through the absolute limit to energy use. The sustainable scale would then be achieved through gradually decrease the ceiling set for energy use. Under the limit, the level of allocation would become more and more effective due to that every entity would be forced to reduce. The most obvious social benefits include favoring less consumption, job creation, supporting cooperation as well as the freedom of choice. Those who consume much less and save energy entitlements; directly benefit financially from the system. Furthermore, due to the set energy cap the schemes would favour human labor intensive practices thus create jobs in less energy intensive sectors. Also setting absolute limit for energy consumption would enhance cooperation through forcing members of society to work together towards meeting the requirement appointed by the set limit. The EBS would still leave the choice at the

consumer whether he would continue to consume as he has been doing or he would change his consumption habits either through changing behavior or through energy reduction investments.

The scheme is also equipped to ensure deep decarbonisation of the economy while protecting the vulnerable low income households from the extensive financial burden of the transition. This is a great advantage of the scheme, but it requires further modelling to ensure that the different housing and energy consumption patterns through the EU is properly taken into account in the introduction of the scheme. Concrete studies have been undertaken in this regard in Hungary, where they have found that there is no significant difference in the amount of energy used between the poor and the rich, due to the low energy performance of buildings, where most marginalized people live. On the opposite British studies show that marginalized people use significantly less energy than the rich. While the poor rather live in urban areas, access to information might be easier for them about the benefits of the energy cap scheme. However, poor people in the Hungarian countryside might not fully be able to use the benefits of the EBS proposal if they do not have full access to the necessary information. This challenge arising from the difference in energy use patterns and the way how information is spread between the Western and the Eastern parts of the EU suggests further research to be undertaken. They should also address the above mentioned challenge of freedom of choice, which can result in that everyone would choose being more environment and thus energy conscious and no one would use more energy than his share, leaving the surplus energy entitlements on the market, which the underconsumers cannot sell. Based on the findings of the research, the various parameters of the EBS (criteria for interest free loans from the Transition Fund, the functioning of the Support Service) should be properly set to reflect on these differences in the implementation.

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(Un)sustainable electricity consumption at the upper limits

Social capital and feeling rules among Geneva expats

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Introduction

One interpretation of 'sustainable consumption' is to achieve a more equitable distribution of the global resource pie, for both the present and future generations, while taking into account environmental limits and social justice. Increasingly, researchers are pointing to the need to consider both minimal and maximal limits to consumption in relation to wellbeing, what has been termed "corridors of consumption" (Di Giulio and Fuchs 2014). In relation to energy consumption, macro-level studies have ascertained that there are enough energy resources to satisfy high human development worldwide, and that higher standards of living are possible over time with fewer inputs (Steinberger and Roberts 2010). The issue, for the authors, is political and economic. In short, the unequal distribution of power and economic capital, as well as related social and cultural capital (Bourdieu 1979), leads to unequal and thus unjust access to energy resources and related services. While research is underway at the level of minimal limits (for example, in relation to energy poverty, see Boardman 1991, Pachauri, Mueller et al. 2004 among others), less empirical work exists on consumption at the maximal limits.

This paper explores (un)sustainable electricity consumption practices at the upper limits, based on ethnographic research among households with high financial and socio-cultural capital in Geneva, Switzerland. The households studied are part of what is known as the expatriate population[41]: English speaking, living in Geneva for job opportunities (e.g., in multinational companies, the financial sector or international organizations), with children generally attending private schools, and living in villas in Geneva, with secondary homes in the Alps and/or abroad. The goal of focusing on this group is not to put forward a moral argument, that solely so-called elites should be targeted in relation to current consumption patterns: all sectors of society and all socio-economic groups have a role to play towards absolute reductions, in the context of industrialized countries. Rather, we consider these consumers as a worthwhile area of study because of the resources at their disposal. There is a potential to achieve not only greater efficiencies when it comes to energy consumption, but also sufficiency – or absolute reductions. That beings said, this affluent group is also "locked into" certain lifestyles, in terms of physical possessions such as larger homes and numerous appliances, as well as softer forms of lock-in that relate to social status, taste and power dynamics within set social fields, which involve family and peer groups. With all of this in mind, in what way could this group be compelled to transition to more sustainable consumption pathways? That is the main question posed in this   paper.

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[41] The word "expatriate" is derived from the Latin words *ex*, out of, and *patria*, country or fatherland. The term "expat" is used to designate white collar, professional workers living outside of their country of origins. They are essentially migrant workers, but with a more socially acceptable label.

What follows is an overview of main concepts guiding the research and methods used in this research project. The research findings are presented in relation to three key themes: notions of excess, restrictions (voluntary or imposed), and entitlement. We conclude with a discussion around opportunities for transitions to more sustainable electricity consumption practices among this socio-economic group, which could be relevant towards sustainable consumption transformations in other contexts.

Concepts and methodology

The research on which this paper is based is part of an ongoing Swiss national science foundation (SNSF)-funded project on household electricity consumption. The aim of the overall project is to understand social norms and representations (including beliefs and emotions) in relation to everyday practices that use electricity services (lighting-systems, refrigeration-freezing, washing-machines and dryers, information communication technologies, and so on), among different socio-economic groups. Social practice theories guided our research design: we consider the material dimension of consumption (appliances, housing types, objects), along with people (their competencies, skills, emotions) and social context (standards, norms and regulations). While social practice theories have been elaborated as of late in relation to (un)sustainable consumption (Shove 2003; Warde 2004; Wilhite 2008; Sahakian and Wilhite 2014), Bourdieu's (1979) seminal work on food consumption practices in France was more focused on questions of power and class relations than more recent interpretations. Based on his extensive ethnographic work, Bourdieu proposes the notion of total capital resources, to include not only economic capital, but also cultural capital (related to schooling), social capital (related to social networks) and symbolic capital (related to reputation and competencies). People's everyday practices are shaped by these forms of capital, acquired through life experiences, in addition to people's dispositions and the social fields within which they act (Bourdieu 1979: 331).

Bourdieu organizes social life into these social fields – such as a political, economic, or cultural fields, with participants in a field sharing the same rules of the game, or a tacit understanding of the stakes at hand, which translates into a practical understanding of the rules that govern a social field (Bourdieu and Wacquant 1992: 93). Not all participants have the same position within that field, however. The domestic sphere can also be apprehended as a social field, involving people in a similar social class who are aware of the standards governing how to act, what to say, and even what to feel in relation to home-making, and how this relates to other people's practices. This brings in another prism of analysis which we engaged with for this study, that of the sociology of emotions (Collins 2004), and more specifically the relation between (un)sustainable consumption practices and emotions (Spaargaren 2011). While emotions are generally understood as being a spontaneous reaction to a situation or discussion, Hochschild (1979) found that emotions can be socially constructed through he termed "feeling rules", which govern what and how people ought to feel, with what intensity and duration. We sought to uncover, through our research, what feeling rules emerge explicitly in discourse, how this relates to social rules and standards in a certain field, and what this might tell us about opportunities towards challenging (un)sustainable consumption practices among this particular group – expats in Geneva.

Our main approach is based on ethnographic methods: through in-depth interviews and observations, we seek to achieve a deeper understanding of existing practices and opportunities for change. We capture emotions in our interviews explicitly in the use of vignettes and scenarios to evoke certain feelings around social norms, specifically norms around gendered relations in the home; norms around what is perceived as modernity and

progress; standards around hygiene and cleanliness; norms around time efficiencies and the quest for convenience; and finally, how people understand aspirations towards the "good life" normatively. We also asked people to reflect on notions of excess, entitlement and restrictions based on their own personal experiences, as well as by projecting onto future scenarios. What people experience and perceived as excessive, in relation to feelings of entitlement or a sense of having a right to something, is an area of research that has been explored in relation to air-conditioning consumption in Singapore (Hitchings and Jun-Lee 2008)[42]. We add to this the notion of restrictions, or how people have experienced – or perceive the idea of – voluntary or mandatory restrictions on energy consumption. These three themes were captured in our interview guide, though not always explicitly; they also emerged in our data analysis.

To date, we have conducted 37 in-depth interviews among different socio-economic groups. Ten in-depth interviews were conducted among women who self-identify as being part of the expatriate population in Geneva. Two of the women work full time in a job outside of the home, two women do so part-time, and a fifth woman was working in the financial sector and was job searching at the time of the interview. The other five women do not have professional jobs, but rather work full time in the domestic sphere. All of the women have children, ranging from babies to teenagers. The interviews were transcribed and coded using NVivo 10 software, along with observations and notes. Emotional responses were capture in our observations and also directly in the transcripts of the interviews through coding (e.g., laughter, hesitation, strong statement, strong positive feeling, strong negative feeling, etc.). In terms of the sample, first contacts were made through an acquaintance who organized a social event where we were able to introduce this research project and recruit participants. Four woman agreed to be interviewed in the first phase, which then lead to six additional interviews. All of the interviews, save for one, were conducted in English. Quotes from the French interview, which often included English statements, have been translated for the purposes of this paper.

Research findings

The first question we seek to answer in this paper is, in what way do people in the expatriate population of Geneva understand energy consumption to be excessive? We first consider how notions of excess are either expressed or avoided, in our interviews. Second, we consider how people have experienced imposed or voluntary restrictions on their energy consumption practices, or how they might perceive such forms of restrictions. Lastly, we seek to uncover how and in what way people feel entitled to energy resources and related services. This sense of entitlement relates to an understanding of social position and growing expectations around what people perceive as their rights as individuals or families, as distinct from what they perceive as rights at a societal level..

How and in what way is energy consumption excessive?

The Geneva expats we met with live in large homes or spacious apartments. Out of the ten women interviewed, six had second and sometimes third homes, including winter chalets in the nearby Alps, a summer house off-the-grid in Spain, or homes in other places for vacations. In their Geneva homes, some have swimming pools, heated for the most part, as well as Jacuzzis, steam rooms, garage space for at least two cars, multiple bathrooms and bedrooms, and large kitchens. Interior design is important, as homes are carefully outfitted in styles based on taste preferences and current trends – for example, towards more open-style kitchens that communicate more directly with living and dining areas.

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[42] Notions of expectations, entitlement and excess in relation to energy were also proposed in a session organized in the context of the DEMAND 2016 conference at Lancaster University, co-organized by Russell Hitchings, Sue Venn and Rosie Day.

Electrical appliances and information communication technologies (ICTs) of all sorts are apparent throughout the house, from kitchens outfitted with American-style refrigerators and televisions, to the film projection rooms and entertainment areas. They also have domestic help, involving nannies who care for the children, and cleaners who take care of the home and laundry.

There is no sense of excess when it comes to overall consumption, among this sample. Having large homes, multiple homes, abundant appliances and traveling frequently for holidays is a normal level of consumption, albeit one that is recognized as a privilege among the members of this group. There is no sense of upper limits to total consumption, on the contrary, these consumers do not situate their consumption overall as excessive because they know people who consume far more than they do. This group is not jetting around in private airplanes and living in McMansions, as exemplified in books such as *The New Elite* or *Superclass.* Having more, rather than less, is generally desirable when it comes to living spaces. "Space, space to me is the ultimate luxury [Strong statement] (…). This feels too small to me now," explained Mariana, mother of two, talking about her three-storey attached house, with three bedrooms, living room and dining area, an office and basement area. If she had more financial means, she would want a house with more rooms – particularly for welcoming guests.

The people interviewed for this study knew that we were researching energy consumption, which presents a bias: they are aware of environmental issues and willing to explore their energy consumption in the domestic sphere with someone in the academic sphere. In that respect, it is no surprise that specific features of the home were presented with more of an apologetic tone, indicating a sense of excess. For example, Helene, mother of three, showed me the elevator in her four storey home in an apologetic manner: "So this I'm sure, it's a little bit ridiculous [laughs]." She explains that she uses the elevator for bringing up groceries, from the garage to the kitchen, or for cleaning and tidying the home; toys for example will be placed in the elevator, to go from the common living space back up to children's bedrooms. Mariana tells me about her two dishwashers in the kitchen (see **Figure 1**) as something that she knows is excessive, but that she also can not live without; the same two dishwashers have been installed in her chalet kitchen, in the ski resort of Verbier. There are other kitchen features, such as a special oven drawer for heating plates or a refrigerator drawer system, which are presented not as excessive, but as new forms of convenience that people in this group value.

Figure 1: the double dishwasher feature

Refrigerators are generally large in size, comparable to what can be found in North American homes; the exception to this rule was in homes that were rented and not owned[43], where refrigerators more adapted to Swiss standards had been installed by the owners. In this case, a second or third refrigerator is considered a necessary investment. Both Sally and Helene are in this situation; their husbands work in the financial sector in

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[43] It is not uncommon for expats in Geneva to rent rather than own their homes, as rental fees are often covered by the companies where they are employed. They pay for their own utility bills, however. In rented Swiss homes, refrigerators are sometimes included in the kitchen, although not always.

Geneva, and they are renting their homes. Sally explained that they bought a second refrigerator and freezer, which they keep in the basement, because:

> *Well my husband, we have a very small fridge here (...) You know it's a half freezer it's a half fridge and it's European style. It's incredibly small, I'll show you [footsteps]. So this is a classic non-American fridge [laughter] Well you can see it's like, it's minuscule.*

The floor to ceiling refrigerator is a one-door unit, quite standard and even large for most Swiss homes. For Helene, a new refrigerator was purchased as a result of a Thanksgiving dinner, when she did not have sufficient space in her refrigerator and was storing food outside:

> *I mean, it was so embarrassing, like we would be, I mean, putting things outside and it was [giggles] it wasn't cold enough, it was difficult to store things. If company would come and like stay for longer than a week at a time, it's easier if you cook in advance, but you need to have a place to store it.*

New refrigerators and freezers are purchased because there is space for them, which results in a stocking up of foods. In turn, limits to appliance acquisition are in relation to available space. Helene, for example, would have liked to acquire more appliances but feels her counter space is too small. The appliances are not all necessarily used, however. When asked what appliances she has in her home, Mariana responds:

Interviewee   *We have every appliance here. And I mean, seriously, every one.*

Interviewer   Like what, do you have one of those knives that cut electronically?

Interviewee   *Probably [laughter], no I'm serious.*

Interviewer   And do you use them all very often?

Interviewee   *No I have stuff I don't even... We have a... We have everything...I have a popcorn machine, I have a vacuum pack machine, I have a machine to cook things on bain marie [water bath for slow cooking], probably two...*

Interviewer   What's the vacuum pack machine for?

Interviewee   *You know when you want, when you want to seal something and you want to vacuum pack it and then you want to cook the meat in water that's at 90 degrees, I have all that. I have a blender, I have a hand blender, I have a Nutri Bullet, I probably have two waffle irons.*

The Nutri Bullet came up in several interviews, with this group. A blender that has been promoted as a "health revolution" because of its ability to extract nutrients from whole fruits and vegetables is a trending item in these homes, with several people mentioning that they own or recently purchased this blender. In Esther's house, the newly purchased blender was sitting in its box, ready to be used for the first time. The health benefits of the machine were the primary reason for purchase, based primarily on hearing about the Nutri Bullet from friends. Friends seem to influence different forms of appliance acquisition, as Rada –mother of three – explains:

> *Um, I recently bought a juicer in the last two years because it's been the rage, everyone is juicing, detox, you're juicing, you don't have a juicer, you need to buy a juicer, okay, let's go buy a juicer. The kettle... even my kettle is a recent... because I always had the kettle that you put on the stove (...) And friends would come over and they'd be like, jeez, how long does it take for you to boil a cup of tea for me.*

Yet Jacuzzis need to be maintained, appliances fixed or replaced, and there is quite a bit of effort going into the upkeep of these objects. Melanie, mother of one, who has a pool and

Jacuzzi in her garden explains that the Jacuzzi has not been heated for six months, as a piece has been missing and replacing this piece is not a simple task. This is a source of frustration for some, even with the availability of domestic help – including frustration around managing the help. Too much stuff also takes up too much time. As Sally, mother of two, put it, "using appliances is a waste of time, then you have to wash them". Saskia, who has a three-year-old daughter, explains that she would much rather do things by hand than bother to take out, use, then clean and store appliances. Pressing lemons or grating carrots are more of a hassle with electronic devices, because of storage and cleaning, for Saskia.

For all respondents, maintaining cleanliness and order in the home is a standard that is non negotiable – and therefore not excessive. Norms around cleanliness and tidiness are very much upheld, with routines established around regular laundry and cleaning activities. This group has high standards around cleanliness and the means to put them into practice, involving a program in place for the execution of chores (Friday, we wash sheets; Monday, whites and darks, etc.). Mariana laughs as she tells me that someone is constantly cleaning her house; when I ask why she's laughing, she explains. "Because she comes an obscene amount of hours because I like things very clean. And I, I think I probably have every day someone at least spend five hours a day cleaning the house." For Mariana, excessive cleaning is desirable. Selma, mother of two small children, explains that the laundry runs almost continuously in her home. Melanie, mother of an eight-year old boy, explains that her domestic helper cleans clothes continuously, any clothes that are left around the house will be cleaned, rather than put away. This may have less to do with dirt that maintaining a position within the households, as she explains:

> I also have, I suspect – I don't know if this is true and it may be unfair but I think sometimes she sees it as part of her job security, that she – because we don't really need her as much as we have her but we pay for all those hours because we want… we don't want to lose her, so sometimes I feel like she makes a bigger deal out of the laundry because it justifies us having her for the hours we do.

For the six out of ten respondents who had lived in the United States, the small size of washing machines and the longer washing cycle was a matter of some frustration. The eco-cycle feature was also most perplexing, as it seemed counter intuitive that energy efficiency would involve a longer cycle. Two respondents also felt that the garbage disposal feature in sinks, popular in North America and the United Kingdom, would also help make cleaning up more effective. Experiences from elsewhere have a role to play in consumption practices, a theme we will come back to later.

How do people relate to voluntary or imposed restrictions?

While this group of people may be in a privileged position, their social engagements, domestic work and, in some cases, professional work means that they experience time crunches regularly. As Rada put it, "I would say I am in a period where I am just, you know, my feet are running one way and my body is running the other way and my head is somewhere else. So it's that phase I am going through." At the time of the interview, she was on a committee at her son's private school to organize the graduation ceremony. The most obvious restriction people consider is in relation to time: slowing down time, taking your time, is something people strive for in this group. This group uses technologies, such as computers and smartphones, to slow down time through meditation apps, running apps, audio books, among other features. When asked about meditation apps, Rada mother of three children explained:

> Yes, well I have done, I have done a lot of uh, the Deepak Chopra's um, twenty-one day journey meditation, in fact I am supposed to sign up for one, I got a reminder last night, to say I have to sign up for that journey (…) So I have signed up for that, and that really was great when I did it, and I got a couple of friends involved, and we were

> *all like sharing the next day what we felt and how we... went through it, in the evenings and stuff.*

These moments of slowing down the tempo of everyday life are often shared with friends and family. They are engaged in self-actualization groups on Facebook, diet groups, sports groups, and give each other regular "challenges" that have to do with everything from setting personal development aspirations to switching to "healthy" diets. Healthy eating is a significant trend, related to restrictions on diet. Yet maintaining social relations and engaging in social activities also take time, as Rada puts it:

> *Yes, and there's a lot going on, I mean, you know, you just get inundated at times with Facebook, just trying to catch up. Um, there are days when it can be, especially when there's so much happening on the social scene, like there's an art show or there's a music concert or there's a gallery opening or someone is doing a private sale in her home, and I am like, oh my God, I want to go to all of these.*

Being in a different location, other than Geneva, means that people can place some voluntary restrictions on their social connectivity. Several respondents told me about five-star hotels that offer rooms with no Internet service and go so far as to confiscate your cell phone at check-in. Melanie spends her summers in Vermont and explains, in that context, she is able to be less connected and less responsive to messages from her social network. In relation to disconnecting, she goes on to explain how shutting down all ICTs has a therapeutic quality:

> *(…) I did a couple of years ago a, kind of, detox, um, my friend and I went to this clinic in Austria, the Buchinger clinic and we were there for, um, a week and, I mean, most people go for a month but I can only afford a week. But anyways, they had this, like, master switch in your bedroom that when you went to sleep at night, and it was part of the detox, you'd turn off everything and it was not only the Wi-Fi, it was every, kind of, light and, you know, appliance because they had a TV in there and something else, so the whole electricity running through the room was shut down and it was so quiet.*

One of the most striking aspects of this group is that they are well travelled, have lived in different countries and contexts (developing countries, mega cities, etc.), and seem to be incredibly adaptable to changes in consumption that might be imposed through these different contexts. Sally remembers living in New York City in the 1980s, when air-conditioning was less popular than today and body odour was something quite normal, as she recalls traveling to work by subway in the summer months. Sally also owns a second home in the Spanish countryside: it's off the national grid and they have gone to great pains to install renewable energies and change their consumption patterns (sun-cookers, less showers, less clothes washing, etc.). Sally's daughter is more careful about washing clothes in Spain, but falls back into her regular habits back in Switzerland (t-shirt worn once, as opposed to several times, before washing). Nathalie grew up in South Africa and based on that experience she always hangs her clothes to dry, considering it too much of a "luxury" to dry them by machine, as she puts it. Selma grew up in Amman, Jordan, and as a result is very conscientious around water consumption in the home – as she recalls living in situations of water limits, with clear restrictions on when gardens could be watered, for example. Rada experienced frequent power outages when visiting India in her youth, and also recalls boiling kettles for washing up in the United Kingdom. Esther also recalls growing up in the United Kingdom, when blackouts were common. I asked her how she lived those moment:

Interviewee: *Fine, we just adapted. You were told that, that there would be no, there would be no electricity between seven and nine that night and so there wasn't.*

Interviewer:	And was it somehow fun or not really?
Interviewee:	*Oh yes because we, yeah because we were little and so it was, it was a great, it was, it was, it was a great adventure to have, to have no electricity for a short time [laughs] (…). And then ah, ah, as it wouldn't be a whole city, um, you know it would be parts of the city would have, be shutoff at different times. Part of the family whose house was in darkness would come over. Um, when our lights went on and then when our lights went off they would go home and it was you know it was, it was, it was nice yeah.*

Certain respondents have reflected on changing their lifestyles in the future, towards "downsizing" as Nathalie put it. This is generally the case for families where children are already teenagers or soon leaving the home, presenting an opportunity for downsizing. As Rada told me:

Interviewee	*Yes, because I think we get to a point in life, well I know I am certainly at the point in my life where we just have too much stuff (…) It's just, get rid of it, it's just, every single closet is full, to a point where are just tripping over everything and can't find it when you need it so you go and buy it again and then you just multiply, multiply, multiply, to a point where, you know...*
Interviewer	There's not a correlation between more stuff and greater happiness?
Interviewee	*Oh, absolutely not.*
Interviewer	And what about the idea of downsizing, some people have been mentioning this.
Interviewee	*Yes, I think for me, I mean also, um, uh, I would like to eventually, I am not sure if I am ready emotionally right now, uh, because you know, my home is something that I take great pride in and it's something I built, uh, but it's a family home and the family unit is changing, my son is leaving for university, um, my second one will go in two years, so I can't afford to maintain it, to be honest. It's a lot.*
Interviewer	In terms of time, or financial?
Interviewee	*Yes, time. Time and money, yes, both.*

Esther would get rid of her car, because the public transport system works very well in Geneva, as she expressed it: "We certainly don't need two cars anymore because this uh, my husband's is, sit, sits outside, so I will probably get rid of my car. But ideally we would get rid of them both and have a Tesla." Mariana felt the same, that probably they could reduce their car usage but then added: "But I know intellectually that I can reduce it but I'm a creature of comfort and I, I'm going for the comfort." For Melanie, the discussions around downshifting are much more present in her social network in Vermont, where she spends her summers. She explains that among the Geneva expat community, the discourse is somewhat different – more importance is placed on social position and social status, in relation to keeping up appearances and material forms of consumption. In Vermont, downshifting exemplifies social status, according to her experiences.

For household with small children, downsizing or downshifting is not an option, as in the case of Mariana described above who would prefer a larger house with more rooms, with space as the ultimate luxury. Comfort and convenience are particularly important, among families with young children, although not solely.

Some people are upshifting: in relation to the difficult real estate market in Switzerland, where finding affordable housing is a challenge, Saskia explained that the market for

luxury homes is finally bursting: people are recognizing that large homes are too expensive to maintain, therefore making larger homes more available on the market. She therefore was recently able to purchase a 900 m² home in Geneva's Old Town at a price that was relatively inexpensive, compared to the four to five bedroom homes with less square meters that are currently the most popular. Downshifting may be more a part of discourse than practice, as even reducing consumption levels for this group would still entail relatively high levels of consumption. Challenging standards that are or are becoming normal in this group, such as the double-door American refrigerator or the double-dishwasher feature, would be difficult. When I suggested the idea of reducing or eliminating refrigeration altogether, to be replaced by cool storage areas or small cooling containers for example, the idea was welcomed but seemed too different to be put into effect. For Saskia's Old Town home, currently under construction, the architects and engineers play a significant role on what can or can not be done – in addition to city regulations governing this type of housing (inability to place thermal heaters on the roof, for example). As documented elsewhere, these actors are critical in imposing standards in the sphere of building design and architecture, which can lock in energy demand for years to come (Sahakian 2011).

In terms of imagining what imposed restrictions might look like, the conversations tended to get much stickier: a reaction of surprise at the question, followed by a very assertive position against interference. There was a general sense of discomfort in any restrictions being imposed on this group. The general sentiment, among most respondents, was that income and privilege (or economic and socio-cultural capital) is something that is earned, individually, and therefore can not be taken away without defying individual freedoms. The notion that individuals are central to change is also reflected in how this group of people engage with healthy diets and other forms of self-actualization, rather than engaging in a more systemic understanding of how social change takes place. If people can pay for something, through financial means, then they should be able to access that something. Giving people at the lower limits access to resources, if they had not earned them somehow, would also be tantamount to providing what one respondent called "handouts", which would then "enable a certain part of the population to just do nothing and not challenge themselves to be creative and be of use" according to Melanie. Sophie exclaims, in a strong statement: "I would say that if everyone was willing to have nothing, spend nothing and gain nothing, then society as a whole would come to a standstill. There would be no more creation, innovation, no more inventions!"

If in the interviews, I managed to persist (given the strong negative emotions around the topic under discussion) in explaining that resources were limited, and that a more equal distribution of available resources might be necessary, most of the respondents pushed back by either suggesting that more important structural changes might first have to take place, or that the impact of limited resources would need to have a more direct impact on their life for them to take it more seriously. In terms of structural changes, certain respondents felt that the education system had to change (the film *Demain* or Tomorrow was given as an example, in that it should be made mandatory to all school children), while another woman explained that there should be blanket-policies to better insulate homes, for example, or restrict access to water in times of draught, which should be implemented before any discussions around upper or lower consumption limits could take place.

If limits were to be put into place, the people in this group would most likely find ways to circumvent them. Mariana gave me the example of her car, which she purchased in the United Kingdom and had brought to Switzerland, for the sole purpose of avoiding local taxes. "I think it would be very hard in a free market economy to regulate that because you will always have people who can pay more to access more," Melanie explained. "That's not to say that I don't agree that there should be limits", she added, but the main question for her – and for several other respondents – was *who* decides and *how* would such limits be

enforced. You don't necessarily trust electricity providers or the government, as Nathalie explains:

> *It depends where the restriction is coming from. If restriction's coming down from a government or something like that, that becomes something else. Where like I come to uh, your house and you say you've given me the restriction… And I… I trust you and respect you and think you're doing it out of trust and respect for me [strong statement] … then it's okay.*

Melanie echoed this sentiment, that any changes in consumption would best come through the social networks, as "it feels like it would need to be communally enforced and doing it as a group of friends is a better enforcer than, you know, the electric company." There was also a sense that the restrictions should start first in other sectors. Saskia gave the very specific example of outdoor, illuminated billboards: why should I reduce my household electricity consumption if billboards are allowed to consume electricity, for advertising? This for her was an area that should be restricted, preferably through a public vote on the matter. On the other hand, she would be against turning off the electricity in all office buildings at a certain hour, as this would go against "economic progress" as she put it.

How do feelings of entitlement develop around electricity consumption?

All of the women interviewed in this study have a clear understanding of their social position: they recognize, in discourse, their privileged positions, which is a form of entitlement. The type of language they used tended to be assertive, with little hesitation in expressing strong opinions. This made it difficult, at times, to get beyond the controlled emotive responses (or feeling rules) to understand how they really feel about certain situations. For example, a particular vignette was used during the interviews, based on a picture composed and taken by Heath Robbins (*Figure 2*): a woman is presented in her kitchen, in complete disarray, with several children and a dog creating an absolute mess of things. The image was used to incite discussions around cleanliness and gendered roles around the domestic sphere.

Across all the interviews with this group, people had very controlled emotions around the vignette: their own homes are immaculate, they value cleanliness and order, but also recognize the staff support they have and work involved in maintaining this in their own homes. There is therefore a distance between themselves and the woman in this picture, through their responses you sense that they control their emotions and distinguish themselves from this woman – not in relation to social class explicitly, but in recognizing that they have a privileged position and remain non-judgmental when it comes to how other people organize their lives. Esther, for example, laughs when she sees the image and explains:

> *I would say ah, um, [hesitates] well they all look, they all look like they're having fun (…) They've got their chocolate buns, she's getting her thing out the, out the fridge, this one's up here getting her biscuits and (…) let them, let them be (strong statement). If, if she asked if I want, if I could lend a hand then I would, but otherwise.*

Figure 2: Vignette used in interviews around cleanliness

Being a privileged woman managing a large home also means that there is a sense of entitlement around the type of domestic help you can expect, but also the cleanliness, tidiness and indeed cosiness that you must then deliver for other household members. As Melanie explains:

> *Thankfully we're, you know – my husband is providing a lifestyle in which we have help because I would not be happy if I did not have Dorine [the cleaning lady] running this big a house. When we were buying a house, I said to him, this is too big for us, you know. We don't need all this space, and he was, like, it'll be fine, you know, so um, these size houses were meant to be run with help. One person could not do it, especially if that person also wanted to have a life outside the house.*

The creative aspect of home-making, beyond the more drudging chores of cleaning and tidying, involves making meals for friends and family, and generally creating a cosy house. The husbands and children living in the house, and presumably the guests as well, are all entitled to this feeling of cosiness. Friends seem to also be a source of pressure, when it comes to maintaining certain standards. As Selma explains, "it's amazing how women judge women."

For mothers of teenage children in this group, some felt that younger generations are increasingly expressing feelings of entitlement towards a privileged social position, which was not necessarily earned, in their opinions. This demonstrated, for Rada, a form of excess. She explained the creation of a new social network:

> *Cool Kids with Cash, and it's an Instagram account on them, and they won't let you access it, and these kids are posting pictures of Hermès, Gucci, Lamboutin, they're spending a thousand francs a day, and I am thinking, where is this money coming from? (…) I mean, my daughter says to me, oh, I am going to La Reserve [a five-star hotel] for coffee, I am like, really, because the coffee shop down the road is not good enough?*

Feelings around entitlement in terms of ownership are changing however, especially in relation to information ICTs. People are sharing more experiences and less things, and also acquire less books, CDs, and DVDs, as all of these forms of entertainment are now available digitally. Sally explains that a precious book collection has very little value these days. Her uncle's collection was not made useful after his death; the books would need to be

"extremely rare" as she put it. She has her book collection on an iPad and would like to find ways of sharing this with others, for example, with house guests at their summer home. While none of the respondents spontaneously spoke about sharing appliances, we posed this hypothetical question in the interviews and many had a favourable response. For Mariana, however, sharing would not be possible – she sees health and hygiene issues with the sharing of appliances and would not sacrifice her personal convenience. Feelings around the right to own things and the possibility of sharing rather than owning would merit to be further explored.

The strongest feelings of entitlement were expressed in reaction to restrictions on individual freedoms, yet there was a contradictory discourse among some respondents who also felt that society as a whole should benefit from resources, and that environmental and social sustainability should be somehow insured for future generations. Challenging notions of individual freedom as opposed to societal wellbeing would be worth further exploring.

Conclusions

In exploring (un)sustainable electricity consumption practices at the upper limits, based on ethnographic research among households with high (but not unlimited) financial and socio-cultural capital in Geneva, Switzerland, we engaged with social practices theories and the sociology of consumption to uncover how people in this group use electricity in their everyday lives, how this relations to social norms and standards within the domestic sphere, and how feelings are expressed in relation to changing consumption patterns.

Notions of excess are very much relative: since there are always people with more stuff than others, there is no sense of excess in relation to overall lifestyle for people in this group. Rather certain features in the domestic sphere, such as appliances, are presented as perhaps excessive in the context of an interview on energy consumption, but also necessary. What other people are doing in this domestic sphere and among this social group is relevant: trends catch on, such as new the Nutri Bullet, which may eventually fade in popularity, or the more permanent two-dishwasher kitchen, which could become the new normal over time. The notion of lock-in is relevant here, normally used to describe path dependency in relation to infrastructure and technologies; for these households, they are locked-into using certain appliances and home features, such as a blender or swimming pool, simply because they are there. They also acquire new appliances in relation to the size of their homes; lack of space is the primary drawback or not acquiring more stuff. They are also locked into social standards: maintaining order and cleanliness is important, as is the aesthetics of the home, towards other family members and friends. Aesthetics are important, but convenience is not being sacrificed overall. The arrival of a new stove top might warrant a redesign of the kitchen, for example. The redesign of a kitchen might, in turn, imply a smaller refrigerator with no ice making feature, as this might interfere with the streamlined look of the kitchen cabinets. Backup refrigerators are then required, in basement or garage areas.

That being said, these groups have had experiences living with much less stuff, in different contexts and different times, and also have a desire to slow down the tempo of their life and downshift to a different form of consumption. In specific contexts where consumption is restricted, for example in the off-grid summer home in Spain, this group has the economic and cultural capital to find solutions and reduce overall consumption. The notion of downshifting came up in the interviews, but what this would actually look like in practice was not ascertained. The norm around "individual freedom" is quite strong, even if people are sometimes contradictory in that they would like to live in a socially just world where resources are more equitably distributed, in their discourse they are against any infringement on personal freedoms. This was slightly less pronounced in the French-

speaking interview, as Saskia is born to an American mother, but has lived much of her life in Switzerland and seemed more engaged as a citizen. People can vote to change the system, in her view. In general, friends are often used as a reference point for what ought or should be done, in the home and in life in general. Changes to consumption patterns, through voluntary or imposed restrictions, would therefore be more successful if they emerged and were maintained through social networks.

Feelings of entitlement develop around expectations of what the domestic sphere should look and feel like, which could also be the case in other socio-economic groups – but in the case of this group of expats, the size and number of homes means that quite some work is required to maintain this standard. This form of home-making is put in place by the main woman of the house, mostly with the support of domestic help – also female. The bread-earning men, and the children, as well as the guests, are thus entitled to a certain standard in the home when it comes to comfort and cosiness. Homes are immaculately kept and are developed in accordance with taste preferences, and therefore cleaning and tidying is a daily activity. However, when it comes to teenage children, some respondents feel that they are developing a sense of entitlement that they did not necessarily earn, particularly when it comes to their conspicuous consumption and sharing of these experiences with their peers. Notions of ownership are changing, however, in relation to ICTs: people are acquiring less goods, and sharing more music, books and other digital items.

Throughout all of the interviews, the significance of the social realm was highly apparent. The advice and recommendations of friends, what other people are doing in their social group, are all significant. There would be a need for trend-setters, within this social group, to take the lead in engaging with more sustainable practices. That beings said, maintaining social capital is also time intensive. Another opportunity would lie in making it less desirable to keep up with the social realm, perhaps in relation to time and health. As Rada explained:

> *Yes, I wish there could be a pause button, you know, pause, rewind... pause and rewind (...) Or just, you know, just um... there's too much, too many things to remember from passwords to telephone numbers to grocery lists to kid's activities, your life, your hairdresser appointment, your this appointment, it's become a point where it's like, enough.*

Restrictions have been experienced by this group, in the past and in other contexts, and could be envisioned, but this would depend on how the restriction is formulated and by whom. In contrast to other less affluent groups who, in interviews, expressed an interest in fairness when it comes to restrictions ("I would only do it, if everyone else was also doing it"), this group was more concerned with who would be formulating these restrictions. This goes back to whom they trust: in this case, trust is centred around peer groups and family. Social networks are therefore both a medium for maintaining the status quo, as well as a possible vector towards inciting changes for sustainable consumption transformations.

Acknowledgments

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Breaking through the behaviour impact gap and the rebound effect in sustainable consumption

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Introduction

The paper addresses the challenge how environmentally friendly and climate-friendly consumer behaviours could exert more noticeable impact to the environment and climate. Individual strategies result in somewhat reduced environmental loads for committed consumers but this reduction cannot offset the total impacts of the current socio-economic configuration: consumers in higher income countries tend to pollute more. According to Sanne (2002 consumers are locked into unsustainable lifestyles (e.g. by social norms) even though they are not willing and happy to act unsustainably. He argues that consumers are rather locked-in (to certain behaviours) by circumstances. Thogersen (2005) lists societal infrastructure, available product and service alternatives, constraints determined by nature and scientific uncertainty among factors which constrain consumers in choosing their lifestyles. Changing behaviour patterns is difficult, because individual behaviours are deeply embedded in social and institutional contexts. This institutional framework need to be changes and this paper focuses on what can be done in order to move in that direction.

The behaviour impact gap (BIG) problem

A number of studies have already addressed the awareness–behaviour gap in different areas. Kollmuss and Agyeman (2002) found that demographic factors, external factors (e.g., institutional, economic, social, and cultural), as well as internal factors (e.g., motivation, pro-environmental knowledge, awareness, values, attitudes, emotion, locus of control, responsibilities, and priorities) are significant antecedents of pro-environmental behaviour. Barr et al. (2010), for example, found that environmental attitude is a significant factor in choosing travelling modes in everyday life, but not for holiday travel. The latter is much more influenced by socio-economic conditions—leading to a conflict between personal values and societal expectations.

There are not many paper, though, relating pro-environmental behaviour to actual impact. It is inherently assumed that behaviour change, when finally get induced, would automatically translate into environmental impact reduction. This assumption does not necessarily hold, though. Gatersleben et al. (2002) compared energy use and pro-environmental behaviour and found that respondents who report more pro-environmental behaviour do not necessarily use less energy. Their paper is a rare example of relating impacts to behaviour.

Even pro-environmental behaviour may not achieve the expected reduction in environmental impacts whenever socio-economic conditions or institutional framework counteracts. One person separating waste will not make any difference if that waste is dumped to community waste by the waste management company. Eco-products

sometimes are not very different from their ordinary competitors, misinforming consumers about the impacts of pro-environmental behaviour. The amount of post-consumer recycled waste gained from recycling companies may fall far below what it should be, considering the recycling rate reported by consumer surveys. Moreover, the amount of waste European families produce is increasing despite their increasing efforts to reduce it.

In sum, most reviewed research emphasizes the importance of uncovering why actions and awareness are not always related. We should, however, go a step further and ask whether pro-environmental behaviour actually results in a reduction in ecological footprint.

Csutora (2012) proposed the behaviour impact gap problem (BIG problem) as conceptual framework for inconsistencies that can be found between behaviour of consumers and the outcome observed. A BIG problem is confronted whenever the required behavioural change is achieved, but the observed ecological effect is minor or missing.
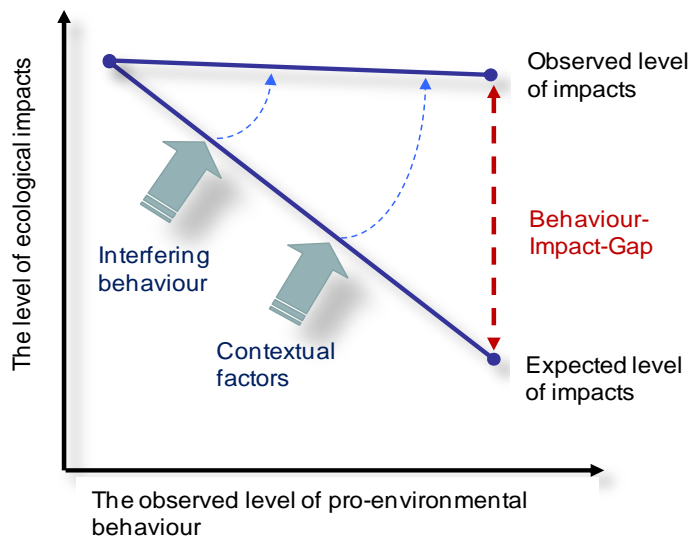
Figure 1: The behaviour impact gap problem

Contextual factors, such as income change, consumption patterns of influential social groups, marketing, GDP growth, etc. serve as a kind of "speedwalk" in this process. The speed of our own walk and the speed of the speedwalk add up. Socio-economic conditions represent the speed of the speedwalk. Environmental awareness and voluntary actions represent the speed of our own walk. We may proceed into the direction opposite to our intentions and our own walk.
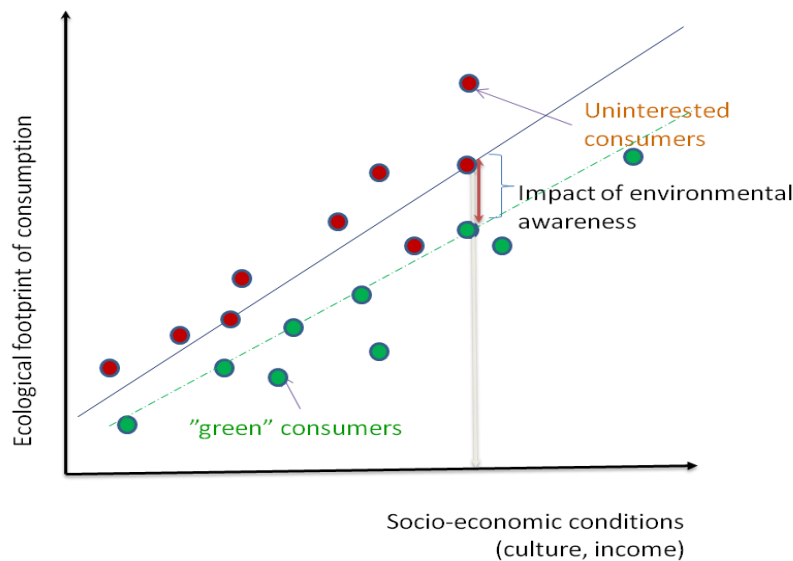
Figure 2: elements of the speedwalk effect

Csutora (2012) found no significant difference between the carbon footprint of green and uninterested consumers due to high impact of habitual behaviour and contextual factors moving us into the direction opposite to our intentions. Green consumers tend to have higher income and consume more electricity and mobility, although do it in a more environmentally friendly way. Their ecological footprint does not significantly differ from that of uninterested consumers, even when their environmental attitudes do translate into environmental action. This problem goes well beyond the well known attitude behaviour gap, stating that even voluntary individual behaviour change, when finally achieved, may not be sufficient to induce the required ecological impact reduction at global scale. The research provoked disputes both in the research community and among environmentalists. Later other studies came into the same conclusion.

This paper identifies aspects on how we can get over the behaviour impact gap problem. It identifies five major problematic areas and frames the solutions proposed by diverse fields of literature.

Overcoming the behaviour impact gap

- The socio-economic conditions and institutional framework contributes to the BIG problem in at least five different ways:

- We tend to monitor pro-environmental attitude or action and neglect to monitor the actual environmental impact of such behaviour.

- We focus on politically acceptable actions rather than on big impacts

- Sector policies contradict each other, beneficial impacts of environmental policy are often offset by food policy or energy policy.

- The prevailing rebound effect is not offset by an effective price system

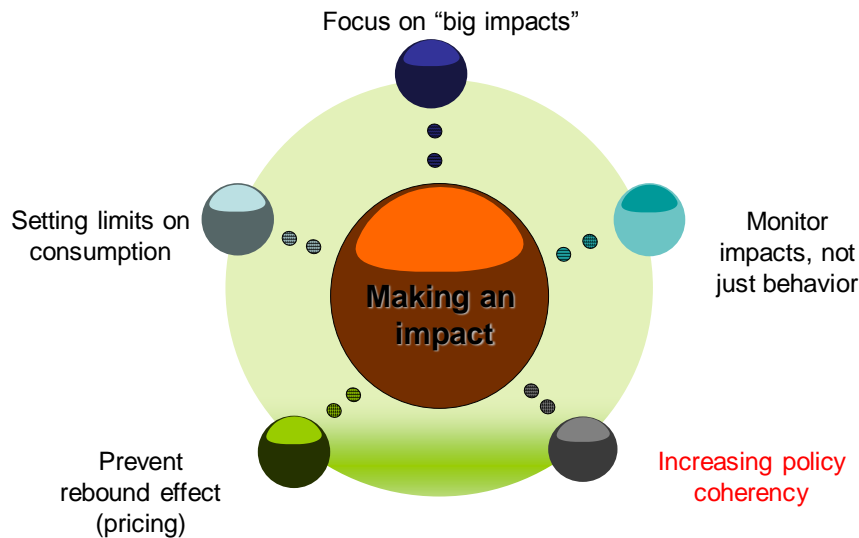- We don't want to set limit on consumption.

Figure 3: Overcoming the behaviour impact gap

In the following we provide more details on these factors and frame some policy implications regarding how we could deal with them.

Better integration of sector policies: harmonization of regulations

The first major approach covers better integration of sector policies. Non-harmonized regulations may extinguish the effect of climate policy. Evidence tells that food, energy and climate policies may conflict with each other. While environmental policy intends to decrease waste and pollution, some climate and food policies directly oblige to waste more.

Two prominent examples include the swine fever act and the straight cucumber directives. Fuits and vegetables that looked different were not allowed to be marketed in the EU. "Cucumber Regulation" (EEC No 1677/88) and the "Carrot Regulation" (EEC No 730/1999)
 set EU-wide quality standards on how vegatables should look like in order to become marketable. Healthy, different looking vegetables got discarded due to their appearance contributing to wasting of limited resources. "Straight cucumber" standards seemed ridiculous   during   crises   time   and   got   partly   phased   out.
The swine fever act 75/ 2002. (VIII. 16.) Ministry of Rural Development) banned feeding animals with food waste. It is only allowed to be used for dogs, animals used for fur, shelter animals under strict conditions. Food waste is defined as: ‚Any food waste from restaurants, food processing, canteen or from the household of farmers.'' Food waste, increasing in quantity, is a hot environmental issue, with certain food safety regulations directly contributing to the problem by banning reuse of this waste for animal feeding.

Thus, ensuring policy coherence may increase the effectiveness of consumer policy. The institutional framework helping increase consumption-side efficiency is also important. While high level resource efficiency is achieved at the production side, increasingly high level of consumption waste can be detected in several fields (e.g. food). The solution hides in the institutional and legal settings, as well as conflicting interests of consumers, which may hinder the progress on the consumption side. Communication strategies should also

be better-targeted and promote major pro-environmental activities even when they are politically sensitive.

The Integrated Product Policy of the European Union (IPP) suggests a variety of regulatory tools like economic instruments, substance bans, voluntary agreements, green public procurement, environmental labelling, product design guidelines, awareness rising etc. to minimize the negative environmental impacts of products throughout their life-cycle phases (http://ec.europa.eu/environment/ipp/home.htm). Specific measures were targeted at managing waste, green product innovation, creating markets, transmitting environmental information, and allocating responsibility (http://ec.europa.eu/environment/ipp/pdf/ippsum.pdf).

The assessment of the implementation of the Integrated Product Policy of the EU found that cooperation between different ministries if often missing in the member states which hinders the effective application of the IPP concept. Furthermore, member states have no obligation to unanimously implement the elements of the IPP which leads to prioritization and hence significant differences in the practice of member states. Some countries adopt the life-cycle approach in a more serious manner while the application of its principles in other member states is rather limited. Product-related taxation is still dominated by waste disposal charges, although eco-taxes on fuels as well as tax credits to promote the purchase of energy-efficient devices are spreading. The principle of producer responsibility is widely accepted at the policy making level, however, it is often related only to end-of-life responsibility, instead of covering the whole life cycle of the product. Member states with a consistent integrated product policy are exception rather than rule. (http://ec.europa.eu/environment/ipp/pdf/bio_ipp.pdf)

Harmonization of regulations should be based on the main aim of IPP, namely how to minimize the negative environmental impacts of products by looking at all phases of their life-cycle and to take action where it is most effective (http://ec.europa.eu/environment/ipp/index_en.htm). Measuring the effectiveness of product policy tools is difficult, as those tools usually exert their effect in a combined way and cannot be assessed separately. Synergies should be more consciously utilized through harmonization of the policy elements.

Increasing consumption-side efficiency through appropriate institutional framework

During the implementation of the Integrated Product Policy of the EU, institutional resistance to change and introduce new concepts like the IPP, as well as the underestimation of demand-side (or consumption-side) measures compared to supply-side measures could be witnessed (http://ec.europa.eu/environment/ipp/pdf/bio_ipp.pdf). Consumption-side efficiency could be considerably increased by appropriate institutional framework which aims to make consumer-focused measures 'user-friendly' and desirable. Availability and prioritization of resource-efficient, low-impact products, compared to their more polluting alternatives accelerates the spreading of those products within society, and not only among environmentally conscious consumers but also among mass consumers. (Csutora – Zsóka, 2011). Changing price relations and market circumstances for advantaged products creates demand, help those products break through and reach a critical mass to become profitable and achieve economies of scale. On the other hand, ban on high impact products, e.g. conventional bulbs, hovers with high energy consumption serve as good examples of this kind.

Communication strategies targeting impactful but sensitive issues

Tabi at al. (2013) found that consumer tend to overestimate the impacts of some pro-environmental actions, while underestimate the impacts of other influential measures. In the field of household energy consumption overestimated impacts include waste separation, turning lights off, while underestimated actions include stand-by killers, setting lower temperature, retrofitting insulation, etc. Sensitive issues requiring major behaviour change tend to get underestimated, while actions with high media coverage tend to get overestimated.

In 2008, the assessment about implementation of the IPP revealed some major barriers in the member states which to some extent related to the lack of awareness in the society regarding the environmental impacts of products and the weak socio-cultural orientation regarding lifestyle and demand-side measures. Consumers often feel confused regarding the meaning of the available product labels and they are not well-informed about which lifestyle changes would be necessary to make a significant positive impact (http://ec.europa.eu/environment/ipp/pdf/bio_ipp.pdf).

The dominant approach to sustainable consumption and production – formulated in Johannesburg in 2002 and spread by the UNEP – promotes "social and economic development within the carrying capacity of ecosystems by addressing and, where appropriate, delinking economic growth and environmental degradation through improving efficiency and sustainability in the use of resources and production processes; and reducing resource degradation, pollution and waste" (http://www.unep.org/rio20/About/SustainableConsumptionandProduction). This definition focuses purely on efficiency and a more sustainable use of resources, while it avoids mentioning the necessity of any inconvenient lifestyle changes which need more sacrifice from consumers like reducing the level of consumption in absolute terms or consistently (not just selectively) change polluting patterns of individual lifestyle.

According to the latest Eurobarometer survey on the "Attitudes of European Citizens towards the Environment" (Special Eurobarometer 416, 2014), respondents reported to be aware that environmental problems directly influence their everyday life and that they have a role in protecting the environment. The most frequently implemented environmentally friendly actions of consumers are strongly resonating with the main concerns of citizens regarding the environment. Those concerns relate to air and water pollution, amount of waste, depletion of natural resources and health impacts of chemicals. The most popular actions are waste separation for recycling, saving energy, saving water, and travelling in an environmentally friendly way. Results of a representative survey from 2010 reflect the same tendency in Hungary (Zsóka, 2012).

European citizens seem to be convinced that those actions should gain top priority, but they are not necessarily aware of the environmental benefit of those actions, compared to other behaviour alternatives. Preventing waste from emerging instead of separately collecting it when already emerged is definitely more effective from environmental point of view, however, it is a sensitive issue because it can be reached either through less waste-intensive products (products with less packaging, longer lifetime, less materials, leasing instead of ownership, etc.) or simply through less consumption. The former alternatives can be more easily communicated; while less consumption is far from mainstream consumer policy approaches. Energy saving can happen through buying more efficient household devices and light bulbs, more conscious use of stand-by function, modifying the temperature of heating/cooling, applying insulation for walls, changing windows/doors, etc. Some of those actions are popular like more efficient household devices and light bulbs while people seem reluctant to implement others – for various reasons.

In Hungary, habitual behaviour related to physiological needs like the temperature of heating seem to be difficult to change, however, proper communication can be successful in those areas. If motivations behind pro-environmental activities are clear, communication can succeed to overcome the barriers caused by the sacrifice related to those activities. In case of heating temperature, emphasizing the cost saving opportunity as positive motivation for consumers may overrule the physiological inconveniences of lower temperatures in winter time. The same is true for actions where a higher initial investment as a material sacrifice is necessary – like in case of insulation for walls or installing a renewable energy system or home – but focusing on the (reasonable) payback period in the communication process, the restricting impact of the sacrifice can be decreased.

Changing travelling habits is a double-edged sword. Respondents in both of the above cited surveys tend to express a very high level of agreement regarding the use of public transport, walking and cycling, while almost the same persons refuse to reduce the use of their own car (see Special Eurobarometer 416, 2014 and Zsóka 2012). The overlap is not 100% because some respondents in the sample have no car, but a screened sample shows the same contradiction. Habitual behaviour can be extremely strong and may result in a selective practice of pro-environmental behaviours.

Several consumers tend to proceed compensating behaviour meaning that they are compensating their polluting behaviour patterns (like driving a prestigious car, living in a big house, consuming a lot) by pro-environmental actions (like buying a hybrid or electric car as second car, consuming consciously, supporting an environmental organisation, building an energy-efficient house, etc.). Those trade-offs often result in the above described behaviour-impact gap, where the burden of (over)consumption overcompensates the pro-environmental features of lifestyle.

Measuring and analysing the elements of the ecological footprint of consumers help find critical features of lifestyle where even a small behaviour change results in significant improvement. Communicating the importance and significance of those consumption patterns is necessary to reach considerable positive impact. Food consumption is a perfect example for this phenomenon. In Hungary, the society is not well-informed about the environmental burden of meat consumption and the fact that even a small self-restriction of meat consumption would significantly decrease the ecological footprint of the nation and the individuals. Meat consumption is deeply rooted in the culture, and our representative survey of 2010 justified how reluctant people are in giving up their meat eating habits (Zsóka, 2012). Sensitizing the society and properly addressing this and similar culturally stoned issues are

Preventing the rebound effect through appropriate energy taxation

Carbon emission saving from energy efficiency is frequently eaten up by rebound effect. Improved energy efficiency may not necessarily lead to reduced energy demand, or even backfire, that is increase in energy demand may prevail. "Energy demand is an economic concept and that demand will not be reduced in the absence of rising energy prices and policies to reduce the economic barriers to improved energy efficiency." (Sorrel, 2015, p.74).

The presence of strong rebound does not mean that efficiency-enhancing policies are irrelevant: rather it suggests that such policies operating alone are insufficient to generate environmental improvements. The implication is that a co-ordinated portfolio of energy policies is required. (Hanley et al. 2008).

Such policy should include a system of rising energy prices that could offset the rebound effect. Constantly rising energy prices would be able to correct for the rebound effect and

limit demand for fossil fuels. Political acceptability of such a price system is however highly questionable.

Conclusion and policy implications

A possible reason for the BIG phenomenon is that political acceptability dominates over ecological effectiveness. The rebound effect may also contribute to the apparent lack of effects of individual behaviour. It can be overcome by implementing energy taxation as was proposed by Saunders (2015). Finally, monitoring the impacts, not just the behaviour patterns enables to reveal contradictions and opens the gate for intervening effectively where the BIG problem is witnessed.

Contextual factors beyond the control of consumers work against the success of voluntary environmentalism. Building purely on voluntarism and awareness-raising appears either inadequate or inefficient at reducing ecological impacts. A deeper re-structuring of the socio-economic determinants of life, including the culture of consumption, is necessary.

To overcome the barriers of easy but insignificant consumer actions tend to detract public attention from those behaviour changes which would really make a difference. Communication strategies are needed which dare to target more sensitive issues and to challenge social acceptance of those issues

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Discussant Contribution

Implementing the "limits" approach, with social justice

Halina Brown

Tellus Institute

The underlying premise of the three papers is that consumption behaviours are deeply embedded in the cultural, institutional and economic context in which people conduct their lives. Marlyne Sahakian illuminates this phenomenon by directing her ethnographic research lens on the lifestyles of high earning households (probably somewhere in the top 1-3% of the income pyramid, by the US standards). Maria Csutora and Agnes Zsoka provide data showing that even in the cases where people take deliberate actions toward environmentally responsible behaviors, these actions have minimal or nil impact on their carbon footprint (the author refers to this phenomenon as behaviour-impact-gap, BIG). The authors of these two papers then consider what role public policy might play in fostering lower consumption lifestyles and reduced carbon footprint (CF). The third paper in the cluster, by Veronika Kiss and Klara Hajdu, specifically focusses on one such policy intervention: imposing a national cap on carbon footprint, combined with tradeable personal carbon allowances.

Sahakian's paper explores electricity consumption practices among the expatriate families living in Geneva, where husbands are corporate executives. Their children attend private schools and the families live in villas in Geneva, with secondary luxury homes in the Alps and/or abroad. The study is a welcome addition to the body of research on household carbon footprint as a function of income because we have very little data in that regard for top earners. The study shows the extent of the lock-in into high consuming lifestyles driven by the fact that in this tight social group a home is the public face of the family: denoting social status, group membership and family values. These are complicated, busy, obsessively clean households which require constant attention. This research also subtly reveals class prejudices and the sense of entitlement among the women being interviewed. While these well-educated, worldly and highly adaptable women express their knowledge of, and concern for, the environment and global climate, they flatly reject the idea of imposed societal limits on energy consumption as an infringement on personal freedoms.

The paper by Csutora and Zsoka identifies several approaches to reducing the behaviour-impact gap. One of those entails better integration and harmonization of various sectoral policies at the EU level, which in their current format often contradict each other. Policies with regard to food are a striking example. On the one hand, new policies and initiatives have emerged in the EU in recent years seeking to reduce food waste while on the other hand the stringent quality- and health-related food policies lead to more waste. The authors argue that EU Integrated Product Policy, IPP, provides a useful framework for better harmonization of food regulations. Other interventions proposed by the authors include: more energy efficient consumer products combined with energy pricing policies to prevent rebound effects; and strategically designed communication campaigns focusing on social practices which have significant potential impacts on carbon footprint, such as

Sustainable Consumption and Social Justice in a Constrained World

indoor temperature or meat consumption (as opposed to energy-irrelevant waste recycling). The most radical proposal in this paper is to impose limits on consumption. Unfortunately, the paper does not develop this proposal beyond listing it.

This is the starting point for **the paper by Veronika Kiss and Klara Hajdu**. Their paper describes in detail two proposed schemes for tradeable personal carbon budgets designed to meet the absolute national caps that would be determined by the climate-related international agreements. One of the two has been worked out in Hungary and the other one, the European Energy Budget scheme, in the UK by an advocacy group Resource Cap Coalition. The schemes seek to account for differential economic impacts of such a policy on households in different income brackets and on their varied capacities to invest in energy efficiency. The authors of the paper are also sensitive to the fact that country specific circumstances will complicate the implementation of the scheme.

The three papers give scant attention to the political dimension of implementing the policy ideas they consider. This is especially the case for the Kiss-Hajdu work. Sahakian's study clearly shows that most resourced and intensely consuming segment of the population, who also has considerable political power, would vigorously oppose any limits on energy consumption. Furthermore, the political elites around the globe identify with this corporate executive social class in terms of income and aspirations. The opposition would be publically framed in terms of protecting individual freedoms while personally be fueled by the sense of an entitlement and rightfully earned privilege. Among the policy recommendations presented by Csutora and Zsoka pricing of carbon (to offset direct rebound effects) and setting absolute limits on consumption are the most potentially impactful policies but the authors offer no analysis of the implementation and political feasibility of these proposals.

The essence of the dilemma of household energy consumption lies in the fact that energy consumption by high earners should receive the greatest attention from policy makers but there are most resistant to policy interventions, both politically and practically. Research shows unequivocally that within countries income is the best predictor of a personal carbon footprint. In the US Weber and Matthews (2008) showed that the relationship between household expenditures and carbon footprint is fairly linear up to the $100,000, with signs of slowing down at high expenditures. The work by Ummel (…), which used income percentile categories as an independent variable, shows that CF is approximately linearly proportional to income among the bottom 90 percentile of earners but does not rise as fast as income among the top 10 percentile of earners (the latter finding indicates that in this bracket a portion of earnings is not spent on goods and services but rather saved). That means that pricing carbon will have little effect on energy consumption in this income category. The study estimates that the top 10% earners take home 45% of national income while consuming 25% energy; and the bottom 40% of earners take home 10% of income while consuming 20% of energy. In other words, since low income families spend proportionally more of their family budget on energy than high income families energy consumption as a reflection of quality of life has different meaning in different income categories.

For these reasons we need a suit of policies tailored to different income categories, rather than a single overarching policy such as personal carbon cap-and-trade scheme. The policies need to account for behaviors, needs, attitudes and political clout of households in different income categories. I propose that we consider the following policy approach:

For the top earners (perhaps the top 10 percentile). This group will resist absolute limits, will not be especially affected by carbon pricing, and will probably be little affected by campaigns intended to convince them to lower their thermostats or change their diet. For

these consumers, reducing the after-tax income in order to affect their lifestyle choices – e.g. house sizes, number of residences, luxuries such as heated driveways, and so on – should be considered. A steeply progressive income tax (which is being advocated for other reasons by various social reformers and activists) would accomplish that objective. It may not affect the super-rich top 1% earners but perhaps it will affect the next income group, somewhere between 10-1%. Further research is in order to refine this idea (see also Kenner 2015 for elaboration of this topic).

For the low earners (in the US perhaps the bottom 40 or 50 percentile). Emphasize that their current low CF qualifies as the most sustainable consumption lifestyle model relative to the society at large, and seek to preserve it. Rather than focusing on increasing income in this category, which will most likely result in increasing their CF, provide this segment of the populations with access to goods and services that will make their lives dignified. These would include access to decent and energy efficient housing and everyday technologies, quality education, childcare, open space, recreation, nutrition, and others.

For the in-between earners. This category might need a range of policies that appeal to their different cultural capital and inclinations, discretionary income, lifestyles and their conceptions of what constitutes a good life. Some segments of this group -- for example educated millennials who, at least in the US, increasingly value city life over traditional suburbs -- might respond to the imaginaries that present a good life as: simple, "authentic localism", car-free, less rushed, and focused on human relationships and experiences over things. Others in the in-between income category might be most affected by a ban on advertising in public places or to children. Others again might respond to higher energy prices. Further research should guide the development of a suite of policies targeting this income category.

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Note taker report

Implementing the "limits" approach, with social justice

Sylvia Lorek and Edina Vadovics

Sustainable Europe Research Institute, Germany

GreenDependent

Energy consumption caps and quotas: effective solutions?

The majority of discussion in this session evolved around the energy quota system.

Regarding very specific questions as: *How high will be the energy budget for the citizens? Is it calculated already? How human needs are reflected? What is the concrete level of the fair share?* Klara clarified that the scheme shall start with the energy uses on a started year then it is going down annually until it is down to the fair share. This however left open the assumption of some participants that the fair share would most likely be so low that a quota scheme is impossible.

The impression shared by a majority of participants was that caps might be a valuable tool because we have to talk about limits. Caps are one element in a broader picture. However, quite critical remarks considered the fact that the quota system would be based on market principles. The market renders power which is invisible and there the poorer have no power at all to negotiate. Very general it was criticized that this would reinforce market thinking, competition etc. A more elaborated position pointed out that citizens would shift to private entrepreneurs now trading with former neighbors etc. So polarization among the groups was an expected side effect of a cap scheme, e.g.

- If energy is THE quantitative measurement some social groups might run into problems (disabled, poor).
- Wouldn't the possibility to sell energy quota set the poor under pressure to go even below the fair share?

However, it was argued, the alternative discussed is carbon taxes which would be even worse to the poor.

The discussion can be summarized in a way that caps were perceived as one element in a broader picture. In addition we have to question power and infrastructure.

The role of rich consumers in un-sustainable energy use

Further on, discussion arose which role rich consumers (can) play in un-sustainable energy use. What is in the unsustainable consumption portfolio of the rich?

Marlyne elaborated the elites actually are a big problem because they are powerful and well connected in the globalized world. The rich will go where no limits are, and they have no sense of excess. Their individual security is an important aspect. They will take care as good as possible that they have their energy.

Shame is an important tool, and so are living up to the social norms. For the well-to-do and people in 'higher' society, observing norms is very important - so, perhaps, if the norms were different, they would be more ready to change? Monitoring impacts has been very powerful in communicating change.

Emerging general topics

As part of the social justice aspect the increasing privatization of previous public places appeared as an issue. Former parks are changed into shopping malls excluding non-shoppers respectively transfer previous outdoor leisure activities to (at least window) shopping events. Not at least the Taksim protests in Istanbul 2013 evolved over the try to counteract that public space is privatized. The question evolved: How taking back the public space to support dignifying participation of the poor in urban lifestyles.

IV

Potential actions

Note taker reports

Potential actions for sustainable consumption and social justice in a constrained world

Marlyne Sahakian & Edina Vadovics**

*University of Lausanne, **GreenDependent Institute,

A final session moderated by Barbara Muraca lead to discussions around how sustainable consumption and social justice could become the new normal. Some participants felt that promoting and marketing the good life in a constrained and equitable world is equivalent to tinkering at the margins, and using the tools of neoliberalism, yet a positive narrative around the need for change is currently missing from general discourse. Some discussions were had around the need for individual or social imaginary, for example recognising small footprint lives, or promoting social cohesion through attention to fair taxation, access to public spaces, and economies that promote solidarity and collectivism. In that respect, the framing and conditions for more sustainable consumption were seen as consisting not only of physical and technological, but also related to institutions, religion, education and social norms.

The participants concluded with an exchange around these enabling conditions. There is a need to hear from other voices, outside of academia and across different cultures and contexts. While we may be speaking in different terms, what other communities share this vision for transformation and could become allies? For example, younger generations working with virtual communication tools. There was an agreement that immediate tools are needed, but the wrong tools also need to be eliminated – such as subsidies that cause environmental harm. While resource caps are necessary, they do not solve the problem if used alone, participative engagement is needed, as well as monitoring and measurement.

Finally, workshop participants discussed how it would be possible to leave their comfort zones, and challenge themselves by discussing how they, as researchers and practitioners, can make changes. What are they all going to differently after the workshop? What can they, as researchers and practitioners, do after the workshop to make the necessary changes discussed at the workshop happen, and bring them closer to their own lives? A rather inspiring discussion in smaller groups, and then in plenary followed. Below is a non-exhaustive list of ideas and suggestions that came up during the discussion:

- We need to challenge assumptions. But even questioning them is about leaving our comfort zone versus asserting a (new) position.

- Forget about people's comfort zones, just say it like it is. Just start doing it, and your comfort zone will adjust itself to the new situation.

- We need people and communities living sustainable footprint lifestyles as examples, and these examples do exist. However, we find them inspiring or weird?

- Do actions lead to change, or do we go beyond business as usual?

- We need to put a mirror to our own lifestyles and those very close to us who make us comfortable.

- We could consider selecting workshop presenters and participants differently. Why not invite 'weirdos' or seemingly weird people to workshops? Select participants to workshops following this principle.

- Let us invite experts from different fields to workshops.

- Farm work for everyone: everyone should engage in growing food in some way.

- Talk to a 'Trump supporter', or in other words, to people we usually do not talk to or ignore. If you do this, it will help adjust your comfort zone.

The discussion in and outcomes of the workshop were then presented and further discussed at the 5th International Degrowth Conference in a special session. The picture is an illustration of this presentation and discussion.

SCORAI Europe special session at the 5th International Degrowth Conference

V   **Annex**

Program

Sustainable Consumption and Social Justice in a Constrained World

The Office of the Commissioner for Fundamental Rights
H-1051 Budapest, Nádor u 22.
For additional information on the workshop location please visit:
http://www.ajbh.hu/en/web/ajbh-en/how-to-get-to-the-office

DAY 1: August 29, 2016. 1:00pm-6:00pm (lunch from 1-2pm).

Welcome

- Marcel Szabó, Ombudsman for Future Generations in Hungary: Future generations and just consumption in a constrained world

Opening

- Sylvia Lorek: introduction to the workshop and SCORAI Europe

- Edina Vadovics: introducing the principles behind the practical organization of the workshop

Session 1: Defining the limits in relation to wellbeing and planetary boundaries

How can we grasp sustainable consumption limits, how are they defined? What heterodox concepts and theoretical strands need to be taken into account? How do limits relate to human needs, human development and wellbeing on the one hand, and planetary boundaries on the other?

- Doris Fuchs and Antonietta Di Giulio: Consumption corridors: integrating the good life and justice in sustainable development

- Joachim Spangenberg: Sufficiency, degrowth and sustainable consumption

- Lewis Akenji: Ossified materialism: on achieving Absolute Reductions

Chair: Marlyne Sahakian   Discussant: Anders Hayden   Note taker: Edina Vadovics

Session 2: Grappling with social justice

How does social justice relate to sustainable consumption? What perspectives need to be taken into account? (gender, class, socio-economic status, etc.) What transformative tools are currently available, towards more equitable forms of consumption? How do we quantify and qualify what is meant by social justice in a constrained world? What lessons can we learn from differing contexts? (cities vs. rural, developing countries, emerging economies, countries in transition).

- Filka Sekulova: Sharing in urban and rural context – drivers and implications

- Edina Vadovics and Simon Milton: Social justice in a constrained world: introducing Convergence Mapping

- Janis Brizga: Multiple gaps in sustainable consumption – climate justice perspective

Chair: Klára Hajdú   Discussant: Philip Vergragt   Note taker: Ágnes Zsóka

Dinner

DAY 2: August 30, 2016. 9:00pm-2:00pm (lunch from 12-1pm).

Session 3: Implementing the "limits" approach, with social justice

How can restrictions come about, either voluntary or imposed? How do restrictions relate to collective conventions or general understandings of entitlement and excess? How do people understand their roles, in relation to social change? What examples exist around policies, institutional changes and political interventions? How can policy measures further support absolute reductions? What other efforts are necessary?

- Veronika Kiss and Klára Hajdú: Limiting energy consumption while considering equitable distribution

- Marlyne Sahakian: (Un)sustainable energy consumption at the upper limits – Social capital and feeling rules among Geneva expats

- Mária Csutora and Ágnes Zsóka: Breaking through the behaviour impact gap and the rebound effect in sustainable consumption

Chair: Edina Vadovics   Discussant: Halina Brown   Note taker: Sylvia Lorek

Session 4: Potential actions

What are the proposed actions towards sustainable consumption and social justice in a constrained world? How can this viewpoint of sustainable consumption be understood as attractive, equitable and empowering, a "new normal", that involves a good life for all in a constrained world? What have the conceptual developments revealed, in terms of setting limits and grappling with social justice? What meso- and macro-level empirical evidence exists, across Europe? What evidence is lacking? What transformative tools exist and which ones are lacking? What is missing from the discussion and needs to be taken into account?

Chair: Barbara Muraca   Note takers: Edina Vadovics and Marlyne Sahakian

Lunch

SC teaching series (1-2pm)

We invite select participants to prepare a 5m talk to be filmed as part of the SC teaching video series, organized by Marlyne Sahakian and Robert Orzanna.

Followed by the 2016 International Degrowth Conference,
taking place from August 30 to September 3, 2016.

Workshop Participants
(By first name)

Participant name	Organization
Ágnes Zsóka	Corvinus University of Budapest
Anders Hayden	Dalhousie University, Department of Political Science
Antonietta Di Giulio	University of Basel
Barbara Muraca	Oregon State University
Doris Fuchs	University of Münster
Edina Vadovics	GreenDependent Institute
Filka Sekulova	Universitat Autònoma de Barcelona
Halina Brown	Clark University
Janis Brizga	University of Latvia
Joachim Spangenberg	Sutainable Europe Research Institute (SERI)
Joseph Slezak	SC expert
Klára Hajdú	Resource Cap Coalition, CEEweb for Biodiversity
Krisztina Campbell	CEEweb for Biodiversity
László Antal Z.	Hungarian Academy of Sciences, Centre for Social Sciences
Lewis Akenji	Institute for Global Environmental Studies (IGES)
Luisa Cartesio	CEEweb for Biodiversity
Marcel Szabó	Ombudsman for Future Generations, Office of the Commissioner for Fundamental Rights in Hungary
Mária Csutora	Corvinus University of Budapest
Marlyne Sahakian	University of Lausanne
Olja Radlovic	CEEweb for Biodiversity
Philip Vergragt	Tellus Institute
Robert Orzanna	SCORAI
Sylvia Lorek	Sustainable Europe Research Institute (SERI)
Szandra Szomor	GreenDependent Institute
Zita Gellér	Ministry of Agriculture

Picture of the workshop

CALCULATING AND OFFSETTING THE CARBON FOOTPRINT OF THE WORKSHOP

Edina Vadovics and Szandra Szomor

GreenDependent Institute

Calculating the carbon footprint

Local workshop organizer GreenDependent Institute worked with its sister organization, GreenDependent Association, to calculate[44] the carbon footprint of the workshop based on the following aspects:

- Travel: distance and mode of transport of participants;

- Number of participants, length of the workshop;

- Energy use at the venue (lighting, cooling, laptops, etc.);

- Food, drinks and catering;

- Handouts;

- Energy used while organising the event.

In general, travel and food, drinks, catering are responsible for the biggest part of the carbon footprint. Travel is especially important in the case of international events when some participants need to or choose to fly.

In order to reduce the footprint of the workshop, local organizers GreenDependent and CEEweb did the following:

- Selected a centrally located venue with easy access by public transport;

- Selected local and responsible caterers (Szatyor to serve food and Koffair to serve drinks);

- Served food that was vegetarian, and was prepared using seasonal and local ingredients;

- Served tap water, locally made juice, and fair trade coffee and tea;

- Used reusable tableware;

- Prepared as few handouts as possible, and use recycled/ eco-labelled paper for printing materials;

- Used wooden clips instead of plastic badge holders – and recollected them after the workshop.

The carbon footprint of the workshop was calculated in tonnes of carbon dioxide. If we consider that some of the workshop participants also attended the 5th International Degrowth Conference after the workshop, and thus their travel related footprint is

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[44] The data was gathered by GreenDependent, and then the calculation was done using the event calculator developed by ENERGIAKLUB (www.energiaklub.hu).

Sustainable Consumption and Social Justice in a Constrained World

adjusted, **the total carbon footprint of the workshop is 10.2 tons CO$_2$**. It is divided between the different components as shown in Figure 1:
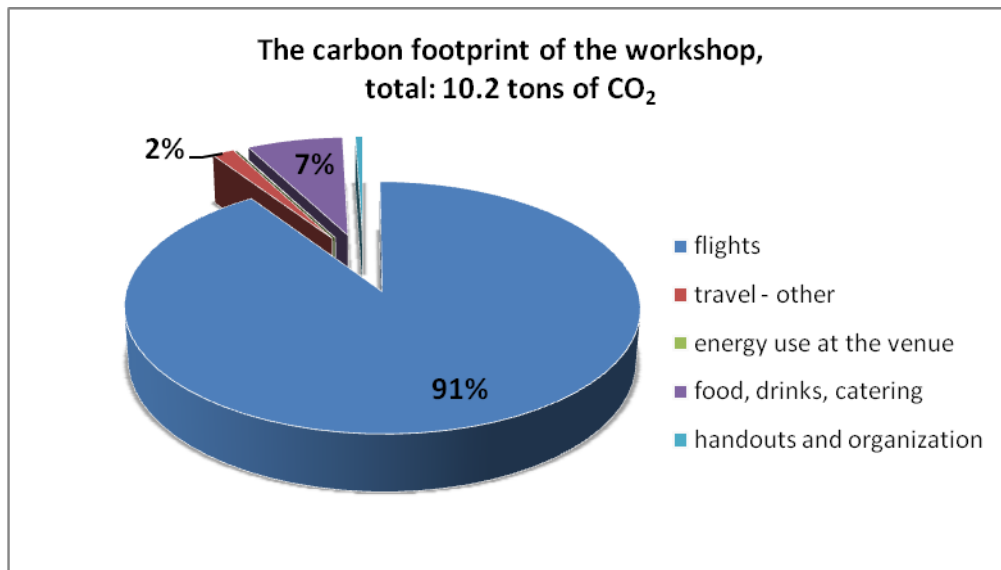

Figure 1: Carbon footprint of the workshop if the travel related component is adjusted due to attendance of the Degrowth Conference

However**, if the travel related footprint of those attending the Degrowth Conference is not adjusted, the footprint of the workshop is 15.07 tons of CO$_2$** (see Figure 2).
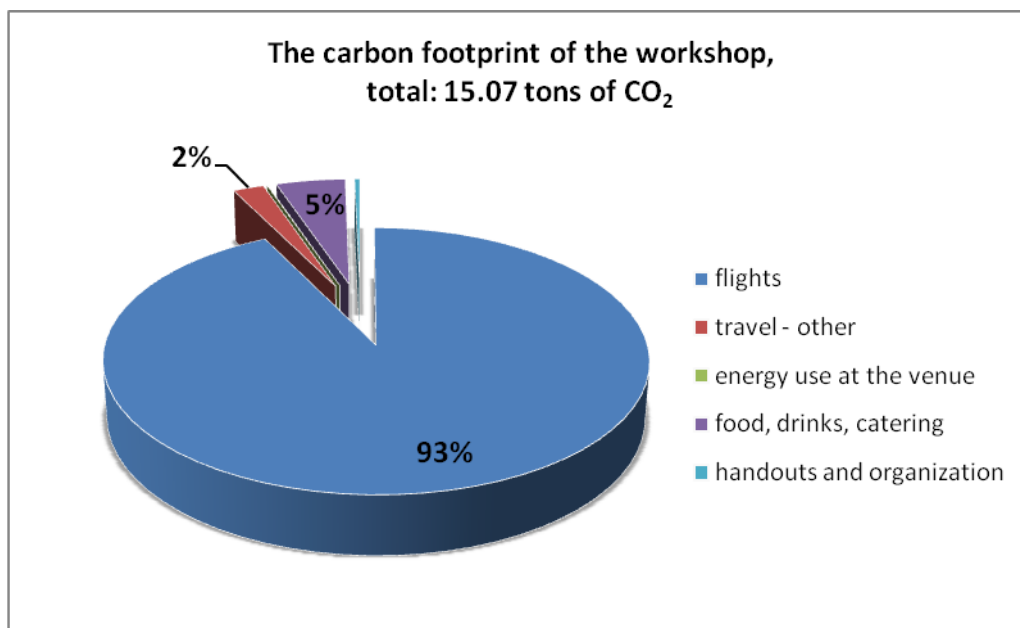

Figure 2: Carbon footprint of the workshop if the travel related component is not adjusted

Offsetting the carbon footprint

GreenDependent has a tradition of offsetting the carbon footprint of events by planting native Hungarian fruit trees, whenever possible with the involvement of the event's participants. Depending on the amount of resources available, the number of trees to be planted is usually determined in a way that they offset the event's carbon dioxide emissions within 1-2 years (and not only by the end of their lifespan). However, for an

international event with 10.2 tons of CO_2 footprint, several hundred trees would be needed.

Apart from offsetting the carbon footprint, native fruit trees are used as they are beneficial for additional reasons:

- they have useful yield and enhance local food production possibilities for their owners; and

- this way event organizers and participants contribute to preserving biodiversity and local cultivars. The trees are purchased by GreenDependent from a gene pool called "Tündérkert", located in Pórszombat (Zala county, West Hungary).

At the workshop, participants were offered the opportunity to donate money for the purchase of fruit trees. From the donations thus collected, and with an additional donation of 10 trees from the nursery to support the good cause, altogether **40 native fruit trees were purchased and planted** by GreenDependent, with some involvement from local workshop participants.

The trees were planted in:

- various school gardens, as a result of cooperation with the Foundation for School Gardens *(Iskolakertekért Alapítvány)* in Hungary (23 trees);

- the garden of a shared NGO house *(Civilház)* in the town of Gödöllő (2 trees);

- the gardens of local workshop participants (9 trees); and

- the gardens of people supporting the work of GreenDependent (6 trees).

The native fruit trees waiting to be planted

One of the trees planted by a workshop participant

About SCORAI Europe

Founded in North America and inspired by the European SCORE! Network (2005-2008), SCORAI is an international network of professionals working to address challenges at the interface of material consumption, human fulfilment, lifestyle satisfaction, and technological change. SCORAI Europe was founded in the context of the European Roundtable for Sustainable Consumption and Production conference in Bregenz 2012. In that session, participants unanimously agreed that creating a SCORAI Europe network would help strengthen the sustainable consumption community in Europe, both in terms of research and practice. Shortly afterwards, SCORAI Europe was launched. Its goal is to support a community that contributes forward-thinking, innovative research in the area of sustainable consumption, while also bridging academic research with mainstream thinking and policy-making. Since then SCORAI Europe closely works with the Society of the European Roundtable for Sustainable Consumption and Production (ERSCP) and our sister SCORAI organization in North America, as well as other research networks that are focused on the challenges of addressing the society-environment nexus from a consumption perspective like the Degrowth community.

Since its inception, SCORAI Europe has organised and run a number of workshops and conferences with the aim of bringing together practitioners and researchers to enhance understanding and find innovative approaches toward sustainable consumption. For more information please click on the links below.

Vienna (2015)	*Sustainable Consumption Transition Series Issue 5*
Leipzig (2014)	*Sustainable Consumption Transitions Series Issue 4*
London (2014)	*Workshop Report*
Rotterdam (2013)	*Sustainable Consumption Transitions Series Issue 3*
Istanbul (2013)	*Sustainable Consumption Transitions Series Issue 2*
Muenster (2013)	*Workshop Results*
Bregenz (2012)	*Sustainable Consumption Transitions Series Issue 1*

To learn more about SCORAI, please visit: http://www.scorai.org, where you will find a dedicated web page for SCORAI Europe activities.

To become a member of SCORAI Europe, please join the SCORAI EUR listserv: http://scorai-eu.opendna.com.

For more information on SCORAI Europe, please contact: scoraieurope@gmail.com.

SCORAI Europe supporting community

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Marlyne Sahakian, University of Lausanne
Edina Vadovics, GreenDependent Institute

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