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Institutional change for strong sustainable consumption: sustainable consumption and the degrowth economy

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The environmental space concept illustrates that socially unsustainable underconsumption must be overcome and environmentally unsustainable overconsumption must be phased out. The planetary boundaries help to quantify the "ceiling," while the social protection floor concept operationalizes the *linea de dignidad,* the minimal conditions for a dignified life. In order for Western societies to respect these limits, significant institutional change is needed with respect to both orientations and mechanisms. For the ceiling, this article suggests a shift to an orientation of "better but less" for affluent groups, and toward "enough and better" for those still living in poverty. The corresponding mechanisms include a redistribution of income and wealth, a cap on income, an unconditional minimum income, and a strengthening of democracy. The choice of instruments has to take into account that consumption is to a large degree not an individual but a social act and to employ informational, financial, and legal measures that overcome the preference of decision makers for market instruments. Implementing these changes would alter the fabric of our societies. Important first steps can be taken here and now.

KEYWORDS: resource consumption, democracy, financial management, environmental impacts, public policy

Introduction

The notion of sustainable development comprises two core elements: meeting human needs and respecting the limits imposed by the environment (WCED, 1987). Thus, neither underconsumption nor overconsumption is sustainable. Any sustainable consumption policy worth its name must limit resource consumption in absolute terms (hence be "strong"), as the environment is sensitive to absolute anthropogenic pressure, regardless of the amount of wealth created in destroying it. It must also help eradicate poverty, that is socially unsustainable underconsumption, an objective so far pursued by economic growth strategies.

By contrast, the current austerity politics in Europe, resulting in stagnant or declining disposable incomes for the majority of the population, is the result of neoliberal growth policies. On one hand, it illustrates brutally to the rest of Europe what has been an encroaching reality for many countries (in particular to those subject to structural adjustment policies imposed by the International Monetary Fund) over the last several decades—that growth of the economy in no way guarantees increasing incomes for the majority of the population (an expectation based on the post-war experience), let alone an increase in welfare or quality of life. On the other hand, if neoliberal growth politics were replaced by degrowth politics, *ceteris paribus*, stagnant income would result as well. Consequently, for degrowth to be socially responsible, *ceteris* must not be *paribus.* Any sustainable degrowth strategy must be embedded in an overall restructuring of the social, economic, and institutional fabric of societies and economies, of production, allocation, and consumption patterns.

Although economic and political elites bind ever closer to it, the dominant political narrative is fading the more the prospect of perpetual growth vanishes (Arrow et al. 1995; Ayres, 1999; Spangenberg, 2010; Steffen et al. 2011; Bonaiuti, 2012; Muraca, 2013). As we move from the age of abundance to an era of externally enforced frugality, a new definition of sustainable consumption that fits resource-constrained development conditions is necessary. Sustainable consumption can no longer mean voluntarily refraining from some of the consumption options available (which were part of an overall unsustainable development and waiving them was of limited effectiveness due to rebound effects), but the ability to lead a dignified life, maintaining or enhancing quality of life despite shrinking resource availability.

Reconciling social and environmental criteria in sustainable consumption strategies requires a suitable conceptual framework and the adjustment of the institutional settings of society. The next section of this article describes the concept of *environmental space*

(Opschoor, 1987) as a suitable basis for strong sustainable consumption policies (Buitenkamp et al. 1993). The third section presents recent results making the concept operational and discusses consumption implications (Lorek & Fuchs, 2013; Lorek & Spangenberg, 2014). Section four discusses the need to change institutions, including the rules of societal decision making, in particular orientations and mechanisms. I then conclude with some hints at possible political steps.

Environmental Space

The Concept

Opschoor's (1987) initial definition of environmental space was intended to define thresholds for resource consumption to secure non-deteriorating services for future generations. In this scheme, resource consumption should be reduced to a level at which the annual reduction of resources and their service potentials can be compensated by newly discovered resources and efficiency gains in using them. Assuming, in addition, equitable per capita consumption entitlements, Opschoor concluded that a reduction of northern per capita consumption by a factor of eight to ten was necessary. Spangenberg (1995) modified the reduction targets into safeguards for ecosystems and their services, ending up with rather similar target figures. Energy-use restrictions reflect the need to reduce carbon-dioxide (CO_2) emissions to a global per capita level in line with limiting global climate change to 2°C. Limits to the consumption of metals and minerals as global commodities are intended to reduce environmental pressures to a sustainable level. This would require dematerializing production and consumption, reducing global resource extraction by about 50% (Schmidt-Bleek, 1994). Further assuming, along the lines suggested by Opschoor, a universal right to per capita environmental space use, thus treating the global sinks and sources as a common heritage of humankind to be shared equitably, increases the reduction targets significantly. According to these calculations, fossil-fuel and mineral-resource use had to be reduced by about 90% in the overconsuming countries ("Factor 10", Schmidt-Bleek, 1999; 2008; "Factor 5" suggested by von Weizsäcker et al. 2010 requires 80% reduction). Biomass was treated as a regional resource, and water-use targets were based on catchment-area analysis. For land use, phasing out net "land import" (i.e., the net claim of land outside one's own territory for domestic consumption) was normatively set as an objective, implying a reduction of available agricultural land by 12% for the 1995 European Union (EU) 12 countries.[1] Terminating animal-feed imports as implied with this setting, plus the assumption of a healthy, low-fat/low-beef diet, led to an aggregate reduction of land for food production by 35%. All these figures would probably be higher today due to the growth of consumption and resource exploitation of the last two decades.

In addition, Spangenberg (1995) introduced a lower threshold, the "floor of the Environmental Space" as a minimum condition for social sustainability, complementing the "ceiling" indicating environmental unsustainability; both are based on the Brundtland Commission's definition of sustainable development (WCED, 1987; Hille, 1997). Within this framework, environmental space is a zone for free choice of consumption patterns bracketed by two zones of unsustainability—sustainable consumption means self-realization and lifestyle choice within the available environmental space, steering clear of both the domain of environmentally unsustainable overconsumption and that of socially unsustainable underconsumption (Spangenberg, 2002).

The "floor" of the environmental space cannot be defined using scientific arguments as is the case for the "ceiling," but is based on values such as distributional justice and human dignity (both are social conventions). They determine the socially acceptable minimum level of resource access, usually more a relational than an absolute demand. To be globally applicable, the social sustainability condition was defined qualitatively, as access to material and immaterial resources, sufficient to allow for a dignified life, including the opportunity to actively participate in the respective society (e.g., political decision making, culture). For this to occur, not only essential needs (often defined as physiological demands) must be met, but psychic and social needs as well (i.e., the full set of needs identified by Max-Neef et al. 1989). According to them, needs are finite, few, and classifiable, including physical (nutrition, health, and shelter) and non-physical ones (subsistence, protection, affection, understanding, participation, idleness, creation, identity, and freedom). However, the number of potential satisfiers for the limited number of needs is unlimited. In Latin America, the lower threshold of environmental space has become known as *linea de dignidad*, the demarcation separating a dignified life from one in misery (Figure 1).

While safeguarding human dignity is not a concept commonplace in modern economics, it is not alien to historic economic thinking. For instance, Adam Smith (1976) emphasized the necessity to pro-

[1] The EU 12 comprises Belgium, Denmark, France, Germany, Greece, Ireland, Italy, Luxembourg, Netherlands, Portugal, Spain, and the United Kingdom.

Figure 1 The environmental space is the domain of sustainable consumption. Its upper limit, the ceiling, separates environmentally unsustainable from sustainable habits, and its lower limit, the floor, separates socially sustainable from unsustainable situations. The diversity of shelter in the sustainable consumption section indicates the plurality of lifestyles: sustainable consumption is not abolishing choice, but offering better choices.

vide all people with the means to lead "a life without shame" (not necessarily to "keeping up with the Joneses") and economists from Marshall to Mill declared eradicating poverty the overarching objective of their work. Economics developed out of moral philosophy, and was constituted as political economy with social and distributional issues a key concern to classical and early neoclassical economists. The current neglect of social issues in mainstream economics, delegating them to other disciplines and focusing almost exclusively on the efficiency of market processes is betraying that heritage. Similarly, for some ecologists or ecological economists to celebrate the accidental shrinking of the economy during the Great Recession as an achievement for the environment is a denial of their ethical basis and risks earning well-deserved irrelevance for moral reasons (Schneider et al. 2010; Kallis, 2011). It is also for degrowth politically fatal as it equates a painful and socially unsustainable situation with environmental progress, creating a contradiction between environmental and social sustainability instead of reconciling both sets of criteria, which is the core idea of sustainable development. Politically, this could undermine public support for the necessary economic turnaround, offering a whole arsenal of policy-campaign arguments to defenders of the status quo. Latouche (2010), seeing that, pointed to the character of degrowth as "a healthy diet voluntarily chosen," as opposed to "starvation."

Environmental Space Revisited

The "Planetary Boundaries"

The information base for defining the delineation between sustainable and unsustainable situations has improved significantly in recent years, although the basic approach has remained the same. For the "ceiling", the "safe operating space for humanity" defined by Rockström et al. (2009) provides an extended empirical basis, emphasizing the key dimensions to care for because a massive (biodiversity), significant (nitrogen cycle), or slight (climate) transgression of the acceptable limits to damage has already occurred, or is soon about to happen (phosphorus cycle, ocean acidification). However, while often presented and perceived as a piece of value-neutral scientific information, such boundaries should be recognized as essentially anthropogenic choices: human societies decide which impacts are acceptable, maybe even desirable as a price to pay for other achievements, and which are not (Metzner, 1997). The role of science is to underpin and inform these choices—this is, for instance, the mandate of the Intergovernmental Panel on Climate Change (IPCC), which defines its work as "policy-relevant and yet policy-neutral, never policy-prescriptive," and the Intergovernmental Platform on Biodiversity and Ecosystem Services (IPBES). Both organizations point out risks and trade-offs so public decisions to act—or not to do so—can be taken with an awareness of the consequences. Public and political perception of risks matter as much as scientific facts, as the outcome of the United Nations Conference on Sustainable Development (Rio+20) (UNGA, 2012) and the non-results of the Warsaw Climate Conference (the 19th Conference of the Parties) have illustrated; scientific warnings were not taken seriously enough to overrule perceived national interests. In Brazil in 2012, the Indian government claimed that climate change, unlike poverty, is not a current problem and in Warsaw the following year coal and oil producers defended their industrial prerogatives.

The "Social Protection Floor"

For making the lower bound operational across countries, the concept of a "social protection floor" plays a similarly important role (ILO, 2011). Since 2009, it has been developed and propagated by the International Labour Organization (ILO) in collaboration with the World Health Organization (WHO), based on an initiative supported by the United Nations System Chief Executives Board for Coordination (UNCEB), overwhelmingly endorsed at the United Nations Conference on Sustainable Development (UNCSD) in 2012 in Rio de Janeiro (UNGA, 2012), and confirmed at the next United Nations General Assembly. The concept emphasizes the necessity of society-specific approaches, based on comparable quality criteria derived from the objective of "relieving people of the fear of poverty and deprivation, delivering on the promises of the Universal Declaration of Human Rights" (UN, 1948). For this, the concept suggests measures and institutional re-

forms (supported by the International Trade Union Confederation) to achieve both basic income security and universal access to essential, affordable social services. However, while the criteria are rather precisely defined, there are limited hints as to what the means toward these ends could be. On one hand, that is because the situation varies across countries and one-size-fits-all solutions do not exist. On the other hand, it is the result of governments' resistance to external policy prescriptions (Cinchon et al. 2011). A less openly acknowledged reason is that one necessary means of establishing such a "floor" might be redistribution of income and assets—anathema to virtually all governments. The concept emphasizes that cost calculations are no hindrance—basic income provision might be expensive, but is a social duty as well as a good investment. It turns people suffering in poverty into capable workforce members, thus enhancing opportunities for income and well-being in particular in poor countries.

Poverty can be analyzed in terms of access to flows of income, or access to stocks of assets. Being above a threshold of deprivation, having sufficient minimum guaranteed access, can be defined as social sustainability. Thus, there are good reasons to discuss not only income transfers but also the income distribution before transfers and the redistribution of assets when defining antipoverty policies. Current degrees of income polarization, even more extreme than during the "gilded age" of the 1920s, combine the emergence of a plutocratic power structure with chronic and pervasive underconsumption (Fullbrook, 2012). Unlike the aftermath of the Great Depression, when New Deal policies rather abruptly led to more equitable income distribution in the United States, a situation that remained relatively stable from 1940 to 1980, the aftermath of the Great Recession has not seen anything resembling a policy program to redistribute wealth away from the top 1% of income earners. This is not only unjust and socially unsustainable, it has become an obstacle to economic development itself as it reduces growth potentials by decreasing consumption and thus investment opportunities while also threatening environmental sustainability (Duraiappah, 1998; *The Economist*, 2012).

However, not poverty but wealth is the most important reason for environmental degradation, not under- but overconsumption. Deprivation not only exhausts finite resources and erodes renewable ones such as biodiversity, it also destabilizes ecosystems and undermines their service potentials (Steen-Olsen et al. 2012; Weinzettel et al. 2013). The fact that environmental degradation hits the poor harder than the rich frequently turns them into the ones most eager to protect the environment (see the "environmentalism of the poor" as discussed by Martinez-Alier, 2002).

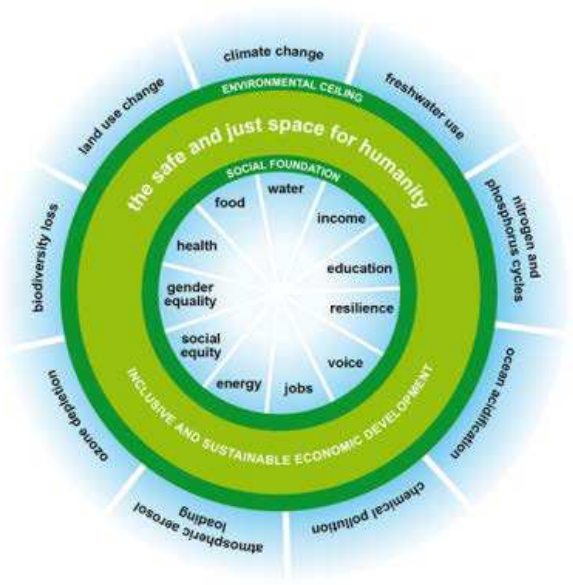

Figure 2 Oxfam illustrates the sustainability challenge with "doughnut economics" (Raworth, 2012). It combines the use of planetary boundary and social sustainability criteria in a very illustrative manner, identifying—as the environmental space concept a quarter century earlier—sustainable life as the space between environmental and social unsustainability.

As their livelihoods are dependent on access to unspoiled ecosystem services providing a significant share of the "gross domestic product (GDP) of the poor" (the paid and unpaid goods and services which make up their livelihoods, for them environmental protection can be a matter of social self-defense (Kallis et al. 2009; Sukhdev, 2009). Thus, provision of investments into longer-term solutions to pressing environmental challenges should become an additional criterion for defining the social protection floor, over and above the social criteria, linking the floor and the ceiling of the environmental space.

Oxfam, a charity and environmental campaigning organization headquartered in the UK, has recently suggested a similar graphical illustration of upper and lower bounds, making use of the concept of planetary boundaries to specify the upper limit; lower limits are based on the organization's longstanding experience (Raworth, 2012). The "doughnut" graph (Figure 2) illustrates some suggestions for making the environmental space concept more operational. What is called "available environmental space" in this article has been named "a safe and just space for humanity" by Oxfam.

Consumption Implications

We can define upper and lower limits to resource consumption for either individuals or societies. However, when doing so the different character of the two

dividing lines must be taken into account—the *linea de dignidad* criterion is necessarily an individual one; it must apply to every citizen (no one should live below the line). Sustainable consumption then includes and requires channeling resource-use opportunities toward those consumers for whom the marginal utility is highest. This will generally entail prioritizing the consumption needs of the poor to maximize the social utility gained from (reduced) resource consumption (Lorek & Fuchs, 2013). For the upper limit, the definition could be either individual or collective. In the latter case, the overshooting of individual consumers would be tolerated as long as the average of the respective society remains below the "ceiling." The alternative, an individual obligation to stay below the threshold, would immediately introduce a maximum income expressed in resource consumption units. Having a society-wide definition of an upper and a lower income limitation would require deciding about a maximum acceptable spread between the lowest income (the floor) and the highest permissible income, to be regularly adjusted, in line with the development of average consumption, thus safeguarding that the ceiling is not exceeded. The resulting distributional conflicts can be easily imagined.

Capping must necessarily refer to consumption at the national level because if it were not at this geographic scale, neither statistical data nor policy-implementation instruments would be available, and if it were not consumption, the impacts in the country of origin of imports substituting for domestic extraction, thus the export of unsustainability would not be taken into account (Steen-Olsen, 2012).

Imposing constraints on resource consumption, of course, limits economic growth to the increase of resource productivity plus the change in the size of the cap—a policy proposal deeply unpopular with decision makers seeking relief from all kinds of problems including debt, unemployment, social security financing, and so forth by trying to accelerate growth. However, the results of such efforts have proven inadequate and volatile. In short, previously familiar growth rates seem no longer achievable. Fortunately, they are not only environmentally undesirable, but also socially unnecessary in affluent countries, despite economic mainstream claims to the contrary. While not a single reported case of economic growth coincided with significant reductions in resource consumption (the extreme case being Germany with steady growth despite stagnant energy and resource consumption due to sufficient resource productivity increases—a reason for its high competitiveness neglected in the literature), a plethora of studies demonstrates that a growing GDP neither necessarily enhances the median income nor contributes to eradicating poverty (Ayres 1999; Alber, 2002; Matutinović, 2006; Bilancini & D'Alessandro, 2012). Indeed, the recent increases in relative poverty in affluent nations happened during periods of relatively high growth. This situation makes calls for a sustainable degrowth policy that slims the economy in physical terms, followed by a similarly physically defined steady state economy, more plausible than ever (Daly, 1974).[2] For degrowth to be sustainable, however, in particular the social side of the equation must be sufficiently elaborated and reliable. Plausibly, the social side will have to include a redistribution of wealth, since if growth is no longer a reliable option, improved justice can only be brought about by redistributing consumption options from the rich to the relatively poor. Such a policy of prioritizing the public good over private wealth would enhance the overall utility of wealth and the well-being of societies and communities. If reductions in material consumption fall to those with the lowest marginal utility of consumption (the wealthiest) while redistribution improves the situation of those with the highest marginal utility of consumption (the poorest) then redistributing wealth has such an effect (Lorek & Fuchs, 2013). The resulting increase of income and/or wealth-distribution equality would not only reduce the overconsumption of the rich systematically, but also alter the social dynamics. Status competition and other psychic drivers of consumption would be reduced at all income levels, particularly those at the upper end of the distribution (Fischer-Kowalski et al. 1995; Strasser, 2011).

In political science, political institutions are defined as the rules by which political decision making and implementation are structured. They can refer to social entities as actors as well as to formal and informal systems of rules shaping their behavior, including the mechanisms for rule enforcement (Czada, 1995). Using this broad definition, we distinguish orientations (norms, *leitbilder*), mechanisms (administrative, political and social procedures, legal norms), and organizations (Spangenberg et al. 2002). By changing the social dynamics, capping income would immediately change the mechanisms of society, and most probably, with a certain delay, also its orientations. Capping is an example of the kinds of institutional changes necessary for the transition to-

[2] When Mills, Schumpeter, and Keynes advocated a steady state, they did so in economic terms, not in physical ones as resource scarcity and environmental pollution were not yet as obvious problems as they are today. In their times the economy had not yet reached a size sufficient to generate enough welfare to eliminate poverty. For these reasons, they saw a steady state economy not as a current challenge but as a desirable or inevitable future situation. In their situation degrowth was not yet an issue necessary to discuss.

ward substantial or strong sustainable consumption (Lorek, 2010). The metaphor of a "ceiling" helps make this abstract demand vivid and communicable. Further background on necessary institutional change is provided in the fourth section of this article, dealing with orientations, and the fifth section focuses on mechanisms.

Institutions for Sustainable Consumption: Orientations

Strong sustainable consumption in affluent societies requires the transition from an orientation toward "more consumption" to *less but better consumption*—"better" because most probably "less" is only socially acceptable, regarding status as well as quality of life, if it is "better" not only in a moral or normative sense, but also regarding product quality, durability, design, and the provision of satisfaction (Spangenberg et al. 2010). It can be pioneered and spearheaded by current high-consumption groups, for example as part of postmodern lifestyles emphasizing either green values or—much more frequently and powerfully—the health benefits of abstaining from certain forms of consumption. Successful movements for the prohibition of alcohol in the 20th century and of smoking in the 21st century have been based on health arguments, supporting this point. However, people expecting an improved quality of life from voluntary simplicity or consumption restraints have been overexposed to consumer goods; they tend to be high-consuming individuals, representing a societal niche rather than a change of mainstream thinking. The same can be said about the individuals called LOHAS (Lifestyle of Health and Sustainability), also mostly high-level consumers promoting a lifestyle of better, not even less, consumption (a weak sustainability strategy). They can afford more expensive, high-quality goods not accessible to the average household. So, can changing average household consumption really make a difference?

On one hand, there are obvious limits to the freedom of choice for household members, not only because of financial restrictions, but also due to social processes—the social identity function of products makes individual changes difficult as long as peer groups do not change their consumption preferences as well. Furthermore, each consumption decision is taken in a multi-actor framework where for each agent other agents co-determine the degree of freedom of choice (Spangenberg & Lorek, 2002).

On the other hand, empirical studies from Switzerland have shown that the difference between low-polluting and high-polluting households is significant (Girod & de Haan, 2009). Controlled for expenditure levels, the variance of impacts (here determined as greenhouse-gas emissions) varied between half as much and twice as much as the average. Although so far only realized by a relatively small group, obviously there is a potential for significant improvement if people adopt a low-impact behavioral pattern—but also a risk of much higher additional damage if the high-pollution lifestyle becomes a dominant role model. Already today, due to the asymmetrical distribution of impacts, Girod & de Haan (2009) report that the influence of high polluters on aggregate Swiss environmental performance is twice as high as the one of low polluters. They conclude that "policy makers are well advised to consider measures designed to tame the high emitters and prevent the dissemination of their consumption patterns." They consider a combination of informational (motivation and stigmatization) processes, plus legal limitations supported by financial incentives, to be necessary, but not (yet) available. As this example illustrates, strong sustainable consumption policies need to combine the effects of external regulation with extrinsic (peer acceptance) and intrinsic motivation (willingness).

Table 1 Different political instruments affect different determinants of consumption with different effectiveness (++ strong positive, + positive, - negative, o no effect). Exclusively relying on one or the other kind of instruments is no success-prone strategy as all three kinds of affordability must be given for consumption change to happen.

	Affordability		
	Subjective	**Economic**	**Social**
Instruments	(willingness)	(affordability)	(acceptability)
i Informational	**++**	○	**+**
€ Financial	**+/○**	**++**	**+/-**
§ Legal	**+**	○	**++**

Table 1 illustrates that each of these kinds of instruments (informational, financial, legal) is best suited to deal with specific conditions constitutive of strong sustainable consumption. For instance economic instruments—often perceived as "silver bullets"—fail as behavior changers when dealing with group phenomena such as innovation or consumption change (Triguero et al. 2013). Capping is a legal instrument and—like all legal instruments—has the benefit of immediate and universal effectiveness, regardless of income levels.

However, assuming equal expenditure levels, what differentiates consumers with generally low pollutant profiles from those who exhibit high polluting patterns? Low polluters are characterized by purchasing patterns that, in all environmentally dominant fields of human consumption (i.e., housing, nutrition and mobility, see Spangenberg & Lorek, 2002) opt for low-impact choices. In terms of construction and housing, they live in newer buildings, with less fossil-fuel consumption for heating, and inhabit a disproportionately smaller share of single-

family detached houses. Regarding mobility, they buy fewer expensive cars, exhibit less vehicle use, and have lower levels of overall mobility. Regarding nutrition, their meat consumption is lower and they tend to buy more organically grown food. While high polluters opt for quantity and undertake more trips by airplane, low polluters spend the money they save by eco-efficient consumption on better quality (organic food) and more leisure, a sector with below-average specific pollutant emissions (Girod & de Haan, 2009). These data confirm earlier findings regarding the different impacts of lifestyle groups within the same income range (Lorek & Spangenberg, 2001). They give at least preliminary hints about which habits to address to reduce the impact of household consumption, and which indicators to use for monitoring impacts (Spangenberg & Lorek, 2002).

More Quality, Less Quantity: Reconciling Objectives, Integrating Strategies

Regarding environmental impacts in general, a quantity and a quality effect have to be distinguished. More specifically, sustainable consumption politics has to develop strategies to restrain both facets and to target them at the Rich and the Dirty, who are often, but not necessarily, identical. For those living above the floor of the environmental space, within the space for free choice of consumption patterns, disposable household income can be used to increase the quantity or improve the quality of consumption. If budgets are constrained (which they usually are), increasing expenditure for quality improvement tends to crowd out volume increases, and vice versa. This applies also to the eco-efficiency approach, which argues in favor of putative win-win situations, promising financial gains from less resource-intensive consumption. When the money saved is spent again, it can be on improved quality or enhanced quantity. In both cases, savings are reduced by a rebound effect (which generally transpires whenever a win-win is claimed), but the effect tends to be much stronger for the quantity option, although higher quality products tend to require more inputs *per product*. However, with increasing quality (and thus increasing price) the embodied resource content in a life-cycle perspective (the ecological rucksack, see Schmidt-Bleek, 2004) tends to increase, the *resource intensity* (resources per unit of price) tends to decrease. On the macro-level, this implies a decoupling of GDP and resource consumption (best measured as Total Material Requirement (TMR)), including imported raw materials and interim products, and accounting for unused but activated material, such as overburden (the unused material from mining). The size of a particular rebound will depend on the spending pattern chosen for the money saved; it is higher for more quantity and lower for better quality.

Saving all of the money faces a similar dichotomy. Whether stored in a bank or invested in equity funds, savings are usually used to finance investments (Note: losing money in stock-market speculation is one of the few rebound-free ways to spend it). Environmentally, it is decisive if the investment undertaken contributes to increasing or decreasing resource consumption on the macro-level; is used for increasing the resource productivity of the capital stock; is deployed as replacement for less efficient products, producers, and/or production sites; or is used to expand the capital stock, adding new production capacity and thus stimulating additional resource consumption (irrespective of the resource productivity of the individual investment). So far, however, consumers have almost no influence on the context in which their savings are invested, and thus on the rebound effect they produce.

With a further view to the social justice component of sustainable consumption, buying *better but less* is necessary since reducing wealth and income polarization tend to increase resource consumption. High levels of inequality reduce overall resource consumption in two ways. In the first instance, the resource intensity of the Rich is high compared to the median income and, secondly, low incomes force the vast majority of the population to "tighten their belts," while simultaneously increasing their desire for increased consumption standards (Lorek & Spangenberg, 2001). For instance, producing and driving a Mercedes 500 consumes significantly more resources than required for a Fiat 500, let alone a bicycle, but spending the money on seven Fiats or five middle-class cars instead of one Mercedes increases aggregate resource consumption. To counteract such increases of resource consumption resulting from a more equitable income distribution, *smaller but smarter* alternatives must become the preferred consumer choice (and not necessarily a car, but maybe a package of bike, pedelec (moped), rail pass, and car-sharing membership). However, while better consumption with increasing prices per consumer good can absorb monetary gains from eco-efficiency (eco-taxes on resources plus increasing consumer taxes are the alternative), it can only be an improvement relative to a certain level of expenditure and thus of resource consumption. Increasing the median income level through redistributive measures raises this level, and makes any absolute decoupling (i.e., reducing resource consumption in absolute terms) difficult if not impossible. Thus, redistribution, if put in place, does not invalidate ideas about resource-use (and income) capping. On the contrary, while redistribution complements capping socially, capping

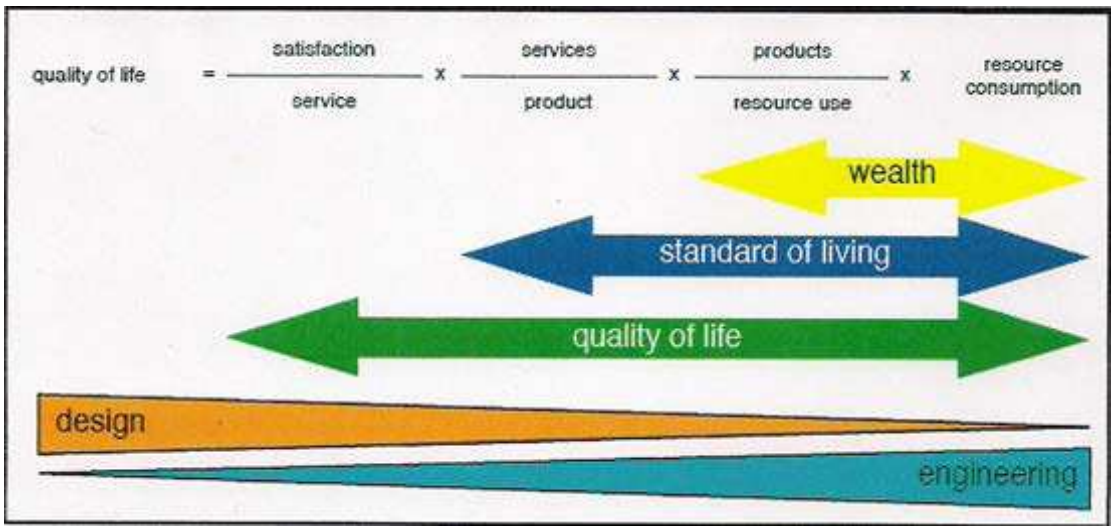

Figure 3 Wealth refers to the sum of products owned, while the standard of living denotes the accessible products (incl. services), owned, leased, rented, borrowed or else. Both can be measured objectively. Quality of life is a subjective measure including the satisfaction from products and services, including social and ecosystem services. Products are the interface of production and consumption. Design and engineering are key professions shaping them; for sustainable consumption to provide a high quality of life, sustainable technologies and design for sustainability will be crucial to achieve sustainable consumption.

complements redistribution ecologically. Furthermore, as high-price goods tend to have a higher content of embodied labor (its costs are one reason for the products having expensive prices), quality consumption tends to provide qualified employment.

Wealth, Standard of Living, and Quality of Life

To comprehensively address the Rich and the Dirty, it is important to distinguish between wealth, standard of living/affluence, and well-being/quality of life (Figure 3). Since the Medieval ages, the term wealth has been used to describe a *stock of assets* sufficient to live a decent life; the volume is important, but the ownership is decisive. Standard of living is a more recent term, a notion pointing at *flows of services* (salaries and other income, rent, interest) derived from stocks of wealth (Meyers, 1983). What counts is access to the flows, the right to use them at one's own discretion, not the ownership as such. Consumers in pursuit of improving their standard of living focus on access to and command over services—for them, the insistence on ownership is somewhat anachronistic (Spangenberg & Lorek, 2003). Today, such a shift from ownership to access is visible (for instance, mobile phones are usually not assets bought on the market, but part of a service flow), but it is far from certain that it will indeed transform consumption behavior. Such preference transitions tend to flourish with confidence and optimism toward the future, and tend to be undermined by social insecurity and precariousness, leading to a retraditionalization of behavioral routines in times of crisis (Kraemer, 2010). Well-being/quality of life is the most recent arrival, having entered everyday language only in the 1970s. It includes standard of living, but adds to it access to other flows, in particular of social and ecosystem services of satisfying volume and quality (a criterion changing over time and varying between social groups). As many of these service flows are public goods, people striving for quality of life do not necessarily claim a right to use those services at their own discretion—such services may be shared or collectively enjoyed as well (Meyers, 1983).

The Motorcar Example

Transport and mobility provide examples particularly well suited to illustrate how intertwined social and environmental processes are. Cars are not just "service delivery machines" for mobility (Tischner & Schmidt-Bleek, 1993), but more than most consumption items they are prestige objects, with ownership important for status demonstration. They are (at least in Germany) objects of emotional identification as means of expressing an actual or a desired identity, a symbol of freedom, a means to work off frustrations, and the tool of choice for adrenalin junkies (German motorways have no speed limit). Changing to a smaller car is not only perceived as a personal loss, but a status setback, except for expensive sports cars which have high reputational value. Porsche owners are known as the ones "managing to look down upon others from below"—the size that matters most is the price tag.

A highly mobile lifestyle is a social phenomenon, in professional life enforced by globalizing

business and in private life (although the delineation tends to be more and more blurred) by social relations that are no longer neighborhood-based but rely on the ability of like-minded people to organize themselves, with physical distances playing a decreasing role. Lifestyle communities on the Internet are an extreme example of spatial network expansion. These are some of the reasons why, despite overwhelming evidence for the benefits of a car-free life (individual health benefits of physical activity and pollution-exposure reduction, collective air-quality improvement, and accident-risk reduction), a significant reduction in car ownership and use is not (yet) taking place among the population at large. The putative trend among young Europeans to strive less for car ownership still looks fragile. However, the tendency to forsake obtaining a driving license (once the rich world's equivalent to a tribal adolescence ritual) indicates a longer-term change. Monetary quantifications promising a net gain of up to €50,000 (US$69,000) have not motivated individuals to give up their cars. Nor has the annual public health gain, reported to be €33 (US$46) per capita, motivated European political decision makers to change their pro-car habits and decision routines to reduce the cost to the public health system (Rabi & de Nazelle, 2011).

The transportation example illustrates the otherwise rather abstract statement that better but unlimited consumption is not an environmentally sustainable option, just as unqualified consumption reduction is not socially sustainable. Only once an upper limit to consumption has been established, and where necessary enforced, are significant effects possible. With legal backing, and, in particular if car-free pioneers act as and are recognized as new role models, lower consumption is easier to achieve than by trying to convince people of voluntary change (which would be less effective due to the rebound effects already discussed). Prominent identification figures can help a change of orientation to trickle down to the middle class which continues to represent the bulk of consumption decisions. It is only once *better but less* has become the social norm of consumption decisions, shaping the standard search routines of shoppers, the information most prominently presented by Internet search engines, and the messages of advertising that we will be getting closer to substantially sustainable consumption. Establishing such a norm could be politically supported by curbing seductive offers; for instance, a ban on "buy two, get three" offers and similar messages promoting more instead of better consumption would be a helpful step in this process.

Better Implies Less, but Not Vice Versa, and Enough is Necessary

Higher quality products tend to carry a higher price. If they are repairable, upgradable, and made from environmental benign materials in socially and environmentally responsible production processes, they usually have an extended lifespan, as expensive goods are not easily discarded, repair becomes worthwhile, and capability for enhancement avoids technical replacement needs. Consuming such products has several implications. It reduces resource consumption if (and only if) the extended use time of products overcompensates for the additional resource input used for higher quality. The same applies to private work, do-it-yourself, and small-scale handicraft as compared to large-scale industrial production of goods. A condition for the supposed environmental superiority of self-made goods over mass products, despite the higher efficiency of large-scale production due to economies of scale, is that they are used longer, maintained better, and repaired rather than replaced as long as possible. Co-design (consumers influencing the final shape of "their" products, Fuad-Luke, 2009¸ Ninimäki & Hassi, 2011) has similar effects, and Design for Sustainability (DfS) uses not only benign materials, but also socially and environmentally responsible production processes and empowers customers (Spangenberg et al. 2010). The feasibility for upgrading is essential to avoid owning and using underperforming products, for instance with higher resource consumption in everyday use than new products. Another challenge is that reduced resource consumption is only achieved if new products do not complement old ones, but effectively replace them. We need "ex-novation," a new dedication to get rid of outdated, environmentally detrimental products as much as we need innovation for better ones.

Simultaneously, as a preference for higher quality will stimulate the consumption of more expensive goods, at any given income level it further reduces the number of products bought, while enhancing the number of services available from any product over its lifetime; the satisfaction or "psychic income" from consumption (Fisher, 1906) may even increase (while waste volumes decrease). Buying better products that are more effective satisfiers of substantially unchanged human needs is a way of reducing consumption while avoiding rebound effects (Max-Neef et al. 1989). Capitalism thrives on mobilizing the needs to sell ever more (pseudo)satisfiers.

Nevertheless, while buying better implies buying less for any given level of income (assuming limits to household debt), buying less is possible without buying better. The environmental result is less impressive as the change is limited to goods at the mar-

gin no longer consumed and does not affect the rest, and the social impact is questionable if not unsound. For low-income households, consuming less is not an option as it means bearing the cost without reaping the benefits of the *better but less* concept. An improved quality of life can only result for those who have suffered from overconsumption, usually indicating a high level of consumer spending, and thus the money no longer spent would probably be saved, fuelling investment as discussed earlier. Donating the saved money to charities and development organizations would help overcome this problem, but this existing institutional mechanism is unlikely to become the new social norm or orientation.

However, *better but less* as an orientation is a way the global consumer class (more than a third of it now located in the global South) might adjust its spending behavior to the upper limit, the ceiling of the environmental space. For the lowest income group, struggling to cross the *linea de dignidad* and escape social unsustainability, the core concern is not less but more accessible consumption opportunities; their request for additional consumption options is justified as long as they live below the floor of the environmental space. However, the secured or increased consumption levels necessary to make active participation in society possible should be understood as just that, a form of social insurance, not the first step on the consumption escalator. The sustainable orientation is not more consumption, but enough, and social advancement can be found getting access to *enough and better* consumption opportunities. Thus, communication of the concept must always emphasize both, that every human deserves the "floor," but no educated person would wish to consume above the "ceiling," and as a result it is normally good and fair to respect limitations (and impose them on those inclined to free riding). Both messages converge on the focus of quality instead of high or rising quantities.

Of course, such a redefinition of attitudes, as necessary as it is, is difficult for both high- and low-income strata. Consumption patterns are part of our cultural heritage and change is usually slow. In the three domains of household consumption dominating environmental impact (construction and housing, nutrition, mobility), it has been a privilege of secular and spiritual leaders since Roman times to publicly squander resources while expressing their superior position. Stone castles and palaces vs. wooden huts and houses, horses and carriages vs. walking or at best donkeys, banquets vs. malnutrition characterized most feudal societies in and beyond Europe. However, given the low absolute numbers of nobles and high clergy, while this situation was socially and democratically disastrous, it was not environmentally critical. But when "the Rich and the Beautiful" took over as social elites and role models, their habits shaped lower-class desires for future living and working conditions imitating the lifestyles of higher classes. Fulfilling some of these consumption aspirations became possible beginning in the 1950s, and economically driven and socially desired mass production turned into "mess production" from an environmental point of view.

Institutions for Sustainable Consumption: Mechanisms

Both the floor and the ceiling require institutional mechanisms to be implemented, although again different ones for different income strata. New institutional mechanisms can support establishing new orientations, but innovation in mechanisms is in turn limited by the currently prevailing orientations. Changing mechanisms to the maximum acceptable under given orientations, that is being one step ahead of the public mood and thus triggering orientation change, is political leadership, but being too many steps ahead would instead spell "being out of touch."

But what is the current public mood? Criticism of income polarization is shared throughout the world, from the Occupy demonstrators in New York via camp sites in Madrid and Tel Aviv to the streets of France and Britain and the market places of the Arab world. In all these places, the demand to shrink wealth and income disparities resonates with ordinary people, often regardless of their overall political orientation. The consensus is rather broadly in favor of active anti-poverty policy, but less so that an anti-wealth policy is a necessary condition for more equality, and even less so among decision makers and the 1% themselves. Instead, liberals and economists suggest measures to stimulate economic growth as a means to make the 99% better off. However, even if the top 1% of incomes were frozen and all gains from growth fell to the 99%, it would take about 25 years at an unrealistically high growth rate of 5%, and almost 40 years at a still unduly optimistic growth rate of 3%, to reestablish the distributional pattern that prevailed from 1940 to 1980 (figures for the United States). In the course of that process, GDP would double and the aggregate income of the 99% would triple—a development hardly in line with the need to reduce resource consumption. That is why growth is no solution, and redistribution of wealth is necessary in the highly polarized high and middle income countries.

An Unconditional Minimum Income and Progressive Pricing

Redistribution implies more than shifting money from the rich to the poor. For the lowest income

strata, an unconditional minimum income is a plausible solution, part of which should be paid out not in money but in—mostly physical—goods and services. This is not to extend and perpetuate the practice of replacing monetary transfer schemes by provision of goods such as clothing or school books, often violating the human dignity of those affected. This general approach has been promoted by neoclassical economists and justified with the suspicion that recipients would always misuse the transfers they receive (which says little about the recipients but a lot about those economists). The scheme suggested here follows a different approach and aims for the opposite effect, specifically a strengthening of human self-determination. It is a rights-based approach, as begging for charity is not consistent with human dignity and could be realized as an extension of existing social security systems, now providing the "floor" transfer income. Its core is offering a free supply of a certain minimum of water, electricity, heating, and mobility services sufficient for a dignified life.

The reasoning for such a solution is straightforward—the poorest members of society need to be sheltered against the impacts of volatile resource markets by a decommodification of their basic needs. Even the most effective welfare state cannot react to price hikes without a time lag, and thus people who have neither a disposable income high enough to buffer these hikes by reducing the consumption of other, nonessential items, nor enough savings to bridge the gaps, are exposed to energy poverty and water cut-offs while waiting for monetary transfers. A physical supply floor would shelter them from such threats. That is one reason why in Germany the proposal has resonated with major civil society organizations. For instance, the National Energy Consumers Association (*Bund der Energieverbraucher*) supports such a solution for electricity, demanding that the first 500 kilowatt hours per year (kWh/yr) should be cost free for every household. As a result, a basic income consisting of physical and monetary components could replace parts of transfer incomes (e.g., pensions, unemployment benefits, scholarships). If the entitlement is below the floor of the environmental space, the basic income would be paid out. In cases where it is higher, the basic income would be topped up by additional payments to the original entitlement level.

The income loss this implies for the affected utilities should be compensated by progressive pricing systems for households (price per unit increasing with higher consumption) replacing the prevailing degressive price structures for energy, water, and other utilities (price per unit decreasing with increasing consumption). This is also a matter of justice—the current degressive structure not only encourages more consumption, but also makes a high consuming manager pay less per unit than his less affluent and more frugal secretary. Thus a progressive a price structure would simultaneously establish incentives for the better off to save resources, while including an element of socially desirable income and asset redistribution. This could be a first step toward a broader change of the pricing system, abolishing all financial incentives supporting consumption increases.

Instrument Mix

Regarding changing the economic dynamics by adjusting the institutional framework, this is not yet the end of the story. Informational and legal measures play an important role as well. For instance, imagine that resource-extraction licenses (e.g., coal and ore mining, gas and oil drilling, water abstraction, quarrying) would not only define limits of area and duration, but also of volume. All of a sudden, the incentive structure would be changed from one of promoting exploitation as rapidly as possible to one where each entrepreneur must carefully consider how to spread the extraction over time, probably reducing immediate production and consumption.

Or consider informational measures, in particular symbolic action illustrating the necessary changes. Taking mobility as an example again, options abound. Why do railway managers have a car (and often a driver) and not use the train and tram when they typically have privileges that entail riding for free? Why does a step forward in one's career usually mean a larger, and not a more efficient, company car? Examples abound of institutional mechanisms such as reward mechanisms and promotion bonuses signaling that "bigger is better," undermining the "less but better" orientation, instead of signaling that "better is better."

The situation is different for the highest income strata, the top percentile, as strong sustainable consumption requires enforcing absolute limits on their individual resource consumption. This could be achieved, for instance, by introducing a maximum income, realized by income caps or by tax rates above 90% for all earnings higher than a certain threshold as was the case in the United States in the pre-Reagan era. Add to that sufficiently high levels of property tax, wealth tax, corporate taxes above the income-tax level and a financial transaction tax and neither public deficits nor ability to finance the social floor is an insurmountable problem anymore.[3] If we

[3] Economists' arguments that higher taxation rates drive business leaders away is relevant for only a very small group of overpaid top earners, most of them in the banking and speculation sector. Moving business is possible only for the sector which has no physical production, i.e., the oversized financial industries, the

were to re-establish the functional income distribution of 40 or 45 years ago all financial problems of the welfare state are solved. It remains to be seen, however, which alternative mechanisms of distinction and status signaling will develop once income levels are no longer suitable for such purposes, and if they are in line with sustainable social development.

Empty public coffers are just one side of the coin; the other has been accumulating private wealth. Taxation, while changing income distribution, affects wealth distribution only in the very long run through cumulative effects. As wealth distribution in capitalist societies also implies a similar distribution of power and influence, for democratic reasons a more equitable situation is desirable. It could be achieved by broadly rejected measures such as expropriation, or annual tax payments higher than the actual income, or by capping inheritance. For instance, €1 million (US$1.3 million) would be enough to provide an income of €10,000 (US$13,000) a month, free of work, from cradle to grave. Thus an inheritance cap that leaves about that much to the heirs, and the remainder to the public coffers (financing the infrastructure the testator has used to make a fortune) would still leave them in a privileged situation, but would simultaneously solve budget and wealth distribution problems.

Toward Strong Democracy

Only a few people in the highest income group will voluntarily give up part of their wealth and consumption—the upper classes increasingly tend to regard their privileges as well-deserved entitlements and oppose any redistribution measures (Heitmeyer, 2012). Here, rather than motivating actions to facilitate acceptance of change, institutional mechanisms restricting consumption are needed, regardless of whether those affected consider the outcome to be negative or positive. Such limitations should not be seen as a *constraint* on some people's autonomy but rather as a *condition* for autonomy for all, a safeguard for individual freedom of choice within the environmental space, and a means to protect the public good (Eckersley, 2006). Governments dedicated to the public good would stop giving priority to the preferences of a tiny subset of the existing generation who derive massive benefits from overexploiting the Earth's sources and sinks, and instead factor in the "unfreedoms" imposed on the present victims of environmental injustice, and the longer-term cost of failing to act for everyone (Eckersley, 2006).

The way politicians have bowed to pressure from the coal and oil industries regarding climate policy, or how the financial industry managed to escape effective regulation (let alone the idea that quasi-monopolies would be dissolved) illustrates this point. As only one example, albeit a revealing one, J. Pierpont Morgan's Northern Securities railway company was dissolved after 1902, but not the J. P. Morgan bank 100 years on. A second phenomenon seems to reiterate itself; in the 1890s the captains of industry were arrogant enough to believe themselves superior to the elected government. Theodore Roosevelt, the "trust buster," showed them that no man, no matter how powerful, was above the law. Today banks "too big to fail" are not dissolved but rescued at almost any price, including escalating public debt.

This situation points to another important institutional mechanism necessary to unfold the full potential of strong sustainable consumption—strong democracy. The current version of thin liberal democracy permits a certain degree of citizen influence on political decisions, but it severely restricts full participation in precisely those areas that really count from an environmental point of view such as consumption options, investment, production, and technology. Democracy tends to end at the factory entrance and a strongly sustainable society will need to change that, strengthening and extending the democratic domain. This would require limiting lobbying and demarcating the terrain of public from that of private interest, for instance by closing the revolving doors between business and politics in the UK and the United States and ending the equivalent practice of *pantouflage* in France. Admittedly, such a political move will be hard to implement, despite public support, as the sway plutocrats hold over the political process has been continuously gaining strength, in particular in the United States (Fullbrook, 2012).

The agents involved are not limited to the usual suspects and include representatives of environmental and justice nongovernmental organizations (NGOs), trade unions, ethically motivated members of religious groups, and consumer organizations as well as the "angry citizens," members of the disappointed middle class who have recently been organizing against current policies in quite a number of European countries. They are a new, potentially powerful group and have the motivation, skills, and resources to make a difference. Unlike their less affluent counterparts who often lack higher education and organizational experience, middle-class persons can effectively articulate their case in policy and media. These people, after long striving for a better life, now feel betrayed by the prevailing situation where even

failed and physically unproductive business sector producing speculative bubbles, with its huge bonuses and profit margins. The current coexistence of access to money from the European Central Bank for about zero cost, and the credit crunch for the real economy as banks do not pass on that money, illustrate the parasitic role of the large banks.

white-collar workers feel the threat of precarisation. Their key motive is the loss of certainty regarding the future, and the decreasing possibility of planning one's own life. Sustainability and sustainable consumption communication would be well advised to address this aspect in prospective campaigns and communications. Otherwise, such justified dissatisfaction may be channeled toward counterproductive actions and reactionary groups, such as in the Tea Party in the United States or the growing right wing populist parties in Europe.

Ceiling, Floor, and a Sustainable Pension System

As a final example (comprehensive coverage is impossible), at first glance not linked to the upper and lower boundary of the environmental space, consider the structure of the pension system for the elderly retired, at first active and later in need of caring. Current practices focus on trying to reduce the retirement period, threatening people with old-age poverty if they stop paid work at the promised time—and indeed old-age poverty has resurfaced in countries where it was previously overcome and become more prevalent in countries where less progress had been made (OECD, 2011). This situation provides one reason to apply the floor principle with its physical transfers to the pension system. A second effect to be accounted for is the ongoing promotion—including by many governments—of private pensions. In Europe, their success became possible only once governments reneged on their promises of retirement payments sufficient to maintain previous standards of living. The effects of privatization have been manifold. The forced savings reduced consumption and thus economic activity. The enormous financial volumes cashed in were channeled to speculative ventures due to the shortage of lucrative real-world investment opportunities, not least a result of reduced consumption and employment, thus co-producing the series of bubbles and their bursting. In the imploding bubbles, billions of dollars, Euros, yens, and pounds of social security saving have been "burned." Finally, privatization constitutes a procrustean bed for future economic and social policies regardless of the political orientation of any newly elected governments. With a rising share of voters in retirement age, no government can ignore their demands for a secure, decent, non-declining (and at best significantly increasing) pension. As the savings have not been stockpiled but invested, payments in both systems, private and public, come from the economic success of the same year. However, while in a public pension system the source is salaries, in a private system it is profits. So, in a public system, policy should be geared toward high salaries and full employment, as then social security payments and pensions will be secure. With a private system, the source of pension payments is the corporate surplus. Therefore, a government trying to ensure the security of pensions has to do its best to increase corporate profits, even if this objective opposes decent salary levels, full employment, and good work. High business profits require low corporate tax rates, and this deprives public budgets of essential revenues. Finally, comparing the aggregate social security payouts and business profits indicates that all major economies would need to grow significantly to generate the revenue required for a private pension system. Privatization of public services is not only environmentally unsustainable, but is socially unsustainable as well.

Conclusion: Action for Change is Overdue, First Steps Are Possible

Environmental space is a metaphor that can be used to communicate both the need for limiting consumption to stay within the safe operating space for humankind and to establish a social protection floor lifting the world's poor above its lower threshold, the *linea de dignidad.* One of the strengths of this concept is its foundation in research, providing hard facts for decision making.

Strong sustainable consumption requires institutional change, first of all regarding the orientation and problem perception of contemporary society. As long as unsustainability is considered to be merely a technical or economic problem in need of some incremental fixes, there is little hope for sustainable development. While such interventions are necessary, indispensable even, the prevailing political and cultural context has to change. Social re-engineering, the promotion at all levels of a new cultural narrative explicitly oriented to overriding humanity's innate expansionist tendencies, myopia, and greed (Rees, 2012), is as important as re-engineering our infrastructural and production systems toward "better but less" instead of "more is better."

However, while this holds for the global consumer class, the poor need a different approach, with just "enough" quantity, and above that, growth replaced by quality improvements. "Better" is their joint vision or *leitbild*, the vanishing point of the desirable and the possible. To the majority of people it is currently alien, but could become desirable as "consuming better" tends to increase labor demand and decrease resource consumption per unit of price. The higher prices for higher quality consumer goods is one way to avoid rebound effects, and to decouple GDP and resource consumption, maybe even one of the last chances for sustainable GDP growth. A massive change will be required on the part of the Rich

and the Dirty if they wish to sustain their position as social role models.

The mechanisms of society need to change as well. This will require an instrument mix including legal, financial, and informational measures, with a redistribution of income and wealth to be complemented by an unconditional minimum income, much of it in physical terms, and choice editing to support collective changes in consumption habits (Woersdorfer & Kaus, 2011).

Strengthening democracy is a *sine qua non* for a sustainable society. Doing so will require limiting the influence of business lobbies and instead encourage civil engagement and a strong civil society. It is civil society organizations that—despite their dependence on the support of their own constituency—can most easily argue and campaign against the existing orientations, changing them over time and paving the way for politics to adjust the institutional mechanisms consistent with the emergent change in orientations.

Governments should not be afraid of taking measures unpopular with plutocrats—predictions of flight of bright and talented people from high taxation rates is not only rather hollow, but contradicts past experience (the income differentials have been much higher in the United States than in Europe for most of the time since World War II). A general tendency toward footlooseness is more a characteristic of the financial sector, and its departure should not be discouraged. A drastically downsized financial sector (banks, insurance companies, investment, equity and hedge funds) that serves households and the real economy is an economic necessity and local savings bank, credit unions, and similar institutions are not likely to flee.

Regarding pensions, the system should be transformed from private to public to reduce speculation as well as to secure the underlying assets and base them on employment and income instead of corporate profits, thus avoiding a straightjacket for future economic politics. As a first step, at least those private financial institutions that were saved by governments rushing to rescue banks and insurance companies, and that are now in state ownership or custodianship, should be forced to return this activity to public institutions.

The suggestions made in this article are not equivalent to overcoming consumption-based capitalism, though they would modify it significantly. Thus, although the resistance would be enormous, trying to stigmatize those supporting such a transformation as revolutionaries or even "socialists" is not justified. They may rightly be called "radicals" as the proposals seek to address the root (*radix* in Latin) causes of the problems. They are not "utopians" (*u topos* in Greek meaning placeless) as all proposals are based on past experience abroad, practices in past or existing societal subgroups, or ongoing reflections and experiments. It is high time for a better alternative, such as strong sustainable consumption in a degrowing economy that leads to an improved quality of life for the 99%. If that transition does not start soon, we will lose the chance to choose if we want it by design or by disaster. It might soon be too late for design.

References

Alber, J. 2002. Besser als sein ruf: der sozialstaat als erfolgreiches modell [Better than its reputation: the welfare state as a successful model]. *WZB-Mitteilungen* 98:24–28 (in German).

Arrow, K., Bolin, B., Costanza, R., Dasgupta, P., Folke, C., Holling, C., Jansson, B.-O., Levin, S., Mäler, K.-G., Perrings, C., & Pimentel, D. 1995. Economic growth, carrying capacity, and the environment. *Ecological Economics* 15(2): 91–95.

Ayres, R. 1999. *Turning Point: The End of the Growth Paradigm*. London: Earthscan.

Bilancini, E. & D'Alessandro, S. 2012. Long-run welfare under externalities in consumption, leisure, and production: a case for happy degrowth vs. unhappy growth. *Ecological Economics* 84:194–205.

Bonaiuti, M. 2012. Degrowth: tools for a complex analysis of the multidimensional crisis. *Capitalism Nature Socialism* 23(1): 30–50.

Cinchon, M., Behrendt, C., & Wodsak, V. 2011. The UN social protection floor initiative: moving forward with the extension of social security. *IPG International Politics and Society* 2011(2):32–50.

Czada R. 1995. Institutionelle theorien der politik [Institutional theories of political action]. In D. Nohlen & H.-O. Schultze (Eds.), *Lexikon der Politik*. pp. 205–213, Munich: Droemer-Knaur (in German).

Daly, H. 1974. The economics of the steady state. *American Economic Review* 64(2):15–21.

Duraiappah, A. 1998. Poverty and environmental degradation: a review and analysis of the nexus. *World Development* 26(12): 2169–2179.

Eckersley, R. 2006. From the liberal to the green democratic state: upholding autonomy and sustainability. *International Journal of Innovation and Sustainable Development* 1(4):266–283.

Fischer-Kowalski, M., Madlener, R., Payer, H., Pfeffer, T., & Schandl, H. 1995. *Soziale Anforderungen An Eine Nachhaltige Entwicklung.* Forschungsbericht des IFF Zum Nationalen Umweltplan (NUP) [*Social Demands of Sustainable Development.* Research Report of the IFF to the National Environmental Plan (NUP)]. Vienna: Institute for Interdisciplinary Studies, Universities of Innsbruck (in German).

Fisher, I. 1906. *The Nature of Capital and Income*. New York: Kelly.

Fuad-Luke, A. 2009. *Design Activism: Beautiful Strangeness for a Sustainable World*. London: Earthscan.

Fullbrook, E. 2012. The political economy of bubbles. *Real-World Economics Review* 59:138–154.

Girod, B. & de Haan, P. 2009. GHG reduction potential of changes in consumption patterns and higher quality levels: evidence from Swiss household consumption survey. *Energy Policy* 37 (12):5650–5661.

Hille, J. 1997. *The Concept of Environmental Space: Implications for Policies, Environmental Reporting and Assessments*. Co-

penhagen: Office for Official Publications of the European Communities.
Heitmeyer, W. 2012. Rohe bürgerlichkeit: bedrohung des inneren friedens [Raw civility: a threat to domestic peace]. *Wissenschaft und Frieden* 30(2):39–41 (in German).
International Labour Office (ILO). 2011. *Social Protection Floor for a Fair and Inclusive Globalization*. Geneva: ILO.
Kallis, G. 2011. In defence of degrowth. *Ecological Economics* 70 (5):873–880.
Kallis, G., Martinez-Alier, J., & Norgaard, R. 2009. Paper assets, real debts: an ecological-economic exploration of the global economic crisis. *Critical Perspectives on International Business* 5(1–2):14–25.
Kraemer, K. 2010. Abstiegsängste in wohlstandslagen [Relegation fears in prosperous situations]. In N. Burzan & P. Berger (Eds.), *Dynamiken (in) der Gesellschaftlichen Mitte*. pp. 201–229. Wiesbaden: VS-Verlag für Sozialwissenschaften (in German).
Latouche, S. 2010. Growing a degrowth movement. In Worldwatch Institute (Ed.), *State of the World 2010: Transforming Cultures: From Consumerism to Sustainability*. pp. 181. New York: W.W. Norton.
Lorek, S. 2010. *Towards Strong Sustainable Consumption Governance*. Saarbrücken, Germany: Lambert Academic Publishing.
Lorek, S. & Fuchs, D. 2013. Strong sustainable consumption governance: precondition for a degrowth path? *Journal of Cleaner Production* 38(1):36–43.
Lorek, S. & Spangenberg, J. 2001. Reichtum und umwelt [Wealth and the environment]. In J. Stadlinger (Ed.), *Reichtum Heute* [*Wealth Today*]. pp. 155–170. Münster: Westfälisches Dampfboot (in German).
Lorek, S. & Spangenberg, J. 2014. Sustainable consumption within a sustainable economy: beyond green growth and green economies. *Journal of Cleaner Production* 63(1):33–44.
Martinez-Alier, J. 2002. *The Environmentalism of the Poor*. Northampton, MA: Edward Elgar.
Matutinović, I. 2006. Mass migrations, income inequality and ecosystem health in the second wave of globalisation. *Ecological Economics* 59(2):199–203.
Max-Neef, M., Elizalde, A., & Hopehayn, M. 1989. Human scale development: an option for the future. *Development Dialogue* 1989(1):7–80.
Metzner, A. 1997. Konstruktion und realität von umwelt- und technikrisiken: ansätze sozialwissenschaftlicher risikoforschung [Construction and reality of environmental and technological risks: social science approaches to risk research]. *Zeitschrift für Angewandte Umweltforschung* 10(4): 472–487 (in German).
Meyers, J. 1983. *Großes Taschen-Lexikon* [*Encyclopedic Dictionary*]. Mannheim/Wien/Zürich: Bibliographischen Institut (in German).
Muraca, B. 2013. Decroissance: a project for a radical transformation of society. *Environmental Values* 22(2):147–169.
Ninimäki, K. & Hassi, L. 2011. Emerging design strategies in sustainable production and consumption of textiles and clothing. *Journal of Cleaner Production* 19(1):1876–1883.
Organiation for Economic Cooperation and Development (OECD). 2011. *Divided We Stand: Why Inequality Keeps Rising*. Paris: OECD.
Opschoor, J. 1987. *Duurzaamheid en Verandering: Over Ecologische Inpasbaarheid van Economische Ontwikkelinge* [*Sustainability and Change: About the Environmental Suitability of Economic Developments*]. Amsterdam: Free University Press (in Dutch).
Rabl, A. & de Nazelle, A. 2011. Benefits of shift from car to active transport. *Transport Policy* 19(1):121–131.
Rees, W. 2012. 2000. Personal Communication. Professor Emeritus, University of British Columbia. June 18.
Raworth, K. 2012. *A Safe and Just Space for Humanity: Can We Live Within the Doughnut*? Oxfam Discussion Paper. Oxford: Oxfam International.
Rockstrøm, J., Steffen, W., Noone, K., Persson, A., Chapin, F., Lambin, E., Lenton, T., Scheffer, M., Folke, C., Schellnhuber, H., Nykvist, B., de Wit, C., Hughes, T., van der Leeuw, S., Rodhe, H., Sorlin, S., Snyder, P., Costanza, R., Svedin, U., Falkenmark, M., Karlberg, L., Corell, R., Fabry, V., Hansen, J., Walker, B., Liverman, D., Richardson, K., Crutzen, P., & Foley, J. 2009. A safe operating space for humanity. *Nature* 461(7263):472–475.
Schmidt-Bleek, F. 1994. *Wieviel Umwelt Braucht der Mensch* [*How Much Environment do Humans Need*]? Berlin: Birkhäuser (in German).
Schmidt-Bleek, F. 2008. Factor 10: the future of stuff. *Sustainability: Science, Practice & Policy* 4(1):1–4.
Schneider, F., Kallis, G., & Martinez-Alier, J. 2010. Crisis or opportunity? Economic degrowth for social equity and ecological sustainability: introduction to this special issue. *Journal of Cleaner Production* 18(6):511–518.
Smith, A. 1976 [1776]. *The Wealth of Nations.* Chicago: University of Chicago Press.
Spangenberg, J. (Ed.). 1995. *Towards Sustainable Europe: A Study from the Wuppertal Institute for Friends of the Earth Europe*. Nottingham: Russel Press.
Spangenberg, J. 2002. Environmental space and the prism of sustainability: frameworks for indicators measuring sustainable development. *Ecological Indicators* 2(3):295–309.
Spangenberg, J., Fuad-Luke, A., & Blincoe, K. 2010. Design for Sustainability (DfS): the interface of sustainable production and consumption. *Journal of Cleaner Production* 18(15):1483–1491.
Spangenberg, J. & Lorek, S. 2002. Environmentally sustainable household consumption: from aggregate environmental pressures to priority fields of action. *Ecological Economics* 43(2–3):127–140.
Spangenberg, J. & Lorek, S. 2003. *Lebensqualität, Konsum und Umwelt: Intelligente Lösungen Statt Unnötiger Gegensätze* [*Quality of Life, Consumption, and the Environment: Intelligent Solutions Instead of Unnecessary Conflicts*]. Bonn: Friedrich Ebert Stiftung (in German).
Spangenberg, J., Pfahl, S., & Deller, K. 2002. Towards indicators for institutional sustainability: lessons from an analysis of Agenda 21. *Ecological Indicators* 2(1–2):61–77.
Steffen, W., Rockström, J., & Costanza, R. 2011. How defining planetary boundaries can transform our approach to growth. *Solutions* 2(3).
Steen-Olsen, K., Weinzettel, J., Cranston, G., Ercin, A., & Hertwich, E. 2012. Carbon, land, and water footprint accounts for the European Union: consumption, production, and displacements through international trade. *Environmental Science & Technology* 46(20):10883–10891.
Strasser, J. 2011. Gleichheit, konsumzwang und wachstum [Equality, consumerism and growth]. *Perspektiven ds* 28(2):121–123 (in German).
Sukhdev, P. 2009. Costing the earth. *Nature* 462(7271):277.
The Economist. 2012. *For Richer, for Poorer*. Special Report: World Economy. *The Economist* October 13.
Tischner, U. & Schmidt-Bleek, F. 1993. Designing goods with MIPS. *Fresenius Environmental Bulletin* 2(8):479–484.
Triguero, A., Moreno-Mondéjar, L., & Davia, M. 2013. Drivers of different types of eco-innovation in European SMEs. *Ecological Economics* 92:25–33.
United Nations. 1948. *Universal Declaration of Human Rights*. Article xxii and xxv. http://www.un.org/en/documents/udhr/. October 3, 1998.
United Nations General Assembly. 2012. *The Future We Want*. New York: United Nations.
von Weizsacker, E., Hargroves, K., Smith, M., Desha, C., & Stasinopoulos, P. 2010. *Factor Five: Transforming the*

Global Economy through 80% Improvements in Resource Productivity. London: Earthscan.

World Commission on Environment and Development (WCED). 1987. *Our Common Future*. Oxford: Oxford University Press.

Weinzettel, J., Hertwich, E., Peters, G., Steen-Olsen, K., & Galli, A. 2013. Affluence drives the global displacement of land use. *Global Environmental Change* 23(2):433–438.

Woersdorfer, J. & Kaus, W. 2011. Will nonowners follow pioneer consumers in the adoption of solar thermal systems? Empirical evidence for northwestern Germany. *Ecological Economics* 70(12):2282–2291.