



---

Year: 2009

---

## **Sufficiency – does energy consumption become a moral issue?**

Muller, A

Abstract: Reducing the externalities from energy use is crucial for sustainability. There are basically four ways to reduce externalities from energy use: increasing technical efficiency (“energy input per unit energy service”), increasing economic efficiency (“internalising external costs”), using “clean” energy sources with few externalities, or sufficiency (“identifying ‘optimal’ energy service levels”). A combination of those strategies is most promising for sustainable energy systems. However, the debate on sustainable energy is dominated by efficiency and clean energy strategies, while sufficiency plays a minor role. Efficiency and clean energy face several problems, though. Thus, the current debate should be complemented with a critical discussion of sufficiency. In this paper, I develop a concept of sufficiency, which is adequate for liberal societies. I focus on ethical foundations for sufficiency, as the discussion of such is missing or cursory only in the existing literature. I first show that many examples of sufficiency can be understood as (economic) efficiency, but that the two concepts do not coincide. I then show that sufficiency based on moralization of actions can be understood as implementation of the boundary conditions for social justice that come with notions of liberal societies, in particular the duty not to harm other people. By this, to increase sufficiency becomes a duty beyond individual taste. I further illustrate this in the context of the adverse effects of climate change as externalities from energy use.

Posted at the Zurich Open Repository and Archive, University of Zurich  
ZORA URL: <https://doi.org/10.5167/uzh-26137>  
Book Section

Originally published at:

Muller, A (2009). Sufficiency – does energy consumption become a moral issue? In: Broussous, C; Jover, C. Act! Innovate! Deliver! Reducing energy demand sustainably. Stockholm: ECEEE, 83-90.

# Sufficiency – Does Energy Consumption Become a Moral Issue?

Adrian Muller

Socio-economic Institute (SOI) & University Research Priority Programme in Ethics (UFSPE), University of Zürich  
Blümlisalpstrasse 10  
CH-8006 ZÜRICH  
e-mail: adrian.mueller@soi.uzh.ch

## Keywords

sufficiency, consumption, ethics, energy services, demand, behavioural change, liberalism, individual action

## Abstract

Reducing the externalities from energy use is crucial for sustainability. There are basically four ways to reduce externalities from energy use: increasing technical efficiency (“energy input per unit energy service”), increasing economic efficiency (“internalising external costs”), using “clean” energy sources with few externalities, or sufficiency (“identifying ‘optimal’ energy service levels”). A combination of those strategies is most promising for sustainable energy systems. However, the debate on sustainable energy is dominated by efficiency and clean energy strategies, while sufficiency plays a minor role. Efficiency and clean energy face several problems, though. Thus, the current debate should be complemented with a critical discussion of sufficiency.

In this paper, I develop a concept of sufficiency, which is adequate for liberal societies. I focus on ethical foundations for sufficiency, as the discussion of such is missing or cursory only in the existing literature. I first show that many examples of sufficiency can be understood as (economic) efficiency, but that the two concepts do not coincide. I then show that sufficiency based on moralization of actions can be understood as implementation of the boundary conditions for social justice that come with notions of liberal societies, in particular the duty not to harm other people. By this, to increase sufficiency becomes a duty beyond individual taste. I further illustrate this in the context of the adverse effects of climate change as externalities from energy use.

## Introduction

Reducing the externalities from energy use such as the adverse effects of climate change is crucial to make our societies more sustainable. Basically, there are four ways to reduce these externalities: First, there are strategies to increase technical efficiency, that is to provide a certain level of energy services with lower energy input and correspondingly lower externalities;<sup>1</sup> second, there are strategies to increase economic efficiency. An action or situation is economically efficient, if marginal costs incurred equal marginal benefits. This “gets the prices right”, e.g. via internalisation of externalities and thus leading to efficient levels of energy use given individual agents' preferences (it becomes more costly to use gasoline due to a CO<sub>2</sub> tax, for example, and gasoline use and pollution correspondingly decrease). Third, there are clean energy strategies, promoting energy sources with relatively low external effects<sup>2</sup>. Fourth, there are sufficiency strategies, which make the levels of energy services themselves a topic for discussion and aim at lowering those. Sufficiency thus addresses the level of output (or consumption) per se – and not in relation to the inputs. It asks whether an activity needs to be performed at all (resp. at a certain level) and not whether it is performed “efficiently” (resp. at an efficient level). Insofar as externalities are correlated with consumption, consumption reduction reduces externalities. A combination of those strategies may be most promising to reduce the externalities from energy use. However, the current debate on sustainable energy systems is largely dominated by technical and economic efficiency and clean energy strategies, while sufficiency plays a minor role only (examples are the ongoing debates on national and international energy policy, see e.g. UVEK 2007, ESC 2008 and OcCC 2008 for Switzerland and the debate in the EU, EU 2008).

The focus on efficiency and clean energy faces several problems. First, there are the problems of technical efficiency: the rebound effect (simplified: lower energy bills increase disposable income, which in turn is used for (more energy-intensive) consumption elsewhere – the size of this effect is subject to controversies, see e.g. Dimitropoulos and Sorrell 2006) or a target shift of targeted measures (simplified: more energy efficient automobile motors are not used to drive the same mileage with less gasoline, but rather to increase mileage or to use heavier

cars with the same gasoline input, i.e. at the same costs), or an increasing total (if the aggregate total units demanded for a certain energy service grow faster than the energy use per unit decreases). Second, there are the problems of economic efficiency: identifying prices for all goods and bads involved and the corresponding conceptual, information and weighting problems related to cost-benefit and other valuation analysis (see e.g. Schläpfer 2008 and references therein). In addition, if increased economic efficiency is realised only in part of an economy, it can even lead to adverse effects. This can be the case if internalisation is only partly achieved, e.g. for some fuels. Substitution effects then may even increase some external costs.<sup>3</sup> Third, clean energy may face problems of scale, when relatively low external effects add up on aggregate (cf. the various problems related to global bioenergy strategies, e.g. the potential competition for land and water between biomass for energy use and food; see e.g. Muller 2008 for some overview and references).<sup>4</sup>

These observations, i.e. the dominance of efficiency and clean energy strategies in the energy debate and the problems of these strategies, motivate the first part of my main thesis: *efficiency and clean energy strategies alone will not lead to the necessary reductions of externalities to reach a sustainable energy system.*

This thesis clearly calls for suggestions what then, if not efficiency and clean energy, will lead to the needed reductions of externalities. This leads to the second part of my main thesis, namely that *to achieve the needed reductions of externalities, sufficiency strategies need to prominently complement efficiency and clean energy strategies.*

This suggestion is based on the claim that sufficiency strategies support externality reduction in energy use via consumption reduction without the potential problems identified above for efficiency and clean energy. I will corroborate this in the next section, where sufficiency is discussed in depth.

This thesis is not new. Many governmental and non-governmental organisations emphasize that consumption reduction needs to complement efficiency strategies to reduce the externalities from energy use (e.g. eceee 2006; BAFU 2006, p47). Similar, many organisations promote consumption reduction as a means to reach a more sustainable society, as the leverage of changes in consumption regarding changes in externalities (not only from energy use) is large. On the other hand, sufficiency strategies face low acceptance in politics and society, as they are usually understood to be tightly linked to renunciation and lower living standards. I also want to point out that sufficiency may *not replace, but complement* efficiency and clean energy strategies. Governmental regulation and policy instruments for increased efficiency and clean energy, such as energy and CO<sub>2</sub> taxes, green certificate trade, emissions trade or prescribed efficiency levels of appliances can achieve much and are necessary and important means on the path to reduced externalities from energy use. Just as I claim that efficiency alone will not solve the externality problem of our energy use, I also am convinced that sufficiency strategies alone will not.

In this paper, I clarify what “sufficiency strategies” actually mean. To be effective, an investigation into “sufficiency strategies” has to provide guidance for actions to individuals and society, in particular to politics, i.e. to make normative propositions on “how one should act” and how this may become realised. For this, I will first define what I mean with “sufficiency strategies”. Furthermore, I will relate them to efficiency strategies and clarify differences. Many aspects of sufficiency can be understood as aspects of encompassing long-term strategies for (economic) efficiency. This helps to at least partly reconcile economic or efficiency-based approaches with the idea of sufficiency.

Second, I develop an ethical framework for sufficiency<sup>5</sup>. Current research on sufficiency is mainly done in applied and empirical contexts in socio-psychology or marketing research. It focuses on analysis of peoples' attitudes, motivations and behavioural patterns, and what may influence those, see e.g. Kaufmann-Hayoz and Gutscher 2001, Gutscher in Jochem 2004, Jamieson 2006; it is connected to the “ethical consumer” and “voluntary simplicity”, see e.g. Craig-Lees and Hill 2002, Shaw and Newholm 2002, Zavestoski 2002, Huneke 2005, McDonald et al. 2006. This is descriptive in the sense that it investigates how people act and how, given these facts, one may support more sufficient action. In this work, the main argument for sufficiency is the reduction in externalities. In contrast to the discussion of efficiency strategies, largely missing in this important research is an explicit discussion of the ethical foundation of sufficiency (for efficiency, it is welfare maximising utilitarianism), which is necessary to argue for normative propositions for actions and policies, i.e. for propositions on what individuals “should” do because it is “good” and on how the state may support these actions. Exceptions are Princen (2005), Linz (2004) or Jamieson (1992), for example, who develop normative notions of sufficiency based on ethical considerations, which I will shortly discuss in the next section. There I will illustrate that without such an ethical framework, sufficiency cannot be developed beyond the status of voluntary strategies. Such are maybe “nice to have” but will not attain a more binding character. “So what?” then may remain the attitude of many towards it.

A discussion of ethical aspects of consumption reduction as a means to increase sustainability in our societies has already been led in the context of the environmental movement and the then newly emerging environmental ethics in the 1960ies, 70ies and 80ies (see e.g. some overview in Krebs 2005 or Brennan and Lo 2008). It inspired the

debate on sustainable energy consumption, but did not effect in fundamental behavioural changes and general implementation of sufficiency strategies. It was partly characterised by high hopes towards behavioural changes and social engineering and some authors even advocated large restrictions on personal freedom to achieve environmental improvement (e.g. Jonas 1979, p262, see also Krebs 2005). It never entered debates in official politics, though, which largely remained dominated by the goal to provide cheap central resources for the economy (such as energy, material, space, waste disposal capacity and risk insurance, Minsch et al. 1996).

This earlier debate illustrates the main danger of sufficiency strategies, namely that they become ideological, anti-liberal and fundamentalist in prescribing ways of life to individuals. In my research, I try to develop a modern concept of sufficiency, which accounts for this legacy, is adequate for a liberal society and has some chance to be accepted as an input to the political debate. Basically, this means that arguments for levels of “enough” in continuous consumption variables such as energy services have to be developed. Besides giving such arguments, the fundamental problem of sufficiency is to determine how much is “enough” and who may determine this. The context of a “liberal society” is thus a crucial general assumption that underlies my analysis and sets an ideological frame I do not call into question in this paper.

## **Sufficiency as Efficiency and Beyond**

Examples of technical and economic efficiency are readily given. Technical efficiency increases when gasoline consumption for the same travel distance and car weight is reduced. Economic efficiency increases when correct prices are used, such as when CO<sub>2</sub> from gasoline combustion becomes subjected to a tax and correspondingly increased gasoline prices in consequence reflect the social costs of CO<sub>2</sub> emissions. Technical and economic efficiency closely interplay, as improved technical efficiency is an important means to respond to measures that improve economic efficiency.

Sufficiency is a concept that needs further clarification. Princen (2005), for example, defines that “[Sufficiency] is the sense that, as one does more and more of an activity, there can be enough and there can be too much” (p.6). This is, actually, also a formulation to capture the essence of *economic efficiency*, where an activity is done up to the level, where the costs of undertaking it become larger than the benefits. More of this activity is “too much” in the well-defined sense of the neo-classical theory. Two of the three main examples to illustrate sufficiency in Princen (2005) can be understood as such encompassing, long-term efficiency strategies: setting harvest quotas for forest use and a fishery assure the long-term renewable use of the respective resource base. Only the third example he discusses in detail truly refers sufficiency: the decision of an island community to not “develop” by a new tunnel to the main-land and corresponding auto-mobility and easier access. This has strong conservationist traits and does less reflect a certain level of “enough” in a continuum than some fundamental discrete decisions on how the life of this island community should develop in future. In this example, the decision to abstain from auto-mobility was further simplified due to the particular geographic situation of a small island with reasonably well-established boat connection to the main land (city of Toronto). The ethical foundation for sufficiency developed by Princen (2005) is somewhat dispersed in his book. It is formulated most concisely on p18, where it is (implicitly) linked to a notion of “good life”, which is seen as a necessity for sustainability in a complex and uncontrollable world: “[...] the sufficient person exercises restraint and respite because such principles are consistent with a world that is ultimately unknowable and uncontrollable, [...]” The precautionary principle thus plays an important role as an argument for his notion of sufficiency. Later, he also refers to aspects of “quality of life”, when he lists actions that cannot be performed in an “efficient” manner, but need another attitude: playing, listening to a child, experiencing a sacred place,... (p 353). In an older paper, Princen (2003) is more explicit and describes sufficiency as a set of management principles: “Sufficiency - restraint, precautionary, polluter pays, zero, reverse onus, and principles like them – is a class of principles sensitive to critical environmental risks, risk export, and the evasion of responsibility for generating such risks.” (p 49).

Another approach is presented in Linz (2004)<sup>6</sup> who understands sufficiency as part of the political and personal mission posed to our generation to end overexploitation of nature and to advocate more just distribution of life chances.<sup>7</sup> Also after some further explication of this, this notion of sufficiency cannot be clearly separated from the concept “sustainability” and suffers similar problems of indeterminacy and unspecific generality. Furthermore, many of the examples referred in Linz (2004) are efficiency strategies. His normative basis for sufficiency is also very broad, but the notion of “quality of life” plays a crucial role. “Quality of life” serves as a general guiding principle on how to increase sufficiency. Several illustrative examples are given and explicate what “quality of life” could mean. Key are non-material aspects that should gain more importance.

A further approach is presented in Jamieson (1992), who gives some ethical foundation for increased sustainability based on the notion of “responsibility”. He bases his discussion on the claim that our current understanding of responsibility is tied to clearly identifiable actions, harms and agents, that for today’s environmental problems,

however, no one is responsible in this old sense, as they emerge from the aggregate actions of millions of people only. He then states that “Unless we develop new values and conceptions of responsibility, we will have enormous difficulty in motivating people to respond to this problem.” (p. 149). Implicitly, he discusses sufficiency as opposed to efficiency (which he claims cannot succeed in solving global problems such as climate change), but he does not further develop this concept.

I use a notion of sufficiency, which is clearly beyond efficiency on the one hand, but which is not as encompassing and indeterminate as the notion of Linz (2004) on the other. The notion of sufficiency I am interested in here is tightly linked to Jamieson’s approach based on responsibility and values and to Princen’s formulation via certain “management principles” such as the precautionary principle and restraint. Essential is the notion of some level of “enough” in continuous consumption variables of individuals, such as energy use, and in a main-stream context for industrialized liberal societies, such as for western urban middle- and upper-class households.<sup>8</sup> By this, it addresses situations of “sufficient life-style” rather than of “sufficient resource use”. It addresses situations where no “natural” cut-off or restriction exists (e.g. due to particular characteristics of the society considered, such as for inhabitants of a small island, where a decision between “cars” or “no cars” can be taken). Sufficiency thus relates to questions such as “how much (auto-)mobility or heated living-space, etc. is enough?”, assuming that “zero” is likely to be too low and the current level is likely to be too high. This provides some explication<sup>9</sup> of what I mean with “sufficiency”. I note that this conception of sufficiency is also closely related to the discussion in Darby (2007), which however also lacks a broader consistent ethical framework necessary to develop arguments for increased sufficiency in a liberal society.

To be specific, I condense this to a definition as follows, restricting the focus to energy: a western urban middle- or upper-class individual lives an energy sufficient life if a) s/he consumes energy not beyond some levels of “enough”; and these consumption levels are determined by b) some understanding of the externalities from energy consumption; by c) some understanding of this individual of what s/he truly “needs” to live a “good life”; and d) a sense of responsibility in the individual for the effects of his/her own actions (in particular including the global externalities from consumption decisions, which traditionally are not in the focus of responsibility for the effects of ones actions).

This notion of sufficiency is not independent from efficiency considerations (due to b), but it avoids the drawbacks of efficiency and clean energy strategies. It hedges against the rebound effect and the problems of clean energy via scrutinizing all consumption levels in general, independently of each other and irrespective of the material possibilities, and it avoids the problems of economic efficiency, as no general welfare accounting is necessary to arrive at decisions (c and d). I note that b) opens the possibility for regulatory action on the consumption levels, e.g. via taxation of externalities (as this “understanding” is not claimed on individual level), but that this has to be complemented by further principles (c and d) to go beyond efficiency.

## **An Ethical Framework for Sufficiency in Liberal Societies**

All in all, sufficiency is nice to have, but there is the danger that sufficiency beyond efficiency entirely remains at the discretion of individuals to choose a corresponding lifestyle or to act correspondingly and that policies to increase sufficiency thus necessarily remain weak. In this section, I develop an ethical framework for the notion of sufficiency defined above. By this, I mean that I develop arguments, why sufficiency is not merely a matter of individual taste but that there are compelling arguments also in the context of a liberal society that every western urban middle- and upper-class individual should increase sufficiency.

Based on the discussion in the previous section, I identify two possible approaches that are interlinked but focus on different aspects: first, there are arguments linked to some notion of “good life”; second, there are arguments linked to several principles for guidance in ones action. I will then argue for a certain principle as the most promising approach to arguments for sufficiency in a liberal society. In the subsequent section, I will then illustrate what this may concretely mean for levels of “enough” in continuous consumption variables such as energy consumption. First, I clarify the notion of “liberal society” I use.

### ***The Liberal Society***

As stated in the introduction, a main assumption for this discussion of sufficiency is the context of a liberal society. There are many conceptions for liberal societies (cf. e.g. Gaus and Courtland 2007), but some fundamental principles are always the same. These are the liberty of the individual resp. the pluralism of values, and the need for justification of restrictions on liberty. Gaus and Courtland (2007) state: “That the good life is necessarily a freely chosen one in which a person develops his unique capacities as part of a plan of life is probably the dominant liberal ethic of the past century.” and that “The fundamental Liberal Principle holds that restrictions on liberty must be justified [...]”. Liberty, the core of liberalism, is thus combined with some theory of social justice to hedge against

injustice. This captures the idea that only adverse effects on others confine individual freedom, resp. that the role of the state consists in “[seeking] to ensure that all its citizens will be able to pursue personal interests and private preferences under conditions that are convenient and equitable to all.” (Sagoff 1988, p146), resp. “[...] the basic task of the government is to protect the equal liberty of citizens.” (Gaus and Courtland 2007). Depending on the notion of liberty used, the task of the government, i.e. protecting individual liberty, can take very different forms.

For this article I do not further specify the form of the liberal society I address (e.g. whether it is a direct or representative democracy, whether it is capitalist, etc.) beyond the two core aspects of 1) the liberty of the individual, reflected in its freedom to chose a notion of good life, only restricted by 2) some “boundary conditions of social justice” that allow to restrict individual liberty, reflected in the fact that some actions may be regulated by the state or judged as morally wrong.

### ***Sufficiency, virtues and the “good life”***

The reference to the “good life” takes up the ancient philosophical question how a human “should” live. This question is understood in an encompassing sense, covering a persons’ actions and attitudes, thus, the person’s whole being. Classically, this is linked to virtues that should govern our being and actions or to values that one should hold valid. Proposals for concepts of “good live” cover a wide range (see e.g. Düwell et al. 2006, p82ff). An example is the Aristotelian conception that aims at perfection of the genuinely human abilities such as social interaction or reason. This then leads to cultivation of virtues such as prudence, justice or temperance. Another example is the conception by Nussbaum (1990) who posits 10 basic capabilities that are necessary for a “good life”. They comprise capabilities such as bodily health and integrity, the capability to play and having emotions. This focus on capabilities leaves more room for individual realisation than the classical Aristotelian conception as it focuses on boundary conditions that need to be met to enable a good life but does not prescribe the concrete contents of such.

XXX COMMENT ON GOOD LIFE: may add stuff on Nussbaum: I understand Nussbaum’s notion of GL as CONDITIONS in the sense that

if I have these conditions implemented, then I CAN lead a GL. NOT

if I have these conditions implemented, then I DO lead a GL!! (and for me, this difference is crucial, as the first notion is liberal, the second not, in my opinion). XXX

XXX read notes in ASRELEO\_EmissionsTradeAdrianMuller\_NOTES XXX

Some conceptions of “good life” with the corresponding set of values, virtues or capabilities go along with reduction in consumption (e.g. temperance, partly: prudence) or are not at odds with such reduction above a certain basic level (Nussbaum’s capabilities) and are thus compatible with increased sufficiency. For energy use, such a sufficient conception of “good life” would mean, for example, driving less and smaller cars in a car-sharing pool. Concrete indication of which level of consumption is sufficient, e.g. regarding car use, is difficult to give. In a liberal society (cf. above), this remains at the discretion of individuals in the context of the notion of “good life” adopted and rests on the individuals’ capability to recognise which level is “enough” (this would be given, for example, if Nussbaum’s capabilities for a good life are assured; her sixth capability – practical reason - encompasses this; or, with an Aristotelian conception, by the virtue of temperance). Restriction in the choice of ones own understanding of “good life” is only possible inasmuch a certain notion of good life leads to *actions* that violate the boundary conditions of social justice.

### ***Sufficiency and “moralization” of individual actions***

For the discussion here, moralization of individual actions denotes the process that certain hitherto clearly non-moral actions become moral in the sense that they become judged as *morally* wrong or right. Moralization of individual actions is linked to the notion of a “good life”, but has a different focus inasmuch as it does not focus on the whole being of a person but only on certain aspects thereof, namely single actions or types of actions.

Giving arguments why certain actions may be morally wrong or right and why other actions may be non-moral (i.e. the question of moral wrongness or rightness is not adequate) lies at the core of ethics – as ethics ultimately aims at providing guidance on “how to act”. Consequentialist theories, for example, moralize actions in the sense that an action is “morally right” if it increases some notion of the “good”. Utilitarianism may serve as the prime example, where every action that increases the aggregate utility, e.g. welfare, is morally right. A non-consequentialist example of how actions are moralised is Kant’s categorical imperative “Act in such a way that you treat humanity, whether in your own person or in the person of any other, always at the same time as an end and never merely as a means to an end.” (Kant 1785).

Actions have moral quality only in relation to some principles or theories. As for the notions of “good life”, proposals for principles and corresponding normative propositions for action are widely diverse. Examples are actions that are unjust in the context of some theory of justice, actions that harm others in the context of the principle that human beings have dignity or actions that increase inequality in the context of a theory that posits that we have a duty to reduce inequalities. Examples are also sins in the context of Christian morality. In liberal societies, uncontested acceptance of the normative quality of some actions and corresponding principles or even a corresponding ethical theory is usually not generally given.<sup>10</sup> Thus, religious rules for example, that were widely accepted for centuries may lose their normative quality today, at least in parts of society, and, more importantly, before law (e.g. regarding sexual orientation, etc.).

Reduction in consumption can be linked to the normative rules that derive from some principles or ethical theories. Examples are the principle to respect other human beings (leading to the duty not to harm other people, e.g. due to harmful emissions from power generation), the precautionary principle or the principle to respect the environment. Those can thus be arguments for sufficiency strategies. For sufficiency in energy consumption, moralization of actions would mean, for example, that demand for “high” room temperatures in heating living space, demand for cooling in summer, the area of heated living space itself and mobility demand become judged as “excessive” beyond a certain level, as “morally wrong”.

It is important to note that for moralization of actions (in contrast to notions of good life), the context of a liberal society provides a unique set of principles (namely the boundary conditions of social justice) that are by definition valid beyond the discretion of individual acceptance. I will elaborate this in the next subsection.

### ***Sufficiency Policy in Liberal Societies***

While the approach via the “good life” would challenge the core of liberal societies, the approach via actions strengthens the standing of the boundary conditions already present. Prescribing some notion of “good life” as the correct one is not compatible with liberalism. However, restrictions on personal liberty in reference to the boundary conditions of social justice are possible. This aims at regulating certain outcomes, resp. actions that lead to those and does not try to regulate individual notions of “good life” in an encompassing sense. Some principles from these conditions of social justice restrict actions also in such a way as to increase sufficiency. Discussing sufficiency via the moralization of (certain) actions is thus more promising in a liberal society. In addition, besides incompatibility of liberalism with sufficiency based on a notion of “good life”, this approach would face problems of aggregation due to the individual character of a “good life”. Allowing for mutual offset between different individuals is not possible on this basis (e.g. that a group of individuals is on average sufficient, but each individual has some aspects that would, if present in all individuals, lead to non-sufficient aggregate outcome: one individual may eat meat every day but does never travel while another is vegetarian but travels by plane some times a year).<sup>11</sup> The possibility of aggregation in a sufficiency strategy based on moralization of actions makes it more compatible with a liberal society, as more diversity in individual conceptions of “good life” is possible. Clearly, on a voluntary base, discussion and information on notions of “good life” that are compatible or supportive to sufficiency is possible also in a liberal society and, in my opinion, also necessary and useful.

Depending on the exact notion of liberal society used, several principles for sufficiency may be derived from the boundary conditions of social justice (such as duties to help the poor and needy, the duty not to tolerate injustice, the duty not to profit from injustice, or the duty not to harm others). A common baseline of all notions of liberal societies is the obligation not to harm other people. This is even conceded by most libertarians (cf. Vallentyne 2006 and the discussion in Bleisch 2009). This minimal common baseline is actually enough to argue for sufficiency in a liberal society. Therefore, I do not further discuss other principles.

The duty not to harm others is very general. It can also be phrased in more direct relation to the notion of liberal society. This is achieved via the extension of the system boundaries of a liberal society, which is necessary in a globalized world. Referring to the role of the state, “Protecting the equal liberty of its citizens”, the notion of “citizen” needs to be extended in a globalised world. The boundary conditions of social justice are not understood to apply to the members of the liberal society in question only (e.g. to the population of a western nation such as Switzerland), but to all human beings affected by actions taken by members in this society. It is this aspect that moralizes consumption decisions also in case one employs a nation-centered notion of liberal society and when consumption does not constrain the liberty of fellow-citizens in the liberal society.

To argue how sufficiency is related to the duty not to harm, I further restrict the discussion on energy consumption and climate change. Given the factual knowledge from the IPCC 4<sup>th</sup> Assessment Report on Climate Change (IPCC 2007), it can be concluded that current and future energy consumption in western societies (i.e. in particular of the western urban middle- and upper-class) will, if nothing changes, considerably harm other people due to the adverse

effects of climate change (and that our past energy consumption already does and will also further harm other people).<sup>12</sup>

Mitigating greenhouse gas emissions is important to reduce future climate change and the corresponding harm. In the light of the discussion in the previous sections and my thesis stated in the introduction, sufficiency strategies are a necessary complement to efficiency and clean energy strategies to achieve these reductions. Due to the duty not to harm other people, western urban middle- and upper-class citizens (cf. section 2 above) in a liberal society thus have the duty to increase sufficiency. By this, sufficiency is not a matter of individual taste alone. This means, according to the definition from above, that we have the duty to a) consume energy services not beyond some levels of “enough”, which are determined by b) our understanding of the dynamics of externalities from energy consumption, c) some individual notion of a “good life”, and d) a sense of responsibility for the effects of our actions. Furthermore, as the duty not to harm others is part of the boundary conditions of social justice, the state may take some measures to avoid this harm, even though they may restrict individual liberty.

Two comments are necessary. First, although the principles referred to and the context of liberal societies are old ideas with many concrete realizations, the moralization of energy consumption has not yet become effective. Several approaches exist to explain this. Here, I mention “moral disengagement” as a concept that explains the difficulties of the extension of this moralization to a global level. It describes several psychological mechanisms how moralization can be avoided. Examples are minimising, ignoring or misconstruing the consequences of ones actions, euphemistic labelling or diffusion of responsibility (Bandura 2007). “Moral disengagement” is an adequate concept to address this lack of implementation in the context of sufficiency, as it addresses individual actions. Addressing these aspects is crucial for any implementation of sufficiency strategies. There, social psychology and related research has much to contribute (see e.g. Kaufmann-Hayoz and Gutscher 2001). Second, (economic) efficiency is often claimed to be most adequate in a liberal society to reduce externalities. One reason for this is the perception that efficiency interferes only minimally with individual notions of a “good life”. Besides the problems of (economic) efficiency mentioned already above, this is also questionable on more fundamental grounds, as efficiency strategies restrict individual decisions due to “ability to pay”. This is widely accepted and an integral part of market economies,<sup>13</sup> but in the context of a liberal society with boundary conditions for social justice, some more thoughts on this are necessary. Sufficiency is similarly adequate for a liberal society as efficiency. The difference is that the latter focuses on the core of “liberty” while the former focuses on “social justice”, i.e. the boundary conditions potentially restraining liberty. Both liberty and justice are however necessary for a liberal society.

## **Sufficiency in practice**

In the previous sections, I have argued that there is a duty to increase sufficiency. By the definition of sufficiency I give above, this has four parts, namely a) to consume at the levels of “enough”, derived from b) the knowledge on externalities, c) understanding of ones own notion of a “good life” and d) a sense of responsibility for ones actions.

The most pressing question clearly regards the levels of consumption to be aimed at. In the context of climate change externalities and energy use, three examples for aggregate levels that are promoted on policy level are the 2°C goal of the EU for maximal temperature increase, the 1 ton CO<sub>2</sub> per capita goal and the 2000-Watt society promoted by the ETH in Switzerland for optimal energy consumption per capita. This level is assumed to be high enough to live a decent life and low enough to keep externalities in an acceptable range. It is at about a third of current per capita energy use in Europe (Jochem 2004). The height of these levels is informed by current knowledge on resource dynamics, combined with the precautionary principle. Clearly, these levels are very coarse, given the complexity of the underlying externality dynamics.

These levels may be supported by policy via efficiency and clean energy strategies. The individual understanding of ones notion of a good life then helps to break down these aggregate levels into individual consumption levels for various types of energy services. The sense of responsibility supports that this is done in a critical manner and hedges against the problems of efficiency strategies and clean energy (rebound, etc., see above). This responsibility may manifest in a general attitude of restraint, temperance and prudence (cf. also the line of arguments in Jamieson 2007). The levels for more disaggregate energy consumption decisions thus could be self-determined in the context of responsible, informed action, where governmental regulation can help to give a general direction (e.g. via a heavy CO<sub>2</sub> tax), to keep information requirements tractable and to provide technical and institutional means to support achievement of these levels.

To avoid ending up with mere efficiency and clean energy strategies, information provision on and supportive institutions for sufficiency should be promoted by the government. This is, actually, an important part of what I mean with “sufficiency strategies need to prominently complement efficiency and clean energy strategies.” The regressive and unjust properties of many efficiency measures would also be less pressing in the context of complementing sufficiency strategies, as consumption reduction would already be realized by the latter and not only



due to price increases alone. An example of such information provision is BAFU (2006). This study provides detailed information on more sufficient consumption in Switzerland. Without radical changes in lifestyle, the potential for energy use reduction is estimated to be around one third.

It is illustrative to observe that economic efficiency actually provides an argument for certain levels of enough and for cut-off in continuous variables, namely the efficient level of consumption, given by the criterion that marginal costs of this action equal its marginal benefits. Given the total external costs of and benefits from oil consumption for heating a certain house were known, for example, the optimal consumption level could be found in this way as it would assure long-term efficient resource use. Implementation of this however faces the problems of efficiency strategies identified above. One way to try to reconcile sufficient levels with efficiency is a broadly framed “precautionary principle”. This can give arguments for some low levels, to be “on the safe side” regarding externalities from energy consumption. The precautionary principle can then in principle be framed as efficiency under uncertainty. This further illustrates that the differences between sufficiency and efficiency can be quite subtle.

## Outlook

This paper focuses on ethical aspects of sufficiency. Addressing other aspects is necessary. Addressing psychological aspects is of particular importance as sufficiency is often connected with renunciation. Here I want to mention two points. First, the nexus to renunciation is always made on the base of the current consumption level and life style. If sufficiency would become a widely used strategy, changes in values and notions of the “good life” would necessarily take place. Changes in consumption would then not necessarily be seen as renunciation anymore and may be seen as an increase in freedom rather than a restriction. Second, one could say that also efficiency strategies lead to renunciation. If some environmental tax to internalise externalities (e.g. a CO<sub>2</sub> tax on gasoline) leads to price increases, consumption reduction will occur. This is not framed as “renunciation” only because it is effective via the price system and not due to a moral imperative to restrain from consumption. This is clearly important psychologically, but it should be kept in mind when comparing efficiency and sufficiency regarding effects on individual consumption decisions. Furthermore, more research is needed to assess macro-economic effects of large-scale switches to more sufficient life-styles. A key issue is how a large reduction in consumption could be absorbed by the economy without generating large unemployment. Simultaneous redistribution of labour could offer a solution (as preferences change, due to increased sufficiency), but further analysis of this is clearly needed.

## References

- BAFU 2006, Umweltbewusster Konsum: Schlüsselentscheide, Akteure und Konsummodelle. Authors: Kaenzig, J. and Jolliet, O. Umwelt-Wissen Nr. 0616. Bundesamt für Umwelt, Bern.
- Bandura, A., 2007, Impeding Ecological Sustainability Through Selective Moral Disengagement, *Int. J. of Innovation and Sustainable Development* 2(1): 8-35
- Bleisch, B., 2009, Pflichten auf Distanz, PhD thesis, University of Zurich, forthcoming as a book.
- Brennan, A. and Lo, Z.-S., 2008, Environmental Ethics, *Stanford Encyclopaedia of Philosophy*, <http://plato.stanford.edu/entries/ethics-environmental/>
- Casal, P., 2007, Why Sufficiency Is Not Enough, *Ethics* 117(2): 296-326.
- Craig-Lees, M. and Hill, C., 2002, Understanding Voluntary Simplifiers, *Psychology & Marketing* 19(2): 187 – 210
- Darby, S., 2007, Enough is as good as a feast – Sufficiency as policy. *Eceee 2007 Summer Study Proceedings Paper* 1255: 111-119
- Dimitropoulos, S. and Sorrell, S. (2006). The Rebound Effect: Microeconomic Definitions, Extensions and Limitations. Working Paper, the UK Energy Research Center UKERC. [http://www.ukerc.ac.uk/content/view/130/187\(27.6.07\).](http://www.ukerc.ac.uk/content/view/130/187(27.6.07).)
- eceee 2006, The European Commission Green Paper on Energy Efficiency or Doing More With Less - A response from eceee, European Council for an Energy Efficient Economy
- ESC, 2008, Energy Strategy for ETH Zurich, Energy Science Center, ETH Zürich [http://www.esc.ethz.ch/box\\_feeder/StrategyE.pdf](http://www.esc.ethz.ch/box_feeder/StrategyE.pdf)
- EU 2008, Energy Web-Page of the European Union, [http://ec.europa.eu/energy/strategies/2008/2008\\_11\\_ser2\\_en.htm](http://ec.europa.eu/energy/strategies/2008/2008_11_ser2_en.htm)
- Fischer, J., Gruden, S., Imhof, E. and Strub, J.-D., 2007, Grundkurs Ethik, Kolhammer.
- Fullerton, D., 2008, Distributional Effects of Environmental and Energy Policy: An Introduction, NBER Working Paper No. 14241

- Gaus, G. and Courtland, S., 2007, Liberalism, Environmental Ethics, Stanford Encyclopaedia of Philosophy, <http://plato.stanford.edu/entries/liberalism/>
- Huneke, M., 2005, The Face of the Un-Consumer: An Empirical Examination of the Practice of Voluntary Simplicity in the United States, *Psychology & Marketing* 22(7): 527–550
- IPCC 2007, IPCC Fourth Assessment Report, WG I (<http://www.ipcc.ch/ipccreports/ar4-wg1.htm>), Summary for Policy Makers (<http://www.ipcc.ch/pdf/assessment-report/ar4/wg1/ar4-wg1-spm.pdf>)
- Jamieson, D., 1992, Ethics, Public Policy, and Global Warming, *Science, Technology & Human Values* 17(2): 139–153
- Jamieson, D., 2006, An American Paradox, *Climatic Change* 77: 97–102
- Jamieson, D., 2007, When Utilitarians Should Be Virtue Theorists, *Utilitas* 19(2): 160–183
- Jochem, E. (ed), 2004, Steps towards a Sustainable Development – A White-Book for R&D of Energy-efficient Technologies, Novatlantis
- Jonas, H., 1979, *Das Prinzip Verantwortung*, Suhrkamp, Frankfurt aM
- Kant, I., 1785, translated by James W. Ellington (1993). *Grounding for the Metaphysics of Morals*, 3rd ed., Hackett p 36)
- Kaufmann-Hayoz, R. and Gutscher, H. (eds), 2001, *Changing Things – Moving People*, Birkhäuser
- Krebs, A., 2005, *Ökologische Ethik I: Grundlagen und Grundbegriffe*. In: Nida-Rümelin, J. (ed), *Angewandte Ethik*, 2<sup>nd</sup> edition, Alfred Kröner Verlag Stuttgart
- Linz, M., 2004, Weder Mangel noch Übermass, *Wuppertal Papers* Nr. 145, Wuppertal Institut für Klima, Umwelt, Energie, [http://www.wupperinst.org/uploads/tx\\_wibeitrag/WP145.pdf](http://www.wupperinst.org/uploads/tx_wibeitrag/WP145.pdf)
- McDonald, S., Oates, C., William Young, C. and Hwang, K., 2006, Toward Sustainable Consumption: Researching Voluntary Simplifiers, *Psychology & Marketing* 23(6): 515–534
- Minsch, J., Eberle, A., Meier, B. and Schneidewind, U., 1996, *Mut zum ökologischen Umbau*. Birkhäuser Verlag.
- Muller, A., 2008, *Sustainable Agriculture and the Production of Biomass for Energy Use*, *Climatic Change*, forthcoming
- Nussbaum, M., 1990, Aristotelian Social Democracy, in: R.B. Douglas, G. Mara and H. Richardson (eds), *Liberalism and the Good*, New York, Routledge
- OcCC, 2008, *Das Klima ändert – was nun? Der neue UN-Klimabericht (IPCC 2007) und die wichtigsten Ergebnisse aus Sicht der Schweiz*. OcCC – Organe consultative sur les changements climatiques, Bern. ISBN: 978-3-907630-33-4
- Pogge, T., 2005, Real World Justice, *The Journal of Ethics* 9: 29–53
- Princen, T., 2005, *The Logic of Sufficiency*, MIT Press
- Princen, T., 2003, Principles for Sustainability: From Cooperation and Efficiency to Sufficiency, *Global Environmental Politics* 3(1): 33–50
- Roth, A., 2007, Repugnance as a Constraint on Markets, *Journal of Economic Perspectives* 21(3): 37–58
- Sagoff, M., *The Economy of the Earth*, Cambridge University Press
- Schläpfer, F. (2008) Contingent valuation: a new perspective. *Ecological Economics* 64, 729–740.
- Shaw, D. and Newholm, T., 2002, Voluntary Simplicity and the Ethics of Consumption, *Psychology & Marketing* 9(2): 167 – 185
- Sterner, T., 2003, *Policy Instruments for Environmental and Natural Resource Management*, Resources for the Future RFF Press, Washington DC
- UVEK 2007, Bundesrat beschliesst neue Energiepolitik, Medienmitteilung des Bundesamtes für Umwelt, Verkehr, Energie und Kommunikation UVEK, 21.2.2007, <http://www.uvek.admin.ch/dokumentation/00474/00492/index.html?lang=de&msg-id=10925>
- Vallentyne, P., 2006, Libertarianism, Stanford Encyclopaedia of Philosophy, <http://plato.stanford.edu/entries/libertarianism/>
- Zavestoski, S., 2002, The Social – Psychological Bases of Anticonsumption Attitudes, *Psychology & Marketing* 19(2): 149 – 165

## Acknowledgements

Many thanks to Markus Huppenbauer for inspiring discussions, to an anonymous referee, to the participants of the 4<sup>th</sup> University Research Priority Programme in Ethics (URPPE) Workshop at the University of Zurich, 24.2.2009, in particular to Johannes Fischer and Barbara Bleisch, and to the participants of session 26 at the Copenhagen Climate Congress 10.-12.3.2009, in particular to Marius Christen. Financial support from the URPPE of the University of Zürich, Switzerland, and the “Stiftung Mercator Schweiz” is gratefully acknowledged.

---

1 Increased technical efficiency also refers to increased output for a given input or increased output with increased – but proportionally less increased – input. Those two notions do however not lead to an absolute reduction in inputs, but only relative to output.

2 Clean energy is an example of a “consistency strategy”. Consistency is often mentioned in combination with efficiency and sufficiency. It refers to the design of industrial processes in such a way that they do not interfere with ecosystem processes. Important aspects are closed cycle processes where no waste occurs, as waste from one step is a resource for another.

3 An example is the abolition of subsidies for Propane in Mexico, with the effect that local brick makers switched to cheaper but dirtier fuel (waste wood, used tyres, saw dust, etc.), with corresponding negative effects on air quality (Stern 2003, p325).

4 Some claim that there is the possibility of externality free truly clean energy (e.g. new generations of cheap solar power). In case such were available for all types of energy services, my arguments for sufficiency would become obsolete, as such a clean energy strategy could in principle achieve the same. Given the uncertainty that such clean energy types will be developed at all and if so, fast enough, I consider this possibility highly hypothetical, though.

5 I emphasize that the notion of sufficiency I discuss here is not related to the common use of the term “sufficiency” in ethics, which relates to the discussion of distributive principles to lower inequality (see e.g. Casal 2007).

6 See also related literature from the Wuppertal Institute, mainly in German, though. See [http://www.wupperinst.org/de/projekte/themen\\_online/ko\\_suffizienz/index.html](http://www.wupperinst.org/de/projekte/themen_online/ko_suffizienz/index.html)

7 Translated and reformulated from Linz (2004), p13: „Suffizienz wird in diesem Text verstanden als Teil eines schon unserer Generation gestellten politischen und persönlichen Auftrages, die Übernutzung der Natur zu beenden und für eine gerechtere Verteilung der Lebenschancen einzutreten.”

8 Clearly, an encompassing discussion of sufficiency has to cover the whole society. For a starting point, I however restrict the discussion to this section of society, as it helps to simplify and focus arguments.

9 A definition of sufficiency is difficult, as it is a descriptive and normative (ethically “thick”) concept. An “explication” helps to clarify such a concept via detailed description and provision of key examples (see e.g. Fischer et al. 2007; a prominent example that cannot be defined but needs explication is “human dignity”).

10 Generally accepted exceptions to the non-morality of individual consumption are the consumption of child porn or use of child labour, for example. More contested, but still morally (not only legally) forbidden in wide parts of our societies is the consumption of hard drugs and cannabis. See also Roth 2007.

11 There are authors that argue against aggregation, as such supports inactivity: as the contribution of each individual to climate change is negligible, for example, it can always be argued that changes in one’s own life are without effect. Jamieson (2007) suggests a virtue ethics based approach to counter this effect by uncoupling one’s own behaviour from that of others.

12 For a detailed discussion on how duties emerge in complex situations of global inequality (such as due to climate change and its adverse effects), see e.g. Pogge (2005) discussing our duties towards the poor.

13 Nevertheless, the potential of economic efficiency to increase injustice is sometimes criticised. This is for example reflected in the discussion on the regressivity of price-based policy instruments for internalisation of externalities such as gasoline taxes (Fullerton 2008). In addition, it is acknowledged that increasing efficiency does not, without further measures, necessarily increase equality or justice. The latter issues are often left aside in economic analysis.