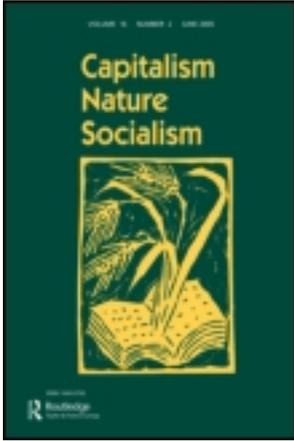


This article was downloaded by: []

On: 01 November 2012, At: 15:40

Publisher: Routledge

Informa Ltd Registered in England and Wales Registered Number: 1072954
Registered office: Mortimer House, 37-41 Mortimer Street, London W1T 3JH,
UK



Capitalism Nature Socialism

Publication details, including instructions for authors and subscription information:

<http://www.tandfonline.com/loi/rcns20>

On the Prospect of Preventing Global Climate Catastrophe due to Rapid Social Change

Olli Tammilehto

Version of record first published: 10 Feb 2012.

To cite this article: Olli Tammilehto (2012): On the Prospect of Preventing Global Climate Catastrophe due to Rapid Social Change, *Capitalism Nature Socialism*, 23:1, 79-92

To link to this article: <http://dx.doi.org/10.1080/10455752.2011.648842>

PLEASE SCROLL DOWN FOR ARTICLE

Full terms and conditions of use: <http://www.tandfonline.com/page/terms-and-conditions>

This article may be used for research, teaching, and private study purposes. Any substantial or systematic reproduction, redistribution, reselling, loan, sub-licensing, systematic supply, or distribution in any form to anyone is expressly forbidden.

The publisher does not give any warranty express or implied or make any representation that the contents will be complete or accurate or up to date. The accuracy of any instructions, formulae, and drug doses should be independently verified with primary sources. The publisher shall not be liable for any loss, actions, claims, proceedings, demand, or costs or damages whatsoever or howsoever caused arising directly or indirectly in connection with or arising out of the use of this material.

On the Prospect of Preventing Global Climate Catastrophe due to Rapid Social Change

*Olli Tammilehto**

The present official economy is heavily dependent on the use of fossil fuels. The increase of the use of coal, natural gas, and oil has gone hand in hand with economic growth. However, to prevent global climate chaos, humanity must decrease and eventually cease burning fossil fuels. There is an increasing amount of evidence that we must quickly wean off the use of oil, gas, and coal, and most of the remaining sources of fossil fuels must be left in the ground.

It is widely understood that to avoid catastrophic climate change, the global average temperature must not rise more than 2° centigrade. According to a recent study (Meinshausen, et al. 2009), this means that between 2010 and 2050 only 750 billion tons (0.75×10^{12} tons or 750 Gt) of CO₂ can be emitted. At the present rate fossil fuels are burned, this carbon budget will be exhausted before 2030. Yet according to climate scientists, limiting emissions to 750 Gt gives us only a 75 percent chance to stay within a 2°C rise in global temperatures. The 25 percent uncertainty factor is significant. For example, how many people do you know who would knowingly live next to a plant that had a 25 percent chance of a major explosion? Put in that light, one would think a great majority of people would like an even smaller carbon budget.

On the other hand, many climate scientists and concerned citizens understand that even 2°C is too much. The global temperature has already increased 0.8 °C since pre-industrial times, and glaciers, ice sheets, and the Arctic ice cap are melting and disintegrating (Allison, Bindoff, Bindshadler, et al. 2009; Hansen 2009; Tin 2008). The Arctic permafrost has also started to melt (Eamer 2007; Pearce 2009; Monbiot 2008). In many poor countries of the South, climate change is recognized as a reality that is already causing much suffering in the form of sea level rise, drought, and abnormal weather patterns. In response, small island nations and developing countries have demanded that the upper limit for a rise in the global average temperature should be no greater than 1 or 1.5 degrees. The organization “350.org,” which has members all over the world, demands that CO₂ concentration in the atmosphere be reduced from the present 385 ppm (parts per million) to 350, which roughly corresponds to limiting temperature rise to 1.5 °C.¹ The demand is based on

*olli@tammilehto.info

¹The temperature rise is relative to that of pre-industrial times. Maintaining the present concentration of CO₂ would eventually increase the temperature more than 1.5°C.

studies concluding that the safe level of CO₂ is really 300-350 ppm (Hansen, Sato, and Kharecha, et al. 2008; Hawkins, Hunt, and Holmes, et al. 2008).

If we choose 1.5 degrees instead of 2 as the maximum temperature rise, then the carbon budget gets smaller. One study calculated the difference as human emissions of 420 Gt instead of 750 Gt CO₂ between 2010 and 2050 (Baer, Athanasiou, and Kartha 2009). This would require emissions to decline by about 10 percent annually. Fairness demands that most of the allowable increase should be allocated to the global South or the Majority World,² because per capita emissions have been and still are small compared to the North. In order to stay within the 420 Gt emissions target, the old industrial countries would have to cut their emissions much more than 10 percent per year, a prescription that collides directly with continuing economic growth. Kevin Anderson, Director of the Tyndall Centre of Climate Change Research, observes that needed emission “reduction rates are incompatible with the current framing of economic growth” (Anderson 2009; Anderson and Bows 2008). The writers of “Growth Isn’t Possible,” a recent report from the New Economic Foundation, arrive at the same conclusion. Both Anderson and the NEF conclude that to reconcile climate safety with economic growth, the carbon intensity of the economy would need to improve so much so quickly that it is practically impossible (Simms and Johnson 2010).

One could counter this argument by pointing out that the needed rapid transition to a low-carbon economy is similar to the transition to a war economy that occurred when countries joined the Second World War. The difference is that the economy grew fast during the war (Clarke 2010). However, any rapid increase in industrial production would require a lot of energy, and in the beginning of a transition to a low-carbon existence, the only option is to use existing energy sources—i.e., mainly fossil fuels. Later in the transition it would be possible to use non-carbon energy sources created in the first phase of the transition. But because the transition demands a lot of energy, these new energy sources would not be available in other fields of the economy. This means that despite a huge investment in decarbonizing the economy, greenhouse gas emissions first go up, and it would take a long time—more than a decade—before there is an overall decrease (Astyk 2008).

Growth Imperative as a Stumbling Block

An obvious way out of the climate change dilemma is to cut down production in general, primarily by reducing both institutional consumption and individual consumption by the global upper and middle class. At the same time, a transition to non-carbon energy sources should begin, phased in with moderate speed so as not to generate a peak in fossil fuel use.

²In this article I use these terms to refer to the poor majority of people in the world. They are not quite adequate, but I consider them better than the obsolete terms “developing countries” and “Third World.”

The record of economic depressions and collapses shows that such a plan is feasible. For example, during the Great Depression in 1929–1932, carbon dioxide emissions are estimated to have dropped by 35 percent (Sulugiuc 2009). The collapse of the Soviet Union decreased CO₂ emissions 5.2 percent per year in 1989–1998 and 41 percent over the entire period (Foster, Clark, and York 2008). The recession that began in the autumn of 2008 lowered CO₂ emissions in the U.S.A. and many European countries markedly. Even with the rise in China and India's emissions, global CO₂ emissions decreased in 2009 (Kolset 2010).

However, reigning economic orthodoxy makes an intentional decrease in production and consumption very difficult. The beneficent character of economic growth has been a self-evident truth in the mainstream and even in most left-wing circles. Because the climate emergency makes it necessary to break this orthodoxy, the emerging degrowth movement is all the more important. Its intellectual branch is working hard to deconstruct and understand the growth paradigm.³ The contributions of Bonaiuti and Latouche in this issue and elsewhere are fine examples of this essential intellectual activity.

However, these and similar texts do not explicitly deal with the antagonistic and conflict-ridden character of modern societies. Similarly, the texts mostly keep silent on the sectors or modes of existence that are only loosely integrated to the growth logic. Examples include the domestic sphere, subsistence societies, barter arrangements, and the commons, which are discussed below. Yet it may be that these precise characteristics of the present constellation are the keys to its unfolding.

Even in answering the basic question, “why is economic growth so important?,” it is useful to remember that our societies are full of conflicts. Although it's true that the main reason for the growth imperative is that we live in societies where the key units are profit-seeking corporations, this alone does not explain it. Because companies, besides seeking their own success and growth, are also after the death of their competitors, net growth could also be negative. But negative or zero growth in capitalism usually means increasing unemployment and social instability.⁴ Therefore, from the beginning of the 19th century, European economists and politicians realized that state policies must encourage and stimulate general growth in production in order to avoid social chaos. That is, people who lose their livelihoods

³The present degrowth debate is a new wave of an older discussion which started in the wake of the modern environmental movement in 1960's (Mishan 1969; Meadows, Meadows, Randers, et al. 1972; Barkley and Sechler 1972). Even though the public debate lapsed, some scholars have continued the research and discussion for decades (Daly 1980; Douthwaite 1992).

⁴In some models, employment is maintained under zero-growth capitalism by shortening the working week (Victor 2008; McGregor 2006). However, these models do not include capitalism as a political system where big companies dominate, political and corporate elite overlap, and business interests have priority over everything else. Under capitalism, strong social movements can occasionally and temporarily prevail over corporations, but when the issue is the accumulation of capital, movements must look beyond capitalism.

because they themselves or their employers fail in competition would be absorbed into other growing branches of the economy (Kurz 1999).

Economic growth also functions as an ideology that promises better living and prosperity for all—i.e., it functions as a surrogate for equality and democracy under which the enormous gaps in power and wealth generated by capitalism can be maintained.

This has especially been the case in Europe and North America since the beginning of the 20th century. To curb the rising tide of social change movements, the powers that be had to devise a new way to rule. The new order, later to be called fordism, was invented. It was based on mass production of relatively cheap consumer goods, the types and models of which were changed regularly and the necessity of which was inculcated in people by a new propaganda system that worked on a subconscious level (Carey 1997; Chomsky 1989). And ever since, consumerism has been the key ideology used to maintain power relations, an equation that needs economic growth to function⁵ (Sklair 2002).

Accordingly, halting economic growth—let alone *decreasing* production and consumption—would destabilize the power establishment both socially and ideologically. That's why power wielders are seeking to continue the growth and its concomitant fossil fuel emissions despite the dire implications of climate catastrophe. However, new perspectives on the political nature of economic growth may open up among common people despairing in the face of global warming. Aside from curtailing consumption, revisiting old struggles for real democracy and social equality is also imperative. For it follows that when the ideologically constructed prospect of everyone becoming rich ceases to exist, it will be very difficult to suppress people's centuries-old yearning for democracy and equality.

Though the chances of dethroning growth by a huge increase of social movement activities in the near future seem very slim, there are reasons why we still have hope. Social change movements exist, and there are historical experiences indicating that in dire situations these movements can change and grow rapidly. Witness, as of this writing in November 2011, the Occupy Wall Street movement that is quickly spreading around the world. History also teaches us that the combination of ongoing social struggles and a sudden crisis can cause a rapid structural change in society. However, several questionable assumptions must be overcome in order to realize that such change is possible. These assumptions relate to 1) the connection between consumption and well-being, 2) the interpretation of

⁵Here I am using the term "ideology" to refer to those ideas and discourses spread and spreading among subdued people so as to make the exercise of power easier. Another kind of ideology is needed for the upper class to be able to enjoy the fruits of power without too many moral qualms (Eagleton 1991). Today certain aspects of globalization, good governance, development, and economic growth discourses are used for that purpose.

historical revolutions, and 3) the character of wealth and social reality in modern societies.

Dissatisfying Consumption

Evidence is emerging to question the assumption correlating high levels of consumption with improved human well-being. As Bonaiuti points out, a great number of surveys and studies show that after a certain, rather low, threshold is reached, consuming more does not make people more satisfied or happier. For example, despite the fact that personal incomes have quadrupled during the last 50 years in the old industrial countries, subjective well-being has remained essentially the same (Easterlin 1997; Veenhoven 2008; Hansson 2006; Helliwell and Putnam 2004).

Bonaiuti's article does a great deal to explain these results: Much of what people buy are positional goods that do not directly bring any well-being but rather feed an elusive status competition. The result in most cases is frustration instead of satisfaction.

He also elaborates another line of explanation: as the official economy has grown, market relations have taken an ever stronger grip on society to the point that almost all contacts between people are now mediated by commodities. As a result, real social ties have dissolved, weakening social networks and leading to loneliness and decreased well-being.

Yet one can expand on Bonaiuti's explanations: in advertisement and popular culture, commodities are fashioned into symbols not only of social position but of a variety of attributes that are commonly valued (at least at an emotional level) in modern society: strength, beauty, artistry, skillfulness, trustfulness, intelligence, masculinity, femininity, sex, naturalness, and nature experiences, to name a few. Thus, people are manipulated into buying commodities because of the social, cultural, and spiritual meanings and connotations attached to the products, despite the fact that they usually do not satisfy these needs. Or if they do, it is only for a short while, because in the spiral of economic growth, there is always another product that must promise such fulfillment. Yet it's impossible to buy the new things all at once—or (for many people) perhaps ever. The consequence is frustration and dissatisfaction (Leiss 1978; McCracken 1988). As Charles Kettering of General Motors famously stated in the 1920s: "The key to economic prosperity is organized creation of dissatisfaction" (Rifkin 1994).

Really Existed Revolutions

The second assumption is that all historical revolutions have been violent and in most cases, the violence was due to a small fanatic minority imposing the revolution on the rest of the population. This is, however, only one of the possible readings of

the historical record. Another reading is that revolutions as people's uprisings and starting points for the process of building new social structures have often been rather non-violent. Uprisings in many of the bloody revolutions have often happened during a war. Most of the violence in those cases took place after the revolution itself and occurred when forces outside and inside the country tried to restore the old regime. Violence has also erupted as a result of discontent among a part of the revolutionary intelligentsia to the radical democracy created by the revolution. In these cases, they had a preconceived plan of what the society should look like and what stages it should go through. When it was impossible to impose the blueprint in a situation where no person or group had significant power over others, these forces used violence to create new hierarchical and undemocratic structures (Foran 2002; Bookchin 1996; Graeber 2004; Lummis 1996; Tønnesson 1988).

In Cuba, for example, relatively little fighting was needed to overthrow the Batista regime because of the widespread dissatisfaction and massive uprising of the people (Paige 2002). In Russia, only modest violence was required to topple the czar and the following provisional regime, and to start to organize the economy democratically. However, Lenin and many of his Bolshevik comrades were not satisfied with the incipient democratic order. They were "high modernist" admirers of German and American industrialism, especially the policies of Henry Ford and F.W. Taylor, and they used massive violence to move Russia to the next "historically determined" stage, which also happened to involve looting the necessary resources from the countryside (Brinton 1975; Voline 1947; Goldman 1970; Scott 1998).

The collapse of the Soviet Bloc was almost non-violent: neither the grassroots movement that was the immediate cause for the collapse nor the counter-movement from above, which established the new centralized order, used violence in the conventional sense. However, the great majority of the population did experience violence as an indirect result of the counter-movement's actions. The economic austerity measures it imposed caused severe impoverishment of the great majority of the population, which included a huge death toll (Chossudovsky 1997).

Parallel Society

The third hidden assumption that makes major social changes appear impossible is the assumption that the official institutions represent and accurately reflect the aspirations of the public and society as a whole. Society is the state plus the official economy. People are citizens, voters, schoolchildren, students, patients, workers, employees, craftsmen, professionals, entrepreneurs, employers, owners, investors, debtors, and consumers. Or if they cannot be characterized by a positive relation to these institutions, they are defined negatively as minors, disabled, retired, unemployed, poor, misfits, delinquents, criminals, and foreigners. What they are or do additionally is of marginal importance. From this perspective, society is by and large a well-functioning whole, which is possible to change only modestly.

But underneath and parallel to the official structures and roles, there is another unacknowledged world of thought, activity, and social relations. Take these numerous examples: One consumer may curse the market-chain because she must again buy tomatoes from Spain sprayed with poisons and bread full of additives. A well-paid employee may hate his socially irresponsible employer and plan how he could use his inside knowledge to sabotage the company. An unemployed engineer may organize an exchange circle in her neighborhood and feel that for once she is doing something important. An investor may read histories of revolutions and dream about a new social upheaval. A retired teacher may be an active member of a social justice group and learn to appreciate the views of young and radical fellow activists.

It's important to remember that the majority of these various dutiful citizens, workers, and consumers are also mothers and fathers. When their children are small, they produce an enormous amount of work cooking food, cleaning their homes, caring for their children, and providing other essential services in their home, for which they are not paid. Often the only thing preventing them from breaking down under the workload is the help given by informal circles of friends, relatives, neighbors, and peers.

The informal unpaid work done by parents, the unemployed, retired pensioners and other people, as well as the social relations supporting this work, forms a system so extensive that one can speak about an alternative economy existing in the middle of any modern society. Of course, capitalism is exploiting it, as it exploits everything. But this alternative economy is not based on the logic of markets or capitalism, nor is it a planned economy. It resembles the gift economy recorded in many anthropological studies (Mauss 1970; Temple 1988). However, because barter and informal socially embedded market relations also occur in it, it is not a pure gift economy. Maria Mies and other German anthropologists call it the "subsistence" economy. In the global South, this economy is even more important than in the North (Bennholdt-Thomsen and Mies 1999; Bennholdt-Thomsen, Faraclas, and von Werlhof 2001; De Romaña 1989; De Angelis 2007).

Common Wealth

In addition to the subsistence economy, and partly overlapping with it, there is another already existing alternative economy: that based on common wealth created by nature and cultures. Concrete manifestations of material common wealth are, for instance, the air that we breathe, the sun that warms us, the winds that cool us, the very climate we hope to stabilize, the ability of most women to give birth, wild animals and plants, rivers and lakes, oceans, deserts, and a large part of the forested areas, cities and villages, public libraries, schools, hospitals, and cheap public transportation systems. Non-material examples are most of the genetic information and scientific knowledge, open-source software like Linux, local knowledge, folk wisdom and common sense, folklore and a large part of popular and high culture (Lummis 1996; McMurtry 1999; Berkes 1989; Bollier 2002).

Recognizing this not-only-possible but actually existing “other world” is compatible with the general thrust of degrowth thinking. However, conceptualizing this alternative sphere as another economy makes both growth and degrowth discourse intellectually less coherent. What is actually growing or not growing? Obviously not economy as such, but the official economy measured in Gross Domestic Product (GDP). Degrowth may mean that the informal economy would not only thrive but also grow. Yet even though growth of some components of the informal sphere would be relatively easy to measure, measuring others would be practically or conceptually impossible. Finding a common yardstick by which to measure all components would not be feasible. Therefore we can speak of the growth of alternative economy only in the same general sense as in the phrase “spiritual growth.”

We could preserve conceptual rigor by saying that only the official economy measured in GDP is economy in a strict sense. But then most societies that have existed would not have any economy. A better way to grasp the field is to see that the modern official economy is an historical exception—a sphere more or less separated from the rest of society. Economy is usually embedded in other social structures and processes (Polanyi 1944; Graeber 2006). Also, from the very beginning of GDP measurements, their limited scope has been recognized. In 1934, in the introduction to the first national income statistics, the principal inventor of this so-called “national accounting,” Simon Kuznets, wrote:

The volume of services rendered by housewives and other members of the household toward the satisfaction of wants must be imposing indeed, when totaled for the 30 million families comprising the population of this country; and the item is thus large enough to affect materially any estimate of national income . . . It was considered best to omit this large group of services from national income, especially since no reliable basis is available for estimating their value. This omission, unavoidable though it is, lowers the value of national income measurements as indexes of the nation’s productivity in conditions of recent years when the contraction of the market economy was accompanied by an expansion of activity within the family . . . The welfare of a nation can, therefore, scarcely be inferred from a measurement of national income as defined above. (Kuznets 1934.)

Anyway this paradox of degrowth as “growth” makes the renunciation of economic growth political, involving conflict between different classes and groups in society. At the same time, from the perspective of movement building, degrowth becomes more functional. Thus, conceptualized degrowth is not a new form of asceticism but a fight for the thriving of our lives. This fight is in fact going on everywhere.

The informal sphere of the society is not at all of marginal importance: its proper functioning and continuing existence are often a matter of life and death. Therefore,

people are ready to fight if this economy is threatened. These conflicts are widespread because from the official perspective, the informal sector contains only poorly utilized resources that must be brought into productive use. In the fight to defend the informal economy, alternative forms of political organizing and democratic decision-making develop (Abramsky 2001; Graeber 2004).

These conflicts have been widespread in the history of capitalistic economy. The enclosures of jointly used pastures and forests and other commons have created misery among poor people and instigated many movements and revolts. Quite a few of the early representatives of the science of economy recognized the conflict between informal and formal spheres. James Maitland, the eighth Earl of Lauderdale (1759–1839), wrote about this issue in his 1804 book *An Inquiry into the Nature and Origin of Public Wealth and into the Means and Causes of its Increase*. Lauderdale recognized that there is often an inverse relation between public wealth and private riches. Private riches can be accumulated by creating scarcity of a resource, and thus diminishing public wealth. This so-called “Lauderdale’s paradox” was widely discussed in political economy during the 19th century. However, when modern or neoclassical economics was created in the late 1800’s, the paradox was first denied and then forgotten (Foster and Clark 2009).

Social and Subjective Overspill

In both politics and economy, a wide variety of such important activities, social interactions, group formations, and other processes are constantly occurring which are not integrated into the official institutions. Thus, the institutionalization process of the society is incomplete and open, and contains a “social overspill.”⁶ This social overspill makes society more flexible and explains many phenomena, which are not accounted for in the institutional structures.

The same applies on the individual level to subject formation. The subjectivity of a woman or a man acting both in official and informal roles is not a unified, seamless whole, but has many fractures.⁷ To put it differently, the human personality is usually divided to a certain extent, and only in extreme cases is this division pathological.⁸ This inconsistency is compounded by the fact that official institutions are full of internal contradictions, and the dominant ideology is often incapable of containing them. For instance, the official doctrines of states and companies are full of noble principles, the emptiness of which is obvious for many insiders. This “subjective overspill” is partly channeled into unofficial activities, like those mentioned above. But it also partly exists only as dreams and as potentiality for a

⁶This is my own term. In earlier versions of this article I used the term “social surplus” but came to the conclusion that this phrase may mislead the reader.

⁷On the fractured subject in post-structural approaches see (Henriques, Hollway, and Urwin, et al. 1984; Fairclough 1989; Foucault 1972).

⁸Also outside post-structuralism, many philosophers and psychologists have taken seriously the phenomenon of multiple personality (Kvaloy 1992; Braude 1991; Rorty 1988).

future society. Thus even under the polished face of a loyal and diligent worker and citizen, there may be a surprise waiting.

Furthermore, the official social institutions such as states and companies are not static formations but social processes that must be created anew all the time. They are full of internal cleavages and struggles. Workers and employees, on the one hand, and owners and employers, on the other, are often pulling strings in opposite directions and want to get rid of each other (Holloway 2002).

Thus a major social change may be powered by the social and subjective overspill that comes more and more from the background to the fore. The primary front-line between the old order and the new horizon is not the one between “them” and “us.” Instead, it is a change that will divide almost every individual from the inside. From this perspective, the question of violence in major social changes takes on a new light: You have no reason to kill a person if half of him is already on your side and the other half may follow. There is no need to violently impose a revolution on others if most of them are already partly in the social change movement or on the threshold of joining it.

The collapse of the Soviet Bloc is an example of this phenomenon. At least decades before the big change, the society and people were riddled with cleavages between the official and the unofficial. Anyone traveling in these countries usually observed these fractures. Officially a person was a dutiful clerk in a state institution, but in practice he used his time to organize food and other necessities for his relatives or did voluntary work in a cultural heritage association. He was a master in double-thinking. The cleavages found their expression in political jokes circulating everywhere. People worked half-heartedly, and in practice, sabotage was widespread. Accordingly, the economy and political apparatus functioned poorly. When things started to change, one and the other found their oppositional side even among the party elite. Soon the hollowed-out society collapsed.⁹

Another recent case is Argentina, a country resembling those in Western Europe in many respects. In just a few weeks, the economic collapse in 2001 changed countless supporters of middle-class values into activists demanding and making a radical social change. As the official society was stagnating, a new polity and economy began to form on the basis of neighborhood assemblies, occupied factories, and moneyless goods exchanges (Colectivo Situaciones 2003).

Conclusion

To avoid climate catastrophe, humanity must decrease its greenhouse gas emissions very rapidly. This is not possible with technical fixes alone. What is

⁹This is partly based on my own observations. I made about 20 trips to the Soviet Union, Poland, the German Democratic Republic, and their successor states in the years 1986–1996.

defined as production and consumption in the official economy must be drastically reduced. This, however, is not possible within the present social system because it is based on the growth imperative. Therefore, basic social structures must be rapidly changed by social movements. This may be possible because analogous changes have occurred in history without large-scale violence. Social resources and the energy for such an upheaval could be tapped from the social and subjective “overspill” created by the fractured nature of present societies and the corresponding cleavages in human subjectivity. In such a process of social change, abandoning consumer society may turn out to be surprisingly painless, because modern consumption is inherently dissatisfying. Economic growth and the consumption utopia have been used as excuses and surrogates to prevent people from realizing the values of democracy and equity shared by the majority of people. Hence, there is a chance that out of the transformation, in addition to a rescued climate, an equitable economy and a genuinely democratic polity would also emerge.

References

- Abramsky, K., ed., 2001. *Restructuring and resistance: Diverse voices of struggle in Western Europe*. London: Resres Books.
- Allison, N., L. Bindoff, R.A. Bindshadler, et al. 2009. *The Copenhagen diagnosis: Updating the world on the latest climate science*. Sydney: The Univ. of New South Wales Climate Change Research Centre.
- Anderson, K. 2009. Point of no return. *The Independent*. September 21.
- Anderson, K. and A. Bows. 2008. Reframing the climate change challenge in light of post-2000 emission trends. *Philosophical Transactions of the Royal Society A: Mathematical, Physical and Engineering Sciences* 366 (1882): 3863–3882.
- Astyk, S. 2008. A new deal or a war footing? Thinking through our response to climate change. *Casaubon's Book: Sharon Astyk's Ruminations on an Ambiguous Future*. <http://sharonastyk.com/2008/11/11/a-new-deal-or-a-war-footing-thinking-through-our-response-to-climate-change/>.
- Baer, P., T. Athanasiou, and S. Kartha. 2009. A 350 ppm emergency pathway. Greenhouse Development Rights. Stockholm Environment Institute. <http://gdrights.org/2009/10/25/a-350-ppm-emergency-pathway-2/>.
- Barkley, P. and D. Sechler. 1972. *Economic growth and environmental decay: The solution becomes the problem*. New York: Harcourt, Brace, and Jovanovich.
- Bennholdt-Thomsen, V. and M. Mies. 1999. *The subsistence perspective: Beyond the globalized economy*. London: Zed Books.
- Bennholdt-Thomsen, V., N. Faraclas, and C. von Werlthof, eds., 2001. *There is an alternative: Subsistence and world-wide resistance to corporate globalization*. London: Zed Books.
- Berkes, F., ed., 1989. *Common property resources: Ecology and community-based sustainable development*. London: Belhaven.
- Bollier, D. 2002. *Silent theft: The private plunder of our common wealth*. New York: Routledge.
- Bookchin, M. 1996. *The third revolution: Popular movements in the revolutionary era, Vol. I*. London: Cassell.
- Braude, S.E. 1991. *First person plural: Multiple personality and the philosophy of mind*. London: Routledge.
- Brinton, M. 1975. *The Bolsheviks & workers' control 1917 to 1921: The state and counter-revolution*. London & Detroit: Solidarity JA Black & Red.

- Carey, A. 1997. *Taking the risk out of democracy: Corporate propaganda versus freedom and liberty*. Urbana: Univ. of Illinois Press.
- Chomsky, N. 1989. *Necessary illusions: Thought control in democratic societies*. Montréal: CBC Enterprises.
- Chossudovsky, M. 1997. *The globalization of poverty: Impacts of IMF and World Bank reforms*. London: Zed Books.
- Clarke, R. 2010. The 350 ppm carbon dioxide challenge and how to achieve it. *Links—International Journal of Socialist Renewal*. January 1.
- Colectivo Situaciones. 2003. *¡Que se vayan todos!, Krise und Widerstand in Argentinien*. Berlin: Assoziation A. http://www.nadir.org/nadir/initiativ/agn/free/imf/argentina/txt/2002/0918que_se_vayan.htm.
- Daly, H.E. 1980. The steady-state economy: Toward a political economy of biophysical equilibrium and moral growth. In *Economics, ecology, ethics: Essays toward a steady-state economy*, H.E. Daly, ed., 324–335. San Francisco: W.H. Freeman and Company.
- De Angelis, M. 2007. *The beginning of history: Value struggles and global capitalism*. London: Pluto Press.
- De Romaña, A.L. 1989. An emerging alternative to industrial society: The autonomous economy. Part 1: The vernacular/informal sphere vis-à-vis the formal/industrial sector. *Interculture* 22 (3): 79–169.
- Douthwaite, R. 1992. *The growth illusion: How economic growth has enriched the few, impoverished the many, and endangered the planet*. Bideford: Green Books.
- Eagleton, T. 1991. *Ideology: An introduction*. London: Verso.
- Eamer, J., ed., 2007. *Global outlook for ice and snow*. Nairobi: UNEP.
- Easterlin, R. 1997. Will raising the incomes of all increase the happiness of all? *The consumer society*. N.R. Goodwin, F. Ackerman, and D. Kiron, eds. Washington D.C.: Island Press.
- Fairclough, N. 1989. *Language and power*. London: Longman.
- Foran, J., ed., 2002. *The future of revolutions: Rethinking radical change in the age of globalization*. London: Zed Books.
- Foster, J.B., B. Clark, and R. York. 2008. Ecology: The moment of truth—An introduction. *Monthly Review* 60 (3): 1–11.
- Foster, J.B. and B. Clark. 2009. The paradox of wealth: Capitalism and ecological destruction. *Monthly Review* 61 (6). <http://monthlyreview.org/2009/11/01/the-paradox-of-wealth-capitalism-and-ecological-destruction>.
- Foucault, M. 1972. *The archaeology of knowledge and the discourse on language*. New York: Pantheon.
- Goldman, E. 1970. *Living my life, Vol. I-II*. New York: Dover.
- Graeber, D. 2004. *Fragments of an anarchist anthropology*. Chicago: Prickly Paradigm Press.
- . 2006. Turning modes of production inside out. *Critique of Anthropology* 26 (1): 61–85.
- Hansen, J. 2009. *Storms of my grandchildren: The truth about the coming climate catastrophe and our last chance to save humanity*. New York: Bloomsbury.
- Hansen, J., M. Sato, P. Kharecha . 2008. Target atmospheric CO₂: Where should humanity aim? *The Open Atmospheric Science Journal* 2: 217–231.
- Hansson, M. 2006. Economic growth and happiness in the Western world today. Department of sociology, Univ. of Lund. <http://lup.lub.lu.se/luur/download?func=downloadFile&recordOid=1325368&fileOid=1325369>.
- Hawkins, R., C. Hunt, T. Holmes . 2008. *Climate safety*. Machynlleth, Wales: Public Interest Research Centre.
- Helliwell, J.F. and R. Putnam. 2004. The social context of well-being. *Philosophical Transactions of the Royal Society B* 359: 1435–1446.

- Henriques, J., W. Hollway, C. Urwin . 1984. *Changing the subject: Psychology, social regulation and subjectivity*. London: Methuen.
- Holloway, J. 2002. *Change the world without taking power: The meaning of revolution today*. London: Pluto Press.
- Kolset, T. 2010. Decrease in global emissions. *CICERO Environmental News*. August 31. http://www.cicero.uio.no/webnews/index_e.aspx?id=11426.
- Kurz, R. 1999. *Schwarzbuch Kapitalismus: Ein Abgesang auf die Marktwirtschaft*. Frankfurt: Eichborn.
- Kuznets, S. 1934. *National Income: 1929-32 Senate Report. Bureau of Foreign and Domestic Commerce Division of Economic Research, 3-7*. Washington, D.C.: United States Government Printing Office.
- Kvaløy, S. 1992. Complexity and time: Breaking the pyramid's reign. *Wisdom and the open air: The Norwegian roots of deep ecology*. P. Reed & D. Rothenberg, eds. Minnesota: Univ. of Minnesota Press.
- Leiss, W. 1978. *The limits of satisfaction: On needs and commodities*. London: Marion Boyars.
- Lummis, C.D. 1996. *Radical democracy*. Ithaca: Cornell Univ. Press.
- Mauss, M. 1970. *The gift: Forms and functions of exchange in archaic societies*. London: Routledge & Kegan Paul.
- McCracken, G. 1988. *Culture and consumption: New approaches to the symbolic character of consumer goods and activities*. Bloomington: Indiana Univ. Press.
- McGregor, I. 2006. Corporate capitalism: A major barrier to ecologically and socially sustainable development alternatives. *Portal: Journal of Multidisciplinary International Studies* 3 (1). <http://epress.lib.uts.edu.au/ojs/index.php/portal/article/view/123/92>.
- McMurtry, J. 1999. *The cancer stage of capitalism*. London: Pluto Press.
- Meadows, D.H., D.L. Meadows, J. Randers. 1972. *The limits to growth: A report for the Club of Rome's project on the predicament of mankind*. Washington D.C: Island Press.
- Meinshausen, M., N. Meinshausen, and W. Hare. 2009. Greenhouse-gas emission targets for limiting global warming to 2°C. *Nature* 458 (7242): 1158–1162.
- Mishan, E. 1969. *The costs of economic growth*. London: Staples Press.
- Monbiot, G. 2008. One shot left. *The Guardian*. November 25.
- Paige, J.M. 2002. Finding the revolutionary in the revolution: Social science concepts and the future of the revolution. *The future of revolutions: Rethinking radical change in the age of globalization*. J. Foran, ed. London: Zed Books: 19–29.
- Pearce, F. 2009. Meltdown: the Arctic armageddon. *New Scientist* 201 (2701): 32–36.
- Polanyi, K. 1944. *The great transformation: The political and economic origins of our time*. Boston: Beacon.
- Rifkin, J. 1994. Laid off! Computer technologies and re-engineered workplace. *The Ecologist* 24 (5): 182–188.
- Rorty, A. 1988. Self-deception, akrasia, and irrationality. *The multiple self*. J. Elster, ed. Cambridge: Cambridge Univ. Press.
- Scott, J.C. 1998. *Seeing like a state: How certain schemes to improve the human condition have failed*. New Haven: Yale Univ. Press.
- Simms, A. and V. Johnson. 2010. *Growth isn't possible: Why we need a new economic direction*. London: New Economic Foundation.
- Sklair, L. 2002. *Globalization, capitalism & its alternative*. Oxford: Oxford Univ. Press.
- Sulugiuc, G. 2009. Global downturn could halve CO₂ emissions: expert. *Reuters*. March 12.
- Temple, D. 1988. The policy of the “severed flower”: A letter to the Kanak. *Interculture* 98: 10–35.

- Tin, T. 2008. *Climate change: Faster, stronger, sooner, A European update of climate science, An overview of the climate science published since the UN IPCC Fourth Assessment Report*. Brussels: WWF European Policy Office.
- Tønnesson, K. 1988. La démocratie directe sous la révolution Française - La cas des districts et sections de Paris. In *The French revolution and the creation of modern political culture. Vol. 2: The political culture of the French revolution*, C. Lucas, ed., 295–308. Oxford: Pergamon.
- Veenhoven, R. 2008. World database of happiness: Continuous register of scientific research on subjective appreciation of life. Erasmus Univ., Rotterdam. <http://www1.eur.nl/fsw/happiness/>.
- Victor, P. 2008. *Managing without growth: Slower by design, not disaster*. Cheltenham, U.K: Edward Elgar.
- Voline, 1947. *The unknown revolution*. Montréal: Black Rose Books.