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Arguments For and Against Economic Growth

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Abstract

For the last five decades, the pursuit of economic growth has been a dominant ideology around the world. Since the 1960s, the voice of questioning endless growth began to emerge and recently the debates on growth have gained new attention after two decades of almost neglect. The scope of the arguments against growth has expanded from their initial physical focus on resource limits to a broader range of issues. This article critically scrutinizes the arguments for and against growth in terms of its relations to the economic system, society, environment and ecology, as well as to morality in a more general sense. From the perspective of the economic system, it has been argued that capitalism has an inherent growth compulsion and expanding consumer demand makes up the dynamics of economic growth, while opponents argue that the economy is inclined to stabilize in the end. From a social perspective, critics of growth employ empirical evidence to rebut the conventional belief that economic growth generally brings social benefits. From an environmental and ecological perspective, the propositions of ecological economists and environmental economists make up the major debates on growth in this area. Arguments from a moral perspective provide ethical justification and moral motivation to the previous arguments against growth, which make them meaningful and justifiable. Humans have obligations to future generations as well as non-human species, and affluent countries have obligations to share the limited ecological space of the planet with less developed countries. These obligations result from the concerns of equity and justice. Following this presentation of the debates, a discussion and evaluation of the plausibility of the arguments lead to the conclusions that unlimited growth in already affluent countries is not essential for the inhabitants' well-being, and that unlimited global economic growth is unlikely to be possible in a long-term perspective.

Keywords

economic growth, social benefits, ecological sustainability, human obligations, equity, limits to growth

1 Introduction

The ideology of economic growth has a long history which can be traced back at least to the mid-18th century when Adam Smith published his *Wealth of Nations*. However, it is not until the last five decades that the pursuit of growth has been a dominant ideology across the world and most countries have realized rapid economic growth. The most policy-relevant and publicly resonant definition of economic growth is an increase in the monetary value of goods and services of a country over a given period, indicated by GDP (Gross Domestic Product). Measured in this way, the global economy is almost five times the size it was half a century ago (Jackson, 2009). In the 1960s and 1970s, a critical discussion on growth began to emerge and then turned fierce, especially since the publication of the report of the club of Rome *The Limits to Growth* (Meadows, et al. 1972). However, since the 1980s, the growth critique was gradually replaced by the view of ‘decoupling’ of economic growth from environmental deterioration. Such a ‘decoupling’ view was emphasized by the World Commission on Environment and Development as a key strategy of sustainable development in their report *Our Common Future* (1987). In recent years, the possibility of such decoupling has been increasingly questioned by critics and they instead propose zero-growth or even de-growth. So far, the defenders of growth still stand in the dominant position. However, the scope of the opponents’ arguments has expanded from its initial focus on resource limits and environmental degradation to a broader range of issues.

In this paper, arguments for and against growth will be critically scrutinized. Four types of arguments which have emerged and been developed alongside with the growth of the economy will be distinguished. The analysis mainly considers western industrialized countries with a capitalist system. The purpose of this article is to argue, by discussing and evaluating the plausibility of the four types of arguments, whether continual economic growth is necessary for inhabitants’ well-being and possible in a long-term perspective.

The outline of this paper will be organized as follows: sections 2, 3, 4 will discuss the debates on growth from economic system, social, and environmental perspectives respectively. Each section will present the arguments on growth, explore the grounds for their propositions in depth and evaluate them by analyzing the limitations or implications of these arguments. Thereupon, some moral arguments will be presented in section 5. These arguments provide ethical justification and moral motivation to the previous arguments against growth. Section 6 will make a short discussion inspired from the preceding debates and then conclude.

2 Arguments from an economic perspective

Economic growth has for a long time been one of the concerns of the academic subject of economics. Looking at the period of classical economics from the middle of the 18th century to the late 19th century in retrospect, some prominent economists of this period like Adam Smith, David Ricardo and John Stuart Mill began to draw attention to the issue of economic growth. They reached consensus in the belief that economic growth as a process of accumulating wealth is desirable, although they differed in their ideas of how to achieve increase (Zweig, 1979). Their arguments for economic growth had a deep root in the social context at that time. The publication of Smith’s theory coincided with the dawn of the industrial revolution that allowed more wealth to be created on a larger scale than ever before.

Karl Marx was probably the first person to state that capitalists were subject to an inescapable growth imperative. He used the simple formula $M-C-M'$ to illustrate how the capitalist economy tends to entail limitless accumulation. In a capitalist economy, by circulation, commodities-C can render possible the conversion of some amount of ‘exchange value’ or money-M into a greater amount of M' . Then M' becomes capital in turn and is the new point of departure to render more money (Marx, 1858/1993). At an individual level, each capitalist accumulates his wealth in this manner. Moreover, the profit obtained by each capitalist has to increase for his own survival in a free capitalist market. A company that considers its present level of profit as sufficient and does not attempt to increase it will soon lose market shares,

because its competitors are increasing their productivity and are able to lower their prices. The competition among capitalists thus drives each individual capitalist to increase his profit to avoid losing out in the capitalist market. At an aggregate level, the profit maximization of each capitalist tends to result in growth in the overall economy. Conversely, zero-growth at an aggregate level would imply that some capitalists lose profits if others make more, and therefore the former will face the threat of bankruptcy. For capitalists who want to survive in the competition, apart from increasing efficiency which can minimize cost, the process of innovation also plays a vital role, as there is a continual consumer demand for new technologies and products. For human beings, material goods play a role that goes way beyond their material functionality such as food, shelter, etc. They are also connected to status, identity, and social affiliation. For example, many of the latest consumer appliances and fashions are accessible at first only to the rich so that they have the function of establishing people's social position. If material goods are only about ordinary everyday survival, it can hardly explain why people in affluent countries are eager for more material goods. To a high extent, it is the social dynamic that stimulates our appetite for more goods (Jackson, 2009). Moreover, many people have the aspiration of higher material standards of living. For those who are less affluent, reaching the consumption level of the rich group is a trigger for them to become rich.

The expanding consumer demand, together with the previously mentioned growth imperative of capitalism, makes up the dynamics of long-run economic growth. To some extent, it is growth itself that creates continual growth. The structural reliance of the system itself on continued growth makes zero-growth (or even worse: negative growth) a highly undesirable dystopia.

Although there is a robust inherent imperative for capitalism to grow, capitalism has not been subject to continual growth, but has experienced a series of rise and fall with certain time spans. Based on the labor theory of value, Marx (1867/1990) tried to reveal the counteracting mechanisms that may for certain periods of time offset some of the effects of the growth imperative. He believed that the working class is not paid enough compared to the labor provided. This would lead to a long-term imbalance between production and consumption in the capitalist system. Over-production together with weak purchasing power would ultimately result in an economic crisis. The research of the Russian economist Kondratieff predicted that there existed cycles within capitalism over forty to fifty-year time span with serious periodic depressions. According to Kondratieff, three long waves since around 1790 had been identified with approximate starting dates 1790, 1840 and 1890 (Kondratieff, 1925). Distinctive from Marx, Kondratieff believed that capitalism was capable of reviving itself after downward periods. The economic crisis may set the capitalist economy back to a lower level than it used to be; therefore, the growth rate slows down in a long perspective.

Besides the arguments which hold the point of view that capitalism is subject to periodic depression, some economists deny that expansion is necessary for a capitalist economy to keep stability. Accompanying this argument are the concepts of "steady-state economy", "zero-growth" and even "de-growth". Advocates of a steady-state economy, e.g. Herman E. Daly, argue that the Earth as a whole is approximately in a steady state and that the economy is a subsystem of the Earth. The closer the economy approaches the scale of the whole Earth, the more it will have to conform to the physical behavior mode of the Earth which is a steady state (Daly, 2008). In a steady-state economy, the capital stock is constant, due to a low rate of throughput. Compared to most contemporary economies which are structured for growth, steady-state economy is, according to Daly, intentionally designed for stability, still within the capitalist system. The market is considered the most efficient way to allocate resources, but some vital decisions like the volume of the economy should be kept outside the market (Daly, 1993). The capitalist economy has the mechanisms urging it to grow continually, but these mechanisms may be offset by a strong state intervention in terms of raising resource prices at the depletion end. In addition, moral growth (more altruistic attitudes) will be required.

However, although steady-state economy arguments take the ecological concerns into account and can bring environmental, lifestyle and moral benefits for human beings (see later sections of the paper), this sort of argument is subject to several limitations: (1) steady-state economy is sharply at odds with current tendencies, therefore, to reverse the situation, robust and powerful intervention from public authority is needed. However, as can be seen, policies in virtually every nation have been officially structured for economic growth for decades. It is very difficult for governments to change their role in favor of non-growth; (2) obviously, the authorities' reluctance to radical shift stems partially from their reliance on the benefits brought by growth. Authorities are the representatives of privileged people who enjoy the majority of the benefits of growth. They will be desperate to get back on the track of continual growth in the context of looming economic recession; (3) the moral awakening among capitalists called upon by Daly in order to design a stable economy in a capitalist system would be rather difficult to realize. Besides, the difficulty of moral shift to stability holds truth to consumers as well. Highly durable goods cannot

satisfy consumers' desire for new products. In a steady-state economy, throughput is maintained at the rate of depreciation. The low throughput means that people have to inhibit their aspiration for more, better or newer goods. If a minority of capitalists breaks the rules to satisfy this demand and try to make a fortune, the competition in the capitalist system would force other capitalists to ignore the moral constraints associated with steady-state economy.

3 Arguments from an economic perspective

Other arguments for and against economic growth emerged in the 1960s focusing on the adjunctive functions of economic growth. Conventionally, proponents of growth believe that economic growth is associated with some social goals which usually include alleviating poverty, reducing unemployment, enhancing social equity, keeping social stability, etc. This assumption has been particularly adopted by developing countries who have been seeking to maximize economic growth on the basis of the belief that it leads to advances in the quality of life. Many scholars in other parts of the world have debated the importance of economic growth for human welfare too, and concluded quite similarly that it ought to continue as the supreme goal of their national development (Shin, 1978).

A general metaphor underlying this argument for economic growth is "a rising tide lifts all boats" or the "trickle-down effect", which means that raising the GDP of the entire economy will supposedly benefit all the participants in this economy. This metaphor is applied both to different social classes within a country and to different countries. According to this proposition, it is assumed that the improvement of the general economy should be pursued first and foremost in order to expand the beneficiaries from the rich to the poor. Even the World Bank holds the view that the economy of rich countries should continue to grow as rapidly as possible to provide markets for the poor and to accumulate capital to invest in poor countries (Daly, 2008).

By the 1970s, this traditional view began to receive critiques from social scientists. Social experiences have brought doubt into many people's minds about the advantages of economic growth. This doubt was supported in particular by Easterlin's (1973, 1974) studies which could not confirm the assumption that raising the incomes of all made people feel happier. Subsequent empirical findings from other researchers have confirmed Easterlin's conclusion that life satisfaction does not go along with significant economic growth in most advanced economies over several decades (Duncan, 1975; Shin, 1978; Easterlin, 1995, 2005).

There are two relevant groups of theories about the relationship between economic growth and happiness: absolute utility theories and relative preference theories. The absolute utility theories argue that when a country is poor, people are in great need of commodities; therefore, greater income can fill more needs so that increasing the income of all will raise the happiness of all. According to the relative preference theories, an individual's utility of income is relative to other people (reference groups) or relative to the individual's own previous income stream (adaptive expectations) (Hagerty & Veenhoven, 2003). It is relative status, rather than absolute amount of income that matters to happiness.

Based on a combination of the two theories, Figure 1 illustrates an assumed relationship between happiness and growth. The absolute utility theories can only be valid up to a certain point. When a country is affluent enough, the gains from income growth will decrease gradually, and the mechanisms described in the relative preference theories begin to play the main role. At this stage, raising the incomes of all will not change an individual's utility relative to others, and individuals' expectations will adjust over time to the increased income, yielding no additional utility.

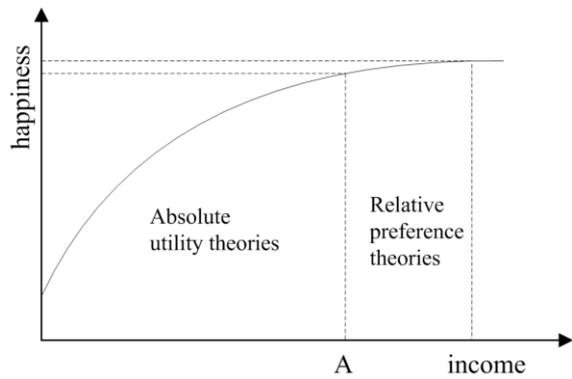
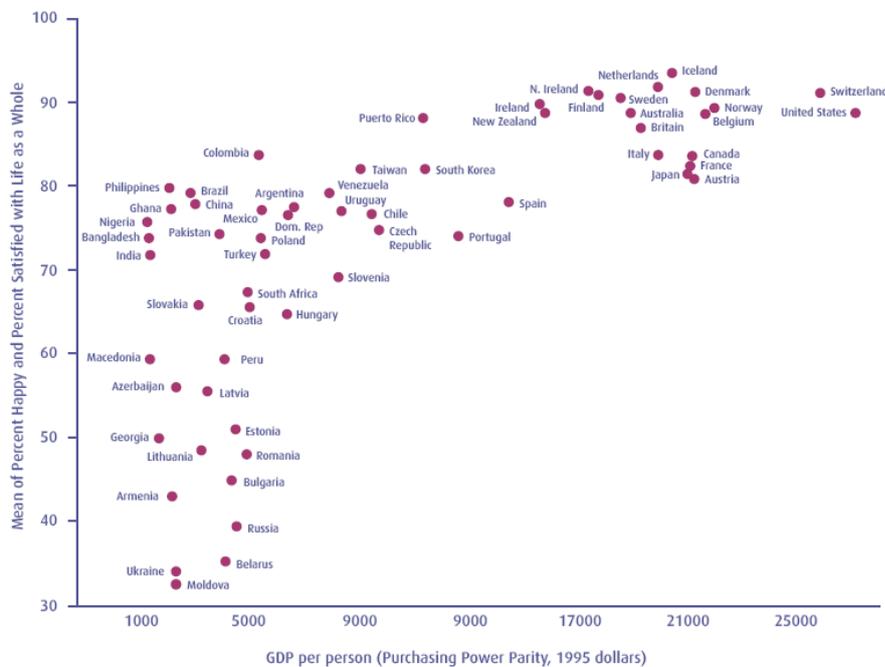


Figure 1: Happiness, income and related theories

Figure 2, which is based on investigations of perceived happiness and life satisfaction among inhabitants of a large number of countries worldwide, supports this assumption. For poorer countries, a small increase in GDP leads to a large rise in happiness, while countries like Iceland, Netherlands, Denmark, Sweden, etc. have higher happiness levels compared with USA, but lower income levels. Similar arguments referring to other aspects of our social life have emerged subsequently. For instance, life expectancy, health and educational participation display a similar pattern as happiness in their relationship with economic growth. Some low-income countries are not worse than those with high-income as regards these three entitlements (Jackson, 2009).

Figure 2: Happiness and average annual income (Jackson, 2009)



Another piece of evidence illustrating the limitation of the “trickle-down effect” argument is the fact that the gap between the rich and the poor has expanded, rather than shrunken as predicted by the “rising tide lifts all boats”. The notions of absolute poverty and relative poverty are important in this context. Absolute

poverty means that the countries or people live under a certain amount of money per day, while relative poverty refers to the gap between poor and rich countries as well as the gap between population groups within one country.

After many years of rapid growth in the world, economic growth has helped some people out of extreme poverty, e.g., according to the updated World Bank estimate (Chen & Ravallion, 2008), the poverty rate (living below \$1.25 a day) has fallen by about 25% between 1981 and 2005. Nevertheless, the gap between the rich and the poor is broadened, implying that relative poverty is more severe than before. If we call this gap inequality, it suggests that the inequality between the poor and the rich has become larger. According to a recent study of income distribution and poverty by the OECD (2008), the gap between rich and poor has grown in more than three-quarters of rich countries since the mid-1980s. It is noteworthy that the study also finds that the economic growth of recent decades has benefited the rich more than the poor.

Apart from the empirical evidences above as rebuttals to the trickle-down argument, this argument itself is theoretically fallible. A vacancy chain in the housing sector can be employed to investigate this theory. The chain of moves in a housing market is supposed to be that: moves to new supply of dwellings result in vacancies which in turn are filled by further transfers. It is actually a succession of supply and transfer (Bysveen & Knutsen, 1987). If the trickle-down effect works, with the purpose of boosting the basic housing standard, the new construction of large expensive dwellings for high-status groups will finally make supply of dwellings towards the less well-off. And in order to give benefits to the poor by constructing luxury dwellings, a long chain length is necessary. However, the newly constructed high-standard dwellings may not necessarily trigger a longer chain (Clark, 1984; Bysveen & Knutsen, 1987). For instance, an apartment becomes vacant when someone who lived there moves to a bigger one may be merged with the neighbor apartment, which terminates the move chain and prevents someone else who previously lived in a smaller dwelling to move in. Furthermore, there is little support that the longer chains reach the households which are most in need of housing improvement (Clark, 1984). Moreover, even if a trickle-down effect actually works, it is not an efficient force in fulfilling the goal of benefiting the low-income households. To build detached or owner-occupied houses with high standards is more material-, energy- and land-consumptive than funneling new construction into the modest and affordable dwellings targeting low-status groups, like multiple-unit buildings. And then we have not even mentioned the long way and time it takes for the affordable dwelling to reach the needy households.

To sum up, when examined critically in reality, the arguments in favor of growth for its social benefits are not quite defensible. This does not imply that economic growth has no social benefits. It only assumes that these social functions of economic growth should not be exaggerated. The specific implications are: (1) we cannot take it for granted that there is a fixed correspondence between economic growth and the achievements of social goals. Instead of relying on economic growth, attention can be directed towards the potential of delivering the social objectives by changing structure, governance and so on. (2) For poor countries, economic growth will make a quite different scene for social progress. However, for affluent countries, pursuing economic growth has a relatively less significance than for impoverished ones. (3) The failure of economic growth in eliminating inequality implies that instead of “trickle-down”, economic growth may be causing a “flood-up” of resources from the poor to the rich (Simms, 2003). As the inequality increases, the social status, power and influence on social matters are arguably flooding up from the poor to the rich.

4 Arguments from an environmental and ecological perspective

The modern arguments for and against growth from physical concerns originated in the 1960s in

response to the widespread environmental pollution and ecological deterioration attributable to economic growth. The debates became fierce along with the two waves of public and political interest in environment (the first wave started with the publication of *The Limits to Growth* (Meadows et al., 1972); the second wave began with the Brundtland Report (World Commission on Environment and Development, 1987)). The critiques of limitless economic growth from the environmentalists and the so-called ecological economists suggest that growth is responsible for degradation of the environment.

Firstly, economic growth in current trend depletes large amounts of natural resources, many of which are non-renewable like fossil fuels. Although humans are developing new technologies to utilize renewable resources, non-renewable resource consumption still constitutes a large part of the total consumption around the world. Additionally, even if resource productivity has been improved quite a lot by resource-saving technology, several non-renewable resources still have an upper limit and will be out of store someday. This position was also represented in *The Limits to Growth*, saying that (by then) the existing trends indicated that absolute limits to growth would be reached within 100 years. Secondly, emissions and wastes from economic activities using fossil fuels have surpassed the assimilative capacity of nature in some parts of the world. Pollution of water, atmosphere and soil makes our surroundings less agreeable and even puts the health and survival of human beings at risk. Lastly, from an ecological standpoint, excessive interference of economic activities into the nature may lead to the imbalance, instability and even irreversible breakdown of ecosystems, undermining their function as life-support systems.

What underlies the environmentalists and ecological economists' arguments is the notion of holism in which the entire economic system is perceived and analyzed as a subsystem of the global ecosystem. Their basic belief is that the human economy takes up more or less 'space' in relation to the closed system of the earth whose natural capacity is finite. The larger the scale of the economy becomes, the greater the risk of destroying the conditions for human life on earth in the long term. Human economic growth should not exceed the biocapacity which represents the theoretical maximum supply of natural resources and ecological services that can be provided by a region (Røpke, 2004; 2005).

The arguments above have been objected or ignored by some defenders of growth (the so-called environmental economists) and most neoclassical economists who contend that environmental problems are not constraints to economic growth, but can be dealt with by continual growth. The holders of this position often use the Environmental Kuznets Curve (EKC) hypothesis to support their proposition (Barry & Paterson, 2003). The EKC hypothesizes a relation between environmental damage and economic growth. Kuznets' inverted-U shaped curve is interpreted as follows: although economic growth in poor countries usually entails environmental degradation, when a nation makes the transition from poverty to wealth, more money can be spent on the development of environmentally friendly technologies, thus improving environmental quality. The implication of this proposition is that economic growth is good for the environment in the long run.

The environmental economists propose that the solution of environmental problems can result from the incorporation of environmental pollution into the economic accounting under the framework of which environment is treated as goods with prices determined by people's willingness to pay (James, et al., 1978). Based on this premise, the most traditional approach among economists to solve environmental problems is to levy a tax which is equal to the value of the marginal social damage associated with the externality. Charging emission fees and assigning ownership rights to environmental resources are also traditional methods to tackle environmental problems (Cropper & Oates, 1992). Implicit in these arguments is the point that even though growth leads to environmental problems, these are externalities generated by market failures that need to be internalized. If this happens, a sounder growth will be the result.

Environmental economists also advocate the idea of ecological modernization, which was developed in the early 1980s (Mol & Sonnenfeld, 2000). In accordance with the ecological modernization discourse, dematerialization emerged as an important political goal in the 1990s. Eco-efficiency and substitution are

viewed as two main ways in the process of dematerialization to decouple economic growth from resource consumption and negative environmental impacts. Factor 4 and Factor 10 concepts are widely used specifications of the goals of dematerialization (Schmidt-Bleek, 1993; Weizsäcker, 1998). In Factor Four (Weizsäcker, 1998), factor 4 means a fourfold increase in resource productivity, which implies that the same amount of commodity can be produced with only a quarter of the previous resource consumption, and therefore with only a quarter of the previous environmental load. At an aggregate level, Factor 4 would imply that we can 'double wealth while halving resource use'.

The concepts and economic models recommended by the environmental economists are subject to some important limitations. The inverted-U shaped curve of EKC hypothesis has mainly been found for certain pollutants at a local scale. In several countries there is no indication that an Environmental Kuznets Curve can be found for the total resource throughput (Spangenberg, 2001), and some specific pollutants, like CO₂ emissions, do not tend to be reduced with higher GDP (Galeotti, et al., 2006). Even N-shaped and linear-shaped relationships have been found in different countries or regions for some pollutants. Besides, the observable inverted-U curves may be partially attributable to changes in international trade. As countries develop, they can improve domestic environmental quality by importing more pollution intensive goods at the expense of environmental quality in other nations (Suri & Chapman, 1998; Agras & Chapman, 1999).

The arguments of "willingness to pay" for environmental pollution fails to deal with a broad range of environmental problems. An economic approach can only deal with "tangible" environmental consequences which can be felt physically or mentally by people. Some invisible or non-sensible consequences tend to be ignored and excluded in the economic system, but these underlying consequences also have important effects on humans. It is difficult to assign an accurate monetary value on those "intangible" environmental problems due to the impossibility of evaluating their real effects (Goodland & Ledec, 1993). Environmental effects can be border-crossing and long-term, and thus extremely difficult to predict with some accuracy. Furthermore, as environmental effects may exceed regions and generations, whose willingness is represented in the shadow price? If people influenced are beyond the region where pollution is caused, or belong to future generations, then the taxes or fees charged through "willingness to pay" are unfair to some people. Apart from this, some environmental consequences are irreversible no matter how much people would like to pay for that (Ackerman & Heinzerling, 2004).

Similarly, some opponents and commentators have given critiques to the Factor 4 thinking. Næss and Høyer (2009a) have concretized this in the following way. Take an annual growth rate of 3.5% (recommended by the Brundtland Commission for the industrial countries) as an example. The total production will then be doubled within 20 years. This means, in order to achieve a halving of the resource consumption and the environmental load, a factor 4 increase in resource productivity must be obtained within 20 years (Næss & Høyer, 2009a). If we go on the calculation, the total production will be four times higher 40 years from now, 8 times higher after 60 years, and 31 times higher within 100 years, 973 times higher within 200 years. Resource consumption will be 8 times higher within 100 years and 243 times higher within 200 years, even if the technological innovation could be strong enough to facilitate the achievement of one fourth reduction of resource use per unit produced.

This rough calculation indicates that increasing eco-efficiency by Factor 4 cannot compensate for a continual growth in the long term. Resource consumption will eventually reach the ecological limits so far as the exponential growth continues. In order to sustain the long-term growth in production and consumption, dematerialization at much higher rate than Factor 4 is needed to take place to postpone the time to run into resource scarcity. E.g. in order to avoid that resource consumption and environmental load increase, annual economic growth of 3.5% will require a resource productivity growth of more than factor 950 within the next 200 years – and this factor improvement must be reached as an average for all sectors of society and not only for a few selected 'spearheads'. It seems safe to assume that it will be too optimistic to be confident that technology can advance that far.

Increase in resource efficiency does not necessarily lead to a reduction of the total environmental load. In most cases, the rate of consumption of a resource actually tends to rise as resource efficiency increases. This means that the absolute resource consumption and environmental load can increase even though the relative consumption per unit produced decreases. Moreover, even if ample and pollution-free energy is made easily accessible like solar energy through technological innovation, and this energy is distributed to the relevant kinds of production and consumption, endless economic growth in such a “solar energy paradise” would still be environmentally problematic. What will the solar energy be used for? If it is used to produce products which are material-consumptive and environmentally negative, the environmental load would not be neutral (Næss & Høyer, 2009b). The conclusion is that simply depending on increasing eco-efficiency by technological advancement is insufficient to achieve effective decoupling - it might even worsen the existing situation.

As for substitution, it is often assumed that service industries are less energy-intensive. However, Trainer (2001) contends that service industries are in general rather energy-intensive and rely on large-scale energy use. This is the case, for instance, with travel, transport, tourism, and advertising. For example, a painting exhibition depends on a great range of material goods, like building construction, electricity, water used to maintain the daily operation of the exhibition. The visitors often drive a long way to visit the place, which consumes a great amount of oil. Instead of consuming raw materials by purchasing cars, their seemingly less materialistic lifestyle can be even more energy demanding.

Table 1 sums up briefly the arguments within the two fields of theoretical economics, environmental economics and ecological economics. The root of the limitations of the environmental economists’ proposition lies in their presupposition that environmental problems are regarded as consequences generated by market failures and therefore can be internalized. However, the economic activities interacting with the environment are by no means a discrete and isolated system (Venkatachalam, 2007). Based on the critique of this assumption, the ecological economists propose that a non-growth or de-growth economy is necessary to obtain environmental sustainability.

Table 1: The arguments on growth from environmental economists and ecological economists

	Environmental Economists	Ecological Economists
Basic Assumption	Economy is a closed system in which environmental problems can be internalized	Economy is an open subsystem of the Earth ecosphere
Historical impacts of growth on environment	Past growth has led to environmental deterioration	Past growth has led to environmental deterioration
Attitudes on future growth towards improvement of environment	<i>Positive:</i> growth does not contradict environment sustainability and future growth can provide better solutions	<i>Negative:</i> growth contradicts environmental protection and biocapacity cannot support endless growth
Main	Decoupling growth from	Zero-growth or de-

strategy	environmental impacts	growth
Assumed result	Green growth and sound environment	Steady-state economy and sound environment

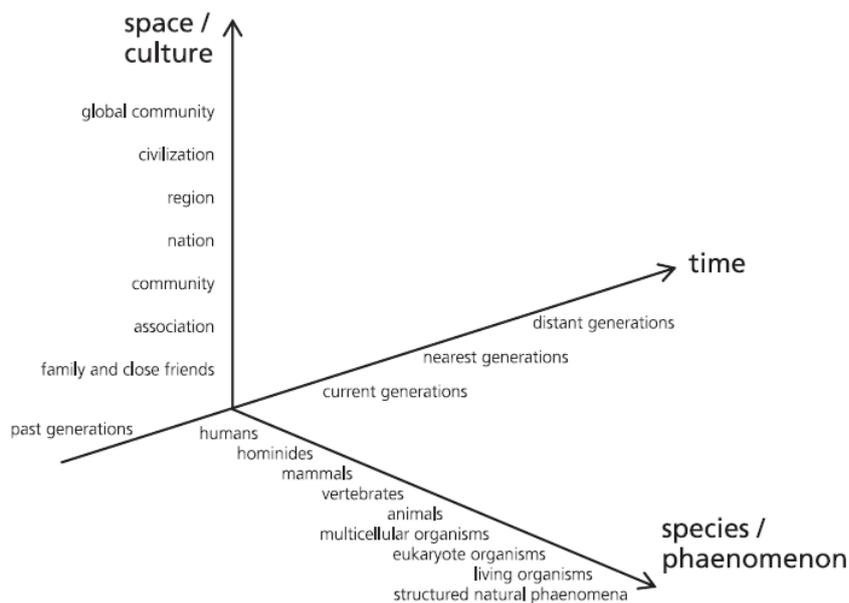
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- Last element of the bulleted list.

5 Arguments from a moral perspective

The arguments from an ethical point of view are not basically different from the previous arguments against endless growth. They rather make the moral premises clearer in order to make these arguments against growth more reasonable and meaningful. I will employ Arler's (2006) figure to interpret the moral obligations of humans from three dimensions, namely time, space and species.

Figure 3: Three dimensions where obligations may become relevant (Arler, 2006)



Intergenerational equity is the main moral concern when judging the plausibility of the arguments against growth. From an environmental perspective, intergenerational equity can be interpreted in the way that all generations have obligations to leave at least a comparable earth condition as they inherited themselves to future generations in order to avoid ruining future peoples' opportunities (Arler, 2006; Weiss, 1990).

This obligation of preserving our planet's quality in order not to leave nature in a condition that reduces the opportunities of future generations—taking into consideration possible future technological and social improvements—will constrain the present generation's actions in exploiting and using resources. Some environmental problems like climate change, ozone depletion and biodiversity loss seem to undermine the opportunities for our descendants to live a decent life. Continuing current levels of growth would result in higher risk of undermining the capacity of succeeding generations to create well-being.

The space or culture dimension of human moral obligation extends the traditional scope of ethical concerns by including moral responsibility towards population groups beyond one's specific community as well as one's nation. In terms of environmental justice, some populations or regions may face greater risk from exposure to environmental hazards or lack of resources than others. It would be unfair if some people suffer significant environmental hazards which are caused by other population groups.

Furthermore, since the Rio conference in 1992, some environmental problems like climate change, loss of biodiversity, etc. have been designated as 'common concerns of humankind' that should be dealt with in accordance with basic principles of equity and social justice. This means that when dealing with these problems, countries are expected to take action in accordance with their common but differentiated responsibilities and respective capabilities (UN, 1992). Rich countries are thus assumed to take on more obligations to reduce their environmental impacts than poor countries are.

Another reason for affluent countries to assume more obligations to control their unlimited growth is out of the consideration of equity in sharing the world's ecological space. According to the Living Planet Report 2008, humanity's ecological footprint has exceeded the Earth's total biocapacity by 30% in 2005, amongst which carbon footprint uses over 60% of Earth's total biocapacity. Consumption in high-income nations with only 15% of global population accounted for 36% of humanity's 2005 total ecological footprint. This is 2.6 times the total of the low-income nations (WWF, 2008). This uneven use of the Earth's biocapacity raises ethical questions. Greater use of the limited biocapacity to meet the demand of the affluent nations means less biocapacity available to meet the demand of the impoverished nations. With a non-growing biocapacity, substantial cuts in resource consumption and waste generation in rich countries are required if more ecological space should be left for the poor to increase welfare.

The overshoot of ecological footprint to the total Earth's biocapacity not only brings conflicts within the human species across regions and cultures, but also means that less ecological space is left for other species. It thus raises concern in the third dimension of human moral obligation: the respect we owe to other organisms or species. Much ethical reflection considering environmental consequences of human activities use the general categories 'anthropocentrism' and 'biocentrism'. Anthropocentrism is often seen as a position, according to which only humans, their needs, wants and aspirations have value, and where the moral system applies directly to humans only. The rest of nature only has instrumental value. For example, it only has the value, if it satisfies human desires or needs.

However, following Norton (1993), we may separate anthropocentrism into two types: strong anthropocentrism and weak anthropocentrism. Strong anthropocentrism argues that non-human natural objects have value only to the extent that they satisfy any desire or need of humans. In this sense, it is legitimate to let non-human nature be wantonly conquered, dominated and exploited by humans with a strongly consumptive value system. This strong anthropocentrism is often blamed to be the root of current ecological crisis.

Weak anthropocentrism is characterized by Norton (1993) as a position, according to which it is only allowed to let non-human organisms satisfy human desires and needs, if these are expressed after

rational deliberation and are consistent with a rational worldview supported by scientific theories, a metaphysical framework, aesthetic values and moral ideals. Ruthless exploitation would not be a rational option, if this results in destroying species and other non-human objects that may be of no utility value for humans, but still interesting to follow or beautiful to watch.

In contrast to the anthropocentric perspective, biocentrism is explicitly based on the assumption that not only humans, but also other organisms or even species have inherent or intrinsic value. Each of these natural objects has a telos or end of its own; therefore, they have their own intrinsic values, which somehow entitle them to continue existing in their own way. It is not altogether clear where this will lead us. If, on the one hand, all kinds of life have equal value and therefore equal right to live and blossom, defined as 'biospherical egalitarianism' (Næss, 1973; 1993), any killing, exploitation, and suppression would violate the principle of being equal. Even the killing of bacteria to prevent humans from illness would be difficult to allow, as long as the illness is not serious. The intense interference made by economic activities would be difficult to accept. However, in any realistic praxis, this absolute egalitarianism cannot take place.

If, on the other hand, humans and other species do not have equal value, there must be a ranking of values. Then the question must be raised, how much more valuable human interests are compared to those of other species. Applying this to the question of economic growth, one could ask to what extent human economic activities should be allowed to displace or interfere with non-human nature.

To some extent, the interpretation of biocentrism as well as weak anthropocentrism indicates human responsibilities and obligations owed to various non-human species. Compared to the strong anthropocentrism, biocentrism and weak anthropocentrism act as 'vaccination against hubris' in relation to the ability to master and control nature and environment. The two philosophical perspectives converge in the notion of conservation of various natural features, e.g. richness and biodiversity of ecosystems, even though they diverge in underlying assumptions for this position. Many anthropocentrists argue against endless growth because humans benefit from the continuous presence of other species, even those that are not useful in any narrow interpretation of this term. Biocentric ethicists, on the other hand argue against endless growth, because humans have responsibilities not to overconsume non-human resources because the flourishing of other organisms and species are as important as that of human beings

4 Concluding remarks

The preceding discussion has examined from different perspectives a variety of arguments for and against unlimited economic growth. The implication of the diversity of the arguments is that economic growth is no longer a default undoubted goal pursued across the world, but rather a questioned issue in different ways. Table 2 lists the arguments for and against growth from four perspectives. The many, and in my view highly plausible arguments against the possibility as well as desirability of unlimited economic growth give reason to hold a negative attitude toward endless growth after the presentation of the debates. Two statements do seem to be justified by the previous discussion.

Table 2: Arguments for and against growth

	For	Against
Economic system	<ul style="list-style-type: none"> - Capitalism contains an unavoidable growth imperative and so far the best system - The social logic for consumption makes up the demand dynamic for growth 	<ul style="list-style-type: none"> - Economic growth collides with the inescapable need for a steady state in biophysical terms and thus undermines capital accumulation in a longer term

Society	<ul style="list-style-type: none"> - Growth brings social benefits - Trickle-down effect works in solving social problems 	<ul style="list-style-type: none"> - Social benefits do not increase with growth proportionally - Trickle-down effect is inefficient
Environment	<ul style="list-style-type: none"> - Environmental problems can be solved within the framework of the current economic system - Economic growth makes it possible to develop better solutions to solve environmental problems 	<ul style="list-style-type: none"> - Higher production and consumption increase the pressure against nature - Increased resource-efficiency within a growth paradigm may postpone the time to run into resource scarcity, but cannot altogether solve the contradiction between growth and ecological constraints
Moral justifications of the 'against' arguments	<ul style="list-style-type: none"> - The present generation has obligations not to ruin future people's opportunities to have equitable access to resources and benefits based on the principle of inter-generational equality - Given the limited natural resources of the planet, affluent nations have the obligations to cut their ecological space for the poor to increase their welfare - Humans have a duty to conserve and protect nonhuman nature both because humans benefit from the continuous presence of other species and the flourishing of other organisms and species are as important as that of human beings 	

First, endless economic growth in already affluent countries is not necessary for the inhabitants' well-being. This statement is justified by the fact that growth is by no means indispensable to achieve some human goals. It can only be beneficial to humankind to some extent and up to some point, beyond which growth seems to fail to help the human community flourish. Economic growth is not the end itself, but rather a means to the end and notably, far from a perfect one. Growth raises some negative side effects, such as environmental degradation and the risk of social unrest due to inequality. Currently, the situation seems to be that people who are growth defenders do not only expect economic growth to realize their goals, but also have the belief that further economic growth can weaken these side effects. Is it advisable to employ economic growth again to deal with the problems which are themselves raised by growth?

For those countries which are in desperate need of basic subsistence materials such as food, shelter and hygiene, economic growth still makes sense for their material improvement. The statement in the report of Our Common Future (1987) that 'reviving' and increasing economic growth is the way to meet essential needs of the world's poor thus has some merit. However, even poor countries should not seek growth at any price and the growth ought not to continue once it reaches a certain point.

Second, endless economic growth seems impossible due to the already existing and imminent constraints from every aspect of our world. The physical limits to growth have initially been stated in the 1972 report of 'Limits to Growth'. Notwithstanding strategies for dematerialization and the hypothesis of an Environmental Kuznets curve, the degrees of dematerialization necessary to compensate for growth in a century-perspective or longer imply that the resource base and assimilative capacity of nature simply cannot support endless economic growth.

Regarding the social aspect, rising affluence levels in already rich countries like the USA tend to make people reduce informal contact (Putnam, 2001). Moreover, growing inequality tend to increase social tensions (Simms, 2003). These together put the social cohesion at the risk of falling apart and probably lead to social unrest like strike or conflicts, which in turn disturbs the normal economic activities. It is worth being aware that zero-growth and de-growth are not prevented from social conflicts. No growth at the aggregate level means that any increase in consumption among the rich requires the decrease among the poor. This has the risk of increasing social inequality. In addition, lack of growth always accompanies with unemployment. Altogether, non-growth or de-growth may not cause less social tensions than growth. Therefore, in the non-growth or de-growth circumstances, active policies to redistribute resources is required on the basis of equity.

The ethical discussions inspire people to reflect on the contemporary economic behaviors and bring moral awakening to our duties to future humans, less privileged populations and poor countries, and non-human nature. A gradual conversion in people's morality will have huge potential to change people's ideology, value priorities and guide human behaviors. Moral limits could to some extent counteract the excessive emphasis on endless economic growth.

The conclusions drawn above do not imply that we should give up growth immediately, but rather that countries should be made cautious that their efforts in creating rapid GDP growth may be in vain,

especially for economically advanced countries. We should notice that so far, no governments have clearly supported zero-growth or de-growth and as a matter of fact, governments of all nations still seek to stimulate economic growth but with a more environmentally friendly growth pattern. After all, for governments to be completely against economic growth, broad and deep conversions of ideology, ethics, structure, etc. would be required. These are likely to take a long time, even several generations to complete. It should also be noted that fierce disputes still take place between opponents and proponents of economic growth. The lack of consensus of whether or not continual economic growth is possible makes it easier for governments to take a compromising method to deal with growth issue instead of abolishing it entirely.

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