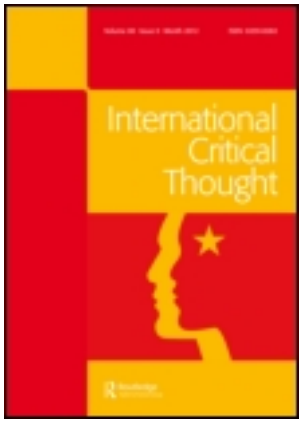

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Withdrawal from growth: The environmental challenge for twenty-first-century socialism

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Capitalism cannot exist without continuously expanding production of an 'immense collection of commodities' around the world. However, there is an irrefutable fact that is jeopardizing capitalism and its chimerical claims of sustained economic growth: the planet has biophysical limits. Twenty-first-century socialism, therefore, cannot rely on the dynamics of economic growth. It rather has to build a world economy that not only frees workers from exploitation, but releases nature from irrational exploitation as well. In fact, for socialist countries to withdraw from growth represents the paramount environmental challenge to be overcome. This means moving from ostentatious consumption towards a new principle of moderation. This is the essential foundation for an economy that operates within the limits of our biophysically finite world.

Keywords: sustained growth; consumption; socialism; principle

The material needs of humanity will be satisfied if the gross domestic product (GDP) grows steadily. In the last several decades this approach has been considered the *leitmotiv* of the market economy. In the post-war period it was common to speak of ad hoc policies for the developing countries – the Third World used to see its destiny in the First World. Today, in the age of decadent neoliberal globalization, all the powers of the establishment close ranks to create their own Holy Alliance on behalf and in defense of *sustained growth*. Goldman Sachs and the International Monetary Fund (IMF), Barack Obama and *The New York Times*, unions and the business fraternity, political parties and the courtesan academia – all of them proclaim a single slogan: Growth and more growth!

Sustained growth and the capitalist principle of ostentatious consumption

However, nothing could be further from the truth than this discourse from conservative economists and politicians. The market-capitalist economy does not grow steadily, and this growth does not have its reason for being in the welfare of the population.

Indeed, besides the living example of the current global capitalist crisis, the historical fact of two major depressions (the Long Depression of the late nineteenth century [1873–79] and the Great Depression of the 1930s), along with the recurrent cycles of the capitalist dynamic, provides evidence that sustained growth does not exist. Sustained growth only appears as a result of abstraction from the inherent cyclical movements of capitalism in the imaginary world of its apologists, not in the functioning of the real economy. Similarly, only in the world of the

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macroeconometric models and the economics textbooks of orthodox economists is growth – understood as the increase in goods and services produced – aimed at meeting the material needs and improving the welfare of the population. In real capitalism production is not carried on for this purpose per se. This is because global capitalism, according to the original meaning of the word, is not an economy in the sense of the stewardship of 'storable resources necessary *for life* and useful to the civilian community or home' (Aristóteles 1997, 15). In essence, it is what the ancient Greeks termed a commercial chrematistic. This, according to Aristotle, 'has as its set aim the making of money, because money is the element and term of exchange; and the wealth resulting from this chrematistic is unlimited' (Aristóteles 1997, 17). The capitalist chrematistic has as its *fundamental constitutive principle* the relentless pursuit of profit and its reinvestment for the accumulation of capital, through the market, prices and private property. Profits, even though they can also be obtained in the commercial or financial circuits, even today have not ceased to be generated through the production of commodities. Therefore, the need to constantly expand production in our chrematistic is due to the fact that a greater volume of commodities produced means greater profits generated for the investor and, thus, an increase in his or her accumulated capital. Since GDP is the accounting sum of all goods produced for final use, its growth is not more than the reflection on a macroeconomic level of average progress in the accumulation of all capital. In this sense we can say that growth is the *conditio sine qua non* of capitalist enrichment. There cannot be capitalism without growth. This explains, therefore, the prayers of the new Holy Alliance for sustained growth.

However, although the production of commodities is a necessary condition for the generation of profits, it is not a sufficient condition. Products and services must also be sold. Indeed, capitalism cannot exist without the perpetual expansion of production of an 'immense collection of commodities' (Marx 1976, 125) throughout the world. But the existence of capitalism also depends on the sale of that immense collection of commodities. This is because one part of the sale of these commodities – the part that represents what workers consume and through which they stay alive – serves the accumulation process by reproducing the labor force, which is the foundation of the process of commodity production. Capitalism also depends on the sale of the commodities produced for the reason that without this full sale, the invested money is not returned and the expected profits are not obtained; therefore the process of accumulation does not take place.

This is no different today in the era of capitalist globalization. Everything that is produced *has to be* sold, in order to make profits. If Say's law were true, that is, if everything produced were sold, then the process of capital accumulation would be as stable and constant as the trajectory of the stars under the law of universal gravitation. The capitalist chrematistic would be a system that, through an automatism of the market, functioned as a perfect machine. If this law were true, there would be no point in challenging it. But the veracity of Say's law goes no further than its enunciation. It is because this law does not function in the real world that the capitalist chrematistic is based on a social invention. This invention is the *principle of ostentatious consumption* (Veblen 1973). In economic theory this is known as the axiom of the insatiability of *homo economicus*. In real capitalism it appears in the billion-dollar budgets of the advertising industry, in excessive spending on luxuries in the First World, in rampant use of credit cards to expand purchasing power, in excessive energy consumption, and also in the large ecological footprint of those who consume the most; meanwhile, planned obsolescence of products plays the role of the material guarantee of constant renewal of consumption. But this social invention, ostentatious consumption, is also seen in the fields of education and politics where these exhibit utilitarian values. In sum, the capitalist chrematistic, the producer of increasing quantities of commodities, engenders the consumer society for its self-perpetuation. Without induced consumption, production cannot grow, and therefore, the accumulation of capital cannot be reproduced. Growth is thus the *summum bonum* of capitalism.

Biophysical limits of the planet

However, there is an irrefutable fact that jeopardizes capitalism and its chimerical claims of sustained economic growth: the planet has biophysical limits. The first scientific arguments on the finiteness of the Earth and on the implications of this for population growth, resource use and production were set forth in the pioneering works on population growth and common natural resources by Paul Ehrlich (1968) and Garrett Hardin (1968), on the entropic dimension of the economic process by Nicholas Georgescu-Roegen (1971), on the limits to growth by Meadows and his team (1972), and on the consequences of using fossil fuels and global warming by Schneider and Londer (1984) and James Hansen (1988). Prior to these warnings, the American geologist Marion King Hubbert predicted in 1956 that the production of oil in the United States would reach its maximum (peak oil) in the 1970s (Rifkin 2002). Hubbert and his thesis were criticized at the time by the vast majority of geologists and energy company executives, but the facts eventually proved him right: peak oil in the United States became a reality in the decade Hubbert had predicted, accompanied by the novel phenomenon of stagflation.

Now the specter of the limits to growth is haunting the world, appearing first of all in the depletion of the once-great deposits of oil. The scarcity of petroleum was the root cause of the crisis of 2008 (Rubin 2009; Meadows 2009; Heinberg 2010). With rising demand, stagnant extraction rates and declining worldwide petroleum reserves, the price of oil per barrel increased by a factor of 10 between 1998 and 2008, to a level beyond US$140. The result: the worst crisis of the post-war period. As a result of this shock the skeptics of oil depletion, who in the past included universities (Sami Nashawi et al. 2010), the International Energy Agency (IEA) (Connor 2009) and the British government (Rhodes 2011), now discuss publicly the projections of global peak oil made by Hubbert, Campbell and other geologists. To mention an example, Chris Skrebowski, a specialist for the Industry Taskforce on Peak Oil and Energy Security, foresaw that global oil production would reach its peak late in 2010 or early in 2011, with maximum production of 91 or 92 million barrels a day, and that it would decline from 2015.

All this indicates that the specter of the limits to growth has arrived, will stay and will wreak havoc. According to the IEA's *World Energy Outlook 2009*, world demand for oil will rise from 85 million barrels a day in 2008 to 105 million in 2030. In the corresponding IEA report from 2002, the figure for 2030 was estimated at 120 million barrels. IEA chief economist Fatih Birol warned in a 2009 interview with the British *Independent* that the world's main oilfields had passed their maximum supply capacity and that the rate of decline had increased, to 6.7% from 3.7% in 2007. 'In most fields, oil production has now peaked, which means that other sources of supply have to be found to meet existing demand. … Even if demand remained steady, the world would have to find the equivalent of four Saudi Arabias to maintain production, and six Saudi Arabias if it is to keep up with the expected increase in demand between now and 2030', Dr Birol said (Connor 2009). The exact consequences of this indisputable deficit are unpredictable, but the price of 'black gold' will definitely rise considerably – according to some, like Jeff Rubin (2009), to the exorbitant amount of US$255 per barrel in 2012. At that price, the hopes for recovery and for sustained growth voiced by the new Holy Alliance would remain just that, mere hopes, displaced by the likely scenario of the next great depression of global capitalism. In that situation, we will find ourselves face to face with the specter of the limits to growth and, with it, face to face with the limits of capitalism.

This is no small matter. From the early years of the past century petroleum has been the most important energy battery of the capitalist chrematistic: it currently provides 34% of the world's primary energy supply. To give us an idea of what this means, of its importance, let us compare the energy input of petroleum with human labor and the prices paid for each. The 31,894 million barrels of oil (British Petroleum 2011) that are consumed annually (2010)

around the world are equivalent to the effort of 39,906,202,135 people working eight hours per day, 365 days a year – assuming an energy efficiency of 40% of the 5.8 million British Thermal Unit (BTU)/barrel and an output of 635 BTU for each hour worked. That is to say, it would take the work effort of six times the world's population to substitute for the energy provided by petroleum alone. That is excluding natural gas and coal, which together with petroleum make up 80% of the energy supply. Furthermore, the figure is still missing the 20% that other energy sources provide. On the other hand, assuming a price of US$79.5 (2010, Brent dated), the price paid for those 31,894 million barrels was around US$2,535 billion. If the energy of each barrel of oil had cost the same as human labor (US$2/h = 635 BTU/h), the monetary value of the oil consumed in 2010 would reach the stratospheric sum of US$233,052 billion. In this scenario, each barrel would cost US$7307.08 (91.93 times the market price). From this perspective, capitalism is not only a chrematistic that steals a part of the value created by the worker; it is also a hydrocarbon chrematistic that takes free of charge the energy available in nature.

The available energy of hydrocarbons, along with the economic exploitation of the working class, has made possible the growth in the production and consumption of an 'immense collection of commodities'. From 1830 until now gross world product (GWP) has increased 49-fold (Sachs 2006, 62). In 2008 GWP was US$69,743 billion. But this enormous wealth has not benefited all humankind. Its consumption is uneven. There are a few nations that on the basis of their national population and production enjoy high average standards of living (GDP per capita). Due to their high consumption, the people who live in these wealthy nations consume enormous amounts of energy; that is to say, through their overconsumption a huge proportion of the free energy that capitalism sucks from fossil fuels is lost. But this huge exosomatic consumption of energy, namely, energy consumption beyond the endosomatic consumption of 2000 or 3000 kcal needed for a basic diet, is not genetically conditioned but is rather the expression in energy terms of the imposing on the social imagination of the *principle of ostentatious consumption*, which is vital to the process of capitalist enrichment.

Getting back to petroleum, however, the problem is not that there is any lack of it. According to British Petroleum (2011) there are still approximately 1383 billion barrels (in 2010) in deposits around the world, which at present consumption rates of 87.3 million barrels per day would be enough for roughly 40 years. The problem that has put the global dynamic in check is the relative shortage of petroleum due to excessive demand in relation to production, as a result of the imminent arrival of peak oil.

Oil from deposits in the Arctic north, proclaimed with great fanfare as the new global energy reservoir, could at best serve to palliate the energy gap. The 90,000 million barrels of reserves that are estimated by the US Geological Survey (USGS), and that supposedly 'drown' the Arctic, are only equivalent to three years of current global demand. The deposits of heavy and extra-heavy oil in the Orinoco Belt in Venezuela, or in the form of natural bitumen in the Canadian province of Alberta could perhaps lessen or postpone the inevitable. The 165,000 million barrels of oil (Rubin 2009, 55–6) that are 'economically recoverable' from the latter are equivalent to a bit more than five years of world oil consumption, though the government of Alberta 'affirms it now possesses "reserves" that are equivalent to more than a trillion barrels' (Roberts 2004, 79), i.e. equivalent to 33 years of global oil consumption. Thus, it is close to being the case that even together, the oil from the Arctic, plus that from the Canadian tar sands, plus the potential flow from Venezuela could not cover the growing deficit of more than 20 million barrels per day, equivalent to 'six Saudi Arabias' that peak conventional oil is leaving in its wake.

Unfortunately for capitalist globalization this energy deficit, the consequence of peak oil, is being exacerbated day by day due to the imminent limits on production of coal and natural gas. According to the report 'Coal: Resources and Future Production' by the Energy Watch Group (2007, 8), the 'global peak of coal production' is 'to occur around 2025 at 30 percent

above current production in the best case'. But in a recent study published in *Energy*, the international journal, Professors Tadeusz W. Patzek and Gregory D. Croft (2010, 3109) point out that the 'global peak of coal production from existing coalfields is predicted to occur close to the year 2011'. The same goes for natural gas, the peak for which is estimated to come shortly after peak oil; according to Colin J. Campbell (2002) this will happen close to 2020. In sum, the evidence indicates that the global machine of incessant transformation of free and human energy into money accumulated is subject to a geological imperative in the form of 'peak everything' (Heinberg 2010).

In the face of this, it is obvious to everyone – except for myopic neoclassical economists such as Solow (cited in Daly 1989, 18), who stated that it is conceivable that 'the world, indeed, can be without natural resources' – that the mania for growth must have its end in the biophysical limits of the planet and the laws that regulate that finiteness. According to the first law of thermodynamics, energy cannot be created just by whim to move the huge gear of the production and consumption of commodities. It is only the transformation of available energy, that humans can access, that makes such movement possible. At present there are two sources of free energy. The first, known as renewable, comes from solar radiation that reaches the Earth; wave power; hydroelectric; wind and geothermal energy. Excluding the possibility of a nuclear winter or a drastic volcanic eruption that darkens the atmosphere, only solar power in reality offers an unlimited flux of energy. Droughts during 2009 in South America, provoking havoc in the supply from hydroelectric plants, provide a good example of the vulnerability of these renewable energies. Also, due to technological restrictions some of these renewable sources have not been able to be extensively exploited. Until now, their joint contribution to the global primary energy supply has not gone beyond 13%. The other source of free energy, besides nuclear, is essentially the stock of fossil fuels, from which the capitalist 'gear' has certainly derived its movement. Around 80% of total world primary energy production comes from petroleum, coal and natural gas (British Petroleum 2011). In spite of large reserves, the stock is finite. But apart from being limited, it can never be put to full use; this is ensured by the second law of thermodynamics, the law of entropy. In short, the amount of free energy available for use is finite. In spite of this finitude, the capitalists claim to be able to sustain growth in the production and sale of commodities while ignoring the fact that their plans for enrichment cannot transgress the laws of thermodynamics. Those plans form an *irrational social principle* of the capitalist elites; the laws of thermodynamics, meanwhile, are laws of natural truth.

The historian and anthropologist Joseph Tainter (1988) argues that energy scarcity has in the past caused the collapse of complex societies. Rome, Tainter states, faced an energy deficit due to a decreasing performance in agriculture that was temporarily solved through the usurpation of energy (grains, metals, slaves) from neighboring states after they were conquered. But the territorial and demographic growth of the Roman empire led it once again to an energy deficit. The result was the separation of the empire into two parts. Other societies have collapsed for the same reason. Western society, the first and last civilization to be fed by fossil fuels, will face the same destiny unless it finds an energy substitute in the medium term.

Despite the energy deficit that will result from peak oil, the fall of the empire of the chrematistic of growth is not inevitable. In the seventeenth century the use of coal saved the newborn English capitalism from energy asphyxia (Roberts 2004, 35–48), after the great devastation of the forests for heating and as the energy source for the production of iron. In the twenty-first century the immense deposits of methane hydrates in the permafrost of the boreal tundra or in the deep ocean of the continental platforms, or the hydrogen, or else energy from nuclear fusion, could guard a shaky global capitalism from the specter of the limits of hydrocarbons. Judging from the absence in the short term of technologies that would make feasible the extensive exploitation of these sources of energy, though, any such possibility of salvation from the imminent decline of

oil production remains in the research labs. Concerning nuclear fission, Richard Heinberg (2010) comments that with the 435 reactors in use today we could reach 'peak uranium' between 2040 and 2050. With more reactors, the peak could be reached even sooner.

For the present, the dependency of the capitalist chrematistic on hydrocarbons is like that of a drug addict who will die if he suddenly stops consuming drugs, but who will also die if he keeps consuming them. This is because the chrematistic of the compulsion for growth, as it enters a crisis arising from the energy deficit, also faces another specter of the limits to growth: global warming.

Climate change as such has been a natural phenomenon throughout geological history. But the present global warming, euphemistically attributed to anthropocentric activities, is the result of the excessive growth of industrialization, commercialization and commodity consumption, the latter mainly in the rich countries. While other greenhouse gases are also involved, atmospheric warming results mainly from emissions of carbon dioxide (CO_2) due to the intensive use of hydrocarbons. The disappearance of arctic ice, logging of rainforests, changes in the oceans, etc., contribute to the increase in temperature through positive feedbacks. In 2007, the UN's Intergovernmental Panel on Climate Change (IPCC) concluded that by the end of the twenty-first century the global average temperature could rise by an amount between 1.1 to 6.4°C (IPCC 2007). Since then, estimates of this warming have increased. In 2009, for example, Chris West (cited in McPherson 2010, 136) of the Program on Climate Change Impacts in the United Kingdom (UKCIP) at Oxford University argued that the warming by mid-century would be in the region of 4°C. These and other projections, however, may well be underestimated, since they do not take account of two additional factors: global dimming and methane hydrates. Among other scientists, Andreae, Jones and Cox (2005) have pointed out that clouds of pollutant particles (soot, sulfur dioxide, sulfates, nitrates, ash), by reflecting solar radiation, have had a cooling effect on climate. Reducing particulate pollution is viewed as essential to protect public health, but if this is done, the average atmospheric temperature could be 8°C higher towards the end of the twenty-first century. At such temperatures the huge deposits of methane hydrates could be destabilized, releasing methane gas to the atmosphere. As a greenhouse gas, methane is around 24 times more powerful than carbon dioxide, and these releases could have a huge positive feedback effect on global warming.

According to experts in the field, a safe level of carbon dioxide should not exceed 350 parts per million (ppm). By 2008 the concentration was already 385ppm. At a certain level, estimated at around 500 ppm of CO_2, global warming will arrive at the point of no return: the mantle of ice that covers Greenland will melt, rainforests will be replaced by scrub or deserts, and marine algae that fulfill the double function of absorbing CO_2 and producing clouds will be destabilized. As things are currently going, we will reach 500 ppm in about 40 years (Lovelock 2006, 51). Despite the catastrophe in 2009 in Copenhagen, a group of countries led by Barack Obama's government sought to impose 'a secret draft agreement' in which it was stated that the target would be 450 ppm, equivalent to 2°C. For James Hansen (2008), one of the worldwide experts on the subject, such a target means 'a recipe for global disaster, not for salvation'.

In sum, the Earth's biophysical systems place definite limits on the sustained growth of capitalism. Therefore, it is not the contradiction between the high level of development of the productive forces and the prevailing capitalist relations of production that is taking us towards socialism; it is precisely the limits to growth that put humankind in the anteroom of an economy able to sustain life.

Compulsion for growth

Notwithstanding the biophysical limits of Earth, the large corporations and their political employees hold to their fatal claims of sustained growth in the production and sale of goods. 'As the

leaders of the world's largest economies, we have a responsibility to work together on behalf of sustained growth', said Barack Obama (2009) in a statement ahead of the 2009 G-20 meeting in Pittsburgh. Former UK prime minister Gordon Brown (2010) supports this initiative in his book *Beyond the Crash*, saying that achieving 'stronger, more sustainable growth … will require an agreement among the economic powers of the world, bigger, more imaginative, and more lasting than even the Marshal Plan for Europe'. These discourses, like all of those from the establishment regarding the sustained growth creed, are oriented toward shoring up the global chrematistic, since growth within capitalism is just a euphemism for more profit.

But this compulsion for growth is not exclusive to capitalism. The countries of so- called historical socialism entered into a dynamic of maximization of growth rates during the Cold War. Production in industry and agriculture in the Soviet Union between 1950 and 1962 grew at an annual average of 11.3% and 5.5% respectively, while the corresponding figures in the United States were 3.9% and 1.7% (Sorokin 1970, 838). From Moscow, Nikita Khrushchev warned that this 'growth of industrial and agricultural production is the battering ram with which we shall smash the capitalist system' (McKibben 2008, 8). In fact, 'the concept of economic growth and growth rate appeared for the first time in the Soviet Union of the 1920s' (Hinkelammert 1990, 53). Unfortunately, Moscow's socialism in the past could not embark on a route that dispensed with economic growth, and neither can the twenty-first-century socialism of the present.

Today's vanguard socialist states have achieved great advances in improving the living conditions of their people. In China, Vietnam and Venezuela, for example, poverty has decreased and health services, education and social security have improved. More people in these countries now enjoy a worthy life. The human development index has improved, and in general many successes have been scored thanks to the socialist policies implemented by these governments. But these improvements also represent advances along the rails of growth. The benefits obtained for millions of people and the popular support enjoyed by these socialist governments mean that the economic policies of growth are fully justified. In any case, it is not ethical to demand policies that militate against growth when there are people who live in poverty. Even if we examine the situation coldly from the *realpolitik* perspective of crude power, economic growth in the socialist countries has been the *conditio sine qua non* for containing the advance of capitalism. Without the growth of production in China and Venezuela, which has made possible the consolidation of strategic sectors in the hands of the state, the neoliberal globalization project of the empire of the United States and its allies would definitely condemn the peoples of the Third World to the barbarism of human exploitation and the pillage of nature. Margaret Thatcher's edict, 'There is no alternative', would be read out in the ghettos of the South just as McDonald's and Coca-Cola are now advertised around the world.

But in the large cities of the countries of socialist conviction, some advances in popular living standards tend to mimic capitalism's ostentatious consumerism, suggesting some important questions about the meaning of socialism.

Policies based on growth have no future, whether or not they are implemented by socialist-inspired states. In fact, taking into account the inevitable biophysical limits of the planet, it would be economic and political suicide to base the economy of any socialist country on growth. A prudent strategy of diversification, investment and secure access to sources of available energy around the world only postpones the inevitable. An appeal to reason and to a *principle of responsibility* has to provide the ethical basis for a policy of withdrawal from growth, since on a finite planet the pursuit of infinite growth must sooner or later lead to collapse. I think it is important to consider the implications of history. Joseph Tainter (1988) and Jared Diamond (2005) are among the historians who have documented the final destiny of societies which have flouted the limits. The same is happening now to the largest Empire that has ever existed in the history of humankind.

Specifically, the lifetime that remains for the policies of growth is about 20 years if we take into account the biophysical limits of the planet, especially the depletion of hydrocarbons and the effects on the Earth of global warming. During this period of promoting growth, socialist states have the triple strategic task of: (a) consolidating power, through policies of intervention and planning, against the voracity of foreign private corporations whose virulent capacity could eventually control the national system and corrupt the state itself; (b) taking advantage as much as possible of the benefits of growth in relation to the distribution of wealth; as the Prime Minister of China Wen Jiabao (2010) recently announced: 'We will not only make the "pie" of social wealth bigger by developing the economy, but will also distribute it well'; and (c) delineating in advance the sustained withdrawal of the socialist economy from the dangerous policy of growth. Implementation of this withdrawal cannot extend beyond the grace period granted by the bio-energetic capacity of the planet.

Withdrawal from growth and the socialist principle of moderate consumption

The material necessities of humankind will never be met through policies of sustained growth. In the twenty-first century the only sustainable economy will be one that opts for a withdrawal from growth. At first glance, this does not appear to be an easy task. In fact, the withdrawal from growth by the socialist countries (China, Vietnam, Cuba, Venezuela, Ecuador, and Bolivia) represents the greatest environmental challenge to be overcome.

This is a genuinely big challenge, because it means acting in opposition to the culture of 'growthmanship' (Collins 2000), and especially, because it requires fighting the great myth of growth. From its early formulations, growth has been linked with the fate of poor workers. 'It deserves to be remarked … that it is in the progressive state, while the society is advancing to the further acquisition, that the condition of the labouring poor … seems to be the happiest and the most comfortable', Adam Smith (1937, 93) wrote in 1776. Growth is now considered the key to the achievement of more universal goals. 'For this to happen – and this is my main message today – everything hinges on the restoration of balanced, sustainable, global growth. Without this, all other efforts to achieve the Millennium Development Goals will be frustrated', stated Dominique Strauss-Kahn (2010), then IMF Managing Director, in September 2010 in an address to the United Nations General Assembly. It is clear that neither Smith nor Strauss-Kahn considered poverty to be a result of the growth process itself, related to the capitalist system of enrichment. The main mythical function of growth is to hide human exploitation, and likewise the exploitation of natural resources carried out in poor countries by the First World. This myth of growth was one of the most important ideological weapons of the capitalist world for the containment of socialist liberation movements in the 1960s, and now also serves as a veil of ignorance for the authentic *leitmotiv* of our 'economy', namely, the accumulation of capital in the industrial, commercial and financial spheres under the *fundamental constitutive principle* of maximization of the profit rate.

But if the socialist states do not attempt something that is apparently impossible, that is, withdrawal from growth, they will never discover what is *possible*. The German philosopher Ernst Bloch (cited in Hinkelammert 2010, 82) urged us to 'aim beyond the goal, to hit the target'. Without renouncing capitalism and its excessive consumerism, the 'steady state' originally proposed by John Stuart Mill (1951, 639–44) in 1848 and now defended by Herman E. Daly (1991) is not possible. The very idea of a zero-growth capitalism is inconsistent in its own terms: capitalism is compulsion for growth. I consider that what is *possible* is the planning of a new socialism based on *constitutive principles* in harmony with the environmental requirements of the twenty-first century.

Unlike capitalist countries that cannot stop growing because growth is innate to their mode of operation, socialist countries can withdraw from growth. Capitalism cannot do this, since as a

chrematistic guided by maximization of the profit rate it depends functionally on the sustained growth of production and the ostentatious consumption of goods. Socialism can accomplish this if it adopts the plan of a new economy whose *fundamental constitutive principle* is the production of goods for meeting the material needs of all human beings. By not seeking profits, this new socialism does not have the growth of production as a *conditio sine qua non*. Its existence does not depend on endless growth. Taking into account the limits to growth, this is an advantage which socialism has over capitalism.

Nevertheless, even when the principle of production of goods for meeting the human needs leaves behind compulsive growth stemming from greed for more profits, this does not in itself guarantee that the biophysical limits of our planet will be respected, because we could eventually enter into a consumer spiral that in turn could trigger a new dynamic of growth. To avoid this possibility, socialism in the twenty-first century has to fix limits to consumption in the new economy. The key is to move from the *principle of ostentatious consumption* to a new *principle of moderate consumption*. This is the essential foundation for building an economy with limits, one that is compatible with our biophysically finite planet.

However, to make the shift to moderate consumption presupposes asserting new values or carrying through a change of 'social imaginary' (Castoriadis 2001). The ancient Greeks saw in restraint a *principle of life*. The temple of Apollo at Delphi bore the inscription '*Meden Agan*' (nothing in excess). In ancient Rome there were laws that limited private squandering. Similarly in Christianity, *moderationism* is the position that drinking alcoholic beverages is permissible, though drunkenness is forbidden. Pre-Hispanic cultures retain this substratum of moderation. Bolivia and Ecuador have taken the first steps in this direction, having incorporated in their Constitutions the indigenous notion of *Sumak Kawsay* (good living). In a similar way, the new socialism of the twenty-first century should not take part in an absurd and unsustainable race to achieve the unsustainable levels of ostentatious living of the capitalist elite, idealized as 'the American way of life'. What it is intended is that people live with dignity, without shortages, and with a high level of moral and not merely monetary values. People should be able to live in collective fullness, where there is enough for everybody if the distribution is carried out with justice. Gandhi (cited in Hinkelammert 2010, 78) spoke of this fullness: 'India has enough to let everybody live, but it does not have enough to satisfy the greed of a few'.

If we extend this reflection to the capacity of the biosphere for regeneration, Earth has enough resources to let everybody live, but it does not have enough to satisfy the greed of a few. In today's world the 500 million richest people (7% of the global population) are responsible for 50% of the polluting emissions, while the poorest 50% of people are responsible for just 7% (Pearce 2009). It is ludicrous to reflect that 20% of the global population accounts for 80% of the consumption of natural resources. The Global Footprint Network (2010) says that 'humanity' uses the equivalent of 1.5 planets to provide the resources we use and to absorb our waste. It is not all of 'humanity' that does this, but the wealthiest sector. To put the situation into perspective, if all humankind lived at the same standards of consumption as the people of the Dominican Republic currently do, we would be using only 77% of the planet's bio-capacity; conversely, if we all practiced the obscene consumerism of North Americans, humankind would need five Earths to do so. A difficult future is in store for us. By 2030, based on conservative projections of demographic growth, economic activity and climate change, the capitalist chrematistic will require the bio-productive capacity of two Earths. What will happen in 2050 when the global population reaches 9000 million? Very likely, this will lead to a rupture of Earth's environmental equilibrium.

Based on this reasoning, twenty-first-century socialism has to define in specific terms the limits to moderate consumption postulated previously. These limits are a function of the population, and have as an impassable line the bio-capacity of the planet. Because we only have one Earth, the socialism of the twenty-first century cannot base itself on growth policies, and

neither can it postulate a moderate consumption according to the bio-capacity of each country. Thus, for example, if the world system were at this moment operating under the socialist *principle of moderate consumption*, based on the global population and the total bio-capacity of the Earth, each person could consume a maximum amount of goods and services that would not exceed an ecological footprint of 1.7 hectares. This would be our individual share of Earth's bio-productive space, which would be held in common and used to supply humanity's collective needs. But by 2050, if the world's population increases to 9000 million as projected by the United Nations, and supposing the capacity of the planet remains unchanged, each human being will have the right to an ecological footprint of only 1.3 hectares. And if the population grows even more during the twenty-first century, this will lead to an even more severe contraction in the level of the available personal consumption of all humankind, bringing it closer to a generalized impoverishment; in theory we could arrive at an extreme situation in which, due to demographic growth, the available surface area per person would not be enough to supply people's minimum material necessities. The ecological overdraft, as it exists today, would provide an easy way to avoid diminishing humanity's consumerist capacity – though only for a time, and at the cost of destroying nature. However, a timely worldwide campaign in favor of population control, using as an example China's one-child demographic policy, could diminish the growing pressure exerted by demographics on nature.

I consider that the allocation to all human beings of an equal plot of Earth's bio-productive space, up to the maximum permitted by the *moderate consumption principle*, is the fairest and most convenient way to mitigate the 'global collapse' toward which capitalism is taking us. If all humans are 'free and equal in dignity and rights' (The Universal Declaration of Human Rights), there is no valid reason why some should enjoy a larger plot of the Earth's natural patrimony, at the expense of a smaller plot for others. If this happens today, that does not prove it is just, or that it offers the basis for a valid and ethical allocation in the future. If today the people in high income countries have an average ecological footprint of 6.1 hectares, while the inhabitants of poor nations have a footprint of only 1.0 hectares, this simply proves that capitalism is unfair in relation to the access that humans have to the natural patrimony of the planet. Meanwhile, to defend an uneven allocation of the globe's bio-capacity in line with the carrying capacity of each country would be a new kind of international injustice. For example, in countries like Canada or Finland with a high bio-capacity per person (of 17.1 and 13 hectares respectively), people could raise even further their levels of ostentatious consumption of the capitalist era, of 5.8 and 5.5 hectares of ecological footprint per capita. But in nations like Guatemala, Vietnam and Zimbabwe which have a very low bio-capacity per person (of 1.1, 0.6 and 0.7 hectares), people would have to reduce their low consumption levels, which today leave an ecological footprint of only 1.7, 1.0 and 1.0 hectares per capita. This situation would again make the supposed economic justice a luck-of-the-draw proposition, dependent on the geographic context. But under this disaggregated scheme the inhabitants of countries such as Japan with just 0.6 hectares of available bio-capacity per person, South Korea with 0.3, Belgium with 1.1, Greece with 1.4, Italy with 1.1, Holland with 1.0, Portugal with 1.2, Spain with 1.3, Switzerland with 1.3, and the United Kingdom with 1.6, would also have to reduce their ostentatious consumerism still further as compared to the universal equitable allocation.

In sum, by producing goods to meet the needs of the people, while guided by the *fundamental constitutive principle*, and respecting nature through the *principle of moderate consumption*, the new socialism of the twenty-first century can establish itself as a sustainable alternative for life on Earth. The principles involved here are environmental imperatives that we must consciously accept in order to channel the collective energy of the people to create a better world.

If the fall of civilizations (Spengler 1993; Toynbee 1998) is explained by an inability to mobilize human energy to confront the challenges of society, then paraphrasing Marx and

Engels we can say: let the ruling classes tremble at the revolutionary project of a new socialism for the twenty-first century. Humanity has nothing to lose but its chains, in exchange for which it has a world beyond growth to win.

Socialists of all countries, *withdraw from growth!*

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