Andreas Mayert

From despair to where?

Marx, Ecomarxism and Degrowth

Abstract

In his 200th year of birth, Marx's critique of capitalism has been associated with various current problems. It is therefore interesting to compare Marx's radical critique of capitalism in the 19th-century with contemporary theories that radically question the economic system of the 21st-century. What do they have in common? What contradictions can be found? Is a convergence possible – or is the divisive dominant? The critique of the economic system and society by advocates of degrowth is particularly suitable for such a comparison, not only because of the radical nature of their economic and social concepts, but also because, like Marx in his day, they take the view that the current accumulation of crisis phenomena could soon create the conditions for a complete transformation of society. The present text compares the two lines of criticism with a special attention to the interpretation of Marx in ecomarxism.

<u>Suggested Citation</u>: Mayert, Andreas: "From despair to where? Marx, Ecomarxism and Degrowth", Sozialwissenschaftliches Institut der EKD Working Paper, **October 2018**, Hanover.

<u>Contact</u>: andreas.mayert@si-ekd.de

1. Introduction

If one takes a brief and superficial look, Marxism and the various forms of degrowth theory¹ seem to have much in common. For example, Marx (Marx/Engels 1961, 419-420) already saw the capitalist dynamic as a blind power from which companies could not escape, because the steady and constant competition leads to the continuous expansion and renewal of capital and productive forces:

"We see how the mode of production, the means of production are constantly being revolutionized, how the division of labor results in a greater division of labor, the application of machinery results in an even greater application of machinery, the work on large ladders necessarily results in work on even larger ladders. This is the law that constantly throws bourgeois production out of its old tracks and forces capital to harness the productive forces of labour (...), the law that gives it no rest and constantly whispers: "March! March!"

In the degrowth literature, the process described here would probably be understood under the term "growth imperative". And even if Marx does not use the term "consumption fetish", which is popular

¹ The degrowth literature is so heterogeneous that we cannot really speak of "the" theory of degrowth. However, some contents can be found in so many of their approaches that a certain corpus is recognizable. Starting from these contents and despite the above-mentioned limitations, we will therefore mostly talk about "the" degrowth theory here and dispense with the addition of "different variants". However, certain differences are mentioned at a suitable place.

in degrowth theory, Marx's first volume of Das Kapital (Marx/Engels 1962, 86-87) has something to say about the "commodity fetish":

"In order to find an analogy, therefore, we must flee into the mist region of the religious world. Here the products of the human head seem to be independent creatures gifted with their own life, in relation to each other and to human beings. (...). This is what I call fetishism, which sticks to commodities as soon as they are produced, and which is therefore inseparable from the production of commodities."

Despite all the similarities in the terms used, the two quotations nevertheless already point to differences between Marxism and degrowth. On the one hand, Marx locates the blind power that forces capital accumulation on the production side or sees it grounded in the specific production relations in capitalism, while in degrowth theory consumer demands – mainly those of workers as the proportionately far predominant group of consumers – are assigned a much higher importance. Clive Hamilton (2003, xiv), an early advocate of degrowth, may serve as an example here. He does not identify specific production relations as the motor of growth, but rather a "growth ideology" existing among producers and consumers alike, which the workers are only too happy to join:

"Responding to the lures of the marketers, they choose the gilded cage and would prefer not to be told that the door is open."

Secondly, capital accumulation and economic growth are not synonymous concepts.² And thirdly, the fetish character of goods should not be equated with a fetishization of consumption. For the commodity fetish is to be understood in the context of alienated labor, the lack of reference of the worker to the product of his creation and the reification of the commodities in the process of capitalist production by concealing the conditions of the realization of their exchange value, so that "each, even the simplest element, such as the commodity, is already an inversion and makes relations between persons appear as qualities of things and as relations of persons to the social qualities of these things" (Marx/Engels 1968, 498).

But the contradictions between Marxism and degrowth are not only more far-reaching than was briefly touched on here, they also have their own history of discourse, which began with the intensified perception of ecological problems and the emergence of the environmental movement in the 1970s and continued with the attempts of a rapprochement between "green" and "red" positions through the theory of "ecomarxism" on the one hand and the increasing prominence of growth-critical positions in parts of the environmental movement – but not only there – since the turn of the millennium on the other.

The rifts between parts of the environmental movement and (eco-)Marxists were and are still deep. In Anna Bramwell's (1989, 32) predominantly outstanding history of the "Ecology in the 20th Century", for example, Marx comes off rather badly:

"Marx's argument against nature on the grounds of historical development is, indeed, overwhelmingly subsumed in his resentment of unaltered nature. (...). For when it comes to the question of man's survival on earth, Marx explains that given a choice between nature and man, of course man would come first. No true ecologist would support this belief. Ecologists are not speciesist."

This thirty-year-old critique of Marx's "anthropocentrism" and his historical optimism regarding the possibility of shaping the relationship between nature and man in an increasingly rational and inevitably nature-changing way for the benefit of man's emancipation in socialism (Castree 2000) is accompanied by new points of criticism, e.g. in a text published in 2017 by the best-known German

² Economic growth indicates the percentage increase in the total value of goods and services produced in an economy in one year as end products in relation to the previous year. In this respect, there is no direct link with the percentage increase in accumulated capital compared to the previous year.

degrowth theorist Niko Paech.³ He accuses Marx of being concerned only with overcoming capitalism and not with turning away from the inherently destructive potentials of industrialization (Paech 2017, 42):

"But in many other places (note: in Marx's writings) a productivism shines through that accentuates the domination of nature in the sense of Bacon. There is hardly any doubt that Marx was not interested in overcoming the technical, but rather the institutional and structural features of capitalist production relations. No value is attached to nature itself."

Elsewhere, Paech (2017, 44) criticizes the narrowing of the concept of exploitation to the wage worker and thus joins Hamilton's above-mentioned criticism of the consumerist aspirations of workers:

"Contrary to these predictions (note: Marx' theory of impoverishment in capitalism), technologically induced increases in labour productivity have created immense scope for wage increases. At the same time, sufficient economic growth has not only prevented politically destabilizing unemployment, it has even enabled more and more people to be integrated into the industrial work process. Why isn't the global consumer class that has matured in this way, whose ruinous lifestyle now devours the ecological capacity of several planets, also called "exploitative" from a Marxist point of view?"

Of course, Niko Paech does not represent the mainstream of degrowth theory if one looks beyond Germany's borders. But there are also examples elsewhere that illustrate how advocates of degrowth find it very difficult to deal with Marxism. In the anthology "Degrowth - A Vocabulary for a New Era", published in 2015, in which many of the internationally most prominent advocates of degrowth have contributed thematic articles, Marxism or even socialism do not appear as independent chapters, but capitalism does. The authors of this article (Andreucci/McDonough 2015, 62) explain in captivating honesty why degrowth advocates tend to distance themselves from Marxist theory. It is by no means because they misjudge the probable incompatibility of degrowth and its proposed policies and social reforms with a capitalist economic system, for (ibid.)

"in some form or other most degrowth advocates would concede that there is a fundamental incompatibility between capitalism and degrowth but are reluctant to explicitly position themselves against capitalism."

Three reasons are given why an aggressive confrontation with capitalism is not sought. First, from the point of view of degrowth, the economicist and productivist "imaginations" of society are the main targets of attack for they ultimately form the basis of capitalism. This can only be understood in the sense that these imaginations have produced capitalism, not vice versa, as Marxists assume. Secondly, the heterogeneous approach of degrowth, in which many diverse approaches are to find their equal place, prohibits the preference for a specific (Marxist) approach. And thirdly, many advocates of degrowth are interested in increasing the acceptance of their ideas in society or in finding links to the scientific mainstream, and a decidedly anti-capitalist attitude is not helpful to this interest. As little as this last justification can be reconciled with the pronounced aversion of many degrowth advocates to the scientific "mainstream", it expresses a tendency to pursue strategies that involve the most non-threatening confrontation possible with the prevailing power relations – an approach that must be strictly rejected from a Marxist point of view, especially if it is associated with an openly opportunistic motivation.

What about the ecomarxists? As usual, they are far from a consensus position when it comes to the question of the necessity of foregoing growth, and their attitude to other positions in degrowth theory is also complex. The spectrum of opinions can be determined by a few names, whereby the diversity of the theorists should not be suppressed here. Frederik Blauwhof (2010), Saral Sarkar (2009) and

³ In German-speaking countries, the term post-growth theory ("Postwachstumstheorie") is used for growth-critical theories. In terms of content, however, these theories strongly connect with the international discussion on degrowth and are therefore assigned to the degrowth theory in this paper.

Birgit Mahnkopf (2013) represent a very strong convergence to degrowth - although Blauwhof and Mahnkopf nevertheless argue Marxist, while Sarkar considers his stance incompatible with Marxism and therefore calls himself a socialist. A second direction, usually called the "Rift School", whose outstanding representative is John Bellamy Foster (2000, 2011), considers the transition to a no longer growing or shrinking economy in the industrialized countries to be probably necessary, but criticizes the attitude of degrowth advocates to Marxism - a shrinking economy is, in view of the Rift School, only compatible with a Marxist economic system (Foster 2011). A third direction, on the other hand, denies the necessity of economic stagnation or shrinkage. In a Marxist economic system, it would be necessary to use the technologies that the capitalist system has produced, but with the side effect, as Marx explained, that "it simultaneously undermines the sources of all wealth: the earth and the worker" (Marx/Engels 1962, 530). In a Marxist system this would, in their view, change fundamentally. Reiner Grundmann (1991a, b), Damian White (White et al. 2016) as well as the representatives of the so-called "accelerationism" Nick Srnicek and Alex Williams (2016) can be assigned to this direction.

After this introduction, what is to be noted and focused on in more detail later on? First, there is an argument, beginning with the environmental movement and continued by some advocates of degrowth, that Marx had been thinking anything but ecologically and that it would lead in a completely wrong direction to follow his teachings. It must therefore be examined whether this argument is valid or whether counter-arguments can be found which rehabilitate Marx as an ecological thinker. But even if ecological insights can be found in Marx's work, the second question that necessarily arises is whether Marx's thinking and its interpretation in ecomarxism is compatible with the main contents of degrowth or whether there are contradictions here that are difficult to overcome.

These questions will be examined in the next four chapters. In Chapters 2 and 3, the ecological core critique of Marx is taken up. In Chapters 4 and 5, core contents of degrowth theory are examined. Chapter 6 concludes the discussion.

2. Marx' Prometheanism: Nature-hostile hubris or seriously misunderstood?

2.1 Marx' Prometheanism as a Problem

Marx has never hidden his admiration for the dynamics of capitalism and the technological achievements that accompany it. In the Manifesto of the Communist Party (Marx/Engels 1977, 467), written together with Engels, this attitude is expressed very clearly:

"The bourgeoisie has created more massive and colossal productive forces than all past generations put together in its barely hundred years of class rule. The subjugation of the forces of nature, machinery, the application of chemistry to industry and agriculture, steam navigation, railways, electric telegraphs, the cultivation of entire parts of the world, the navigability of rivers, entire populations stamped out of the ground - what earlier century could have imagined that such forces of production slumbered in the lap of social work?"

_

⁴ John Bellamy Foster and the ecomarxists arguing based on his theories are called "Rift-School" because their starting point is Foster's interpretation of Marx, according to which Marx discovered in the "metabolism" between man and nature a rift caused by capitalist production relations, which is fundamental for ecological destruction both during Marx's lifetime and in the present. Later this argumentation will be discussed in more detail.

As is well known, Marx saw the development of productive forces in capitalism as a precondition for its downfall and the transition to the rule of freely associated workers. Every form of society and therefore also capitalism develops the productive forces under the respective conditions or limitations up to their highest expression and then breaks down because of the generated contradictions or - in other words - because of the increasing incompatibility of the relations of production with the conditions of existence of the respective form of society, which is then followed by a higher form of production in a new form of society (Marx/Engels 1983, 445-446). Capitalism is therefore necessary for the continued social progress as a condition for the development of the hitherto highest form of productive forces. The "development of the productive forces of social work (...) is the historical task and justification of capital" (Marx/Engels 1964, 269).

A critical attitude towards the productive forces that capitalism brought with it cannot be detected in this respect. The fact that Marx, who followed the development of modern agriculture with great interest, was not a friend of backward or outdated forms of economic activity, is demonstrated by his (and Engels') polemic against a work by the nature romanticist George Friedrich Daumer (Marx/Engels 1960, 202):

"Of course, there is no talk of modern natural science, which in conjunction with modern industry is revolutionizing the whole of nature and, in addition to other infantile practices, is also putting an end to people's childish behaviour towards nature. (...). It would be desirable, by the way, that Bavaria's sluggish farming, the soil on which the parsons and the Daumers grow evenly, would finally be ploughed up by modern agriculture and modern machinery."

What is here called "revolutionizing of nature" through the combination of modern natural science with modern industry can also be translated into the mastery of nature through this combination. The fact that Marx regarded man's mastery of nature as both necessary and fundamentally positive is echoed in Marx' "Grundrisse" (Marx/Engels 1983, 602):

"Nature does not build machines, locomotives, railways, telegraphs, spinning machines. They are products of human industry; natural material, transformed into organs of human will over nature (...). They are organs of the human brain created by the human hand; representational power of knowledge. The development of fixed capital indicates the degree to which general social knowledge has become an immediate productive force, and therefore the conditions of the social life process itself have come under the control of the general intellect and have been transformed according to it."

Against the background of these statements it becomes understandable why Marx is criticized by ecologically thinking people as a nature-hostile and progress-affirming productivist. But Marx's view of nature in the interpretation of ecomarxism is not that unambiguous. Two different approaches can be distinguished to reconcile Marx's thinking with ecological thinking – which, admittedly, does not include every form of ecological thinking. Characteristic of the first line is a relativization of Marx's Prometheanism. Characteristic of the second line is an affirmation, but ecomodernistic interpretation of Marx's Prometheanism.

2.2 The relativization of Marx' Prometheanism by the ecomarxist "Rift School"

Let us begin the discussion of the first line of reasoning where it itself usually begins: with Marx's description of the human-nature relationship as a metabolic relationship and human work as the mediator of this metabolism. In the first volume of Das Kapital, Marx defines work this way (Marx/Engels 1962, 192):

"Work is initially a process between man and nature, a process in which man mediates, regulates and controls his metabolism with nature through his own actions."

Metabolism with nature means dependence on nature and therefore requires a structuring of the metabolic relationship that is not detrimental to nature's conditions of existence. This close

relationship is also expressed in a passage from Marx's Economic-Philosophical Manuscripts - and even more clearly (Marx/Engels 1968, 516):

"Nature is the man's inorganic body, namely nature, insofar as it is not itself a human body. Man lives from nature, meaning that nature is his body, with which he must remain in a constant process in order not to die. That man's physical and spiritual life is connected with nature has no other meaning than that nature is connected with itself, for man is a part of nature."

One could already draw the conclusion that Marx by no means spoke in favour of an irresponsible approach to nature. The following quotation from the first volume of Das Kapital (Marx/Engels 1962, 57-58) makes it clear that Marx also ascribes nature an independent value in the production process, contrary to a frequent ecological criticism of Marx's theory of labour value:

"Man can only proceed in his production like nature itself, i.e. only change the forms of the substances. Even more. In this work of forming man is constantly supported by the forces of nature. So work is not the only source of the use value it produces, of material wealth. Work is its father (...) and the earth its mother."

It is obvious, however, that it is only a use value that Marx attributes to nature, not an intrinsic value, but more on this later.

As Kohei Saito (2017, 109) writes, the metabolic relationship with nature is transhistorical: it is necessary in every form of society. Since every form of society differs in the development of productive forces, it also differs in the form of regulation of the metabolism between man and nature. This is where the argumentation of the ecomarxist "Rift School" comes into play. In their view, the specific capitalist production conditions are not compatible with the necessity of a sustainable regulation of the human-nature metabolism; rather, they undermine it (Foster 2000, 155ff.). The point of reference for this argumentation is Marx's criticism of capitalist agriculture, which in its short-term quest for profit fails to secure the long-term fertility of the soil.

Marx's explanation of the "metabolic rift" is, let me say this much for a preliminary warning, somewhat unsavory. The context is the urban-rural antagonism problematized by Marx. In order to sustainably secure the fertility of the soil, it is necessary to continuously supply the soil with the organic nutrients and minerals that are extracted from it in the course of the cultivation and harvesting of agricultural products. In pre-capitalist times, this supply was secured because most of the agricultural products were consumed by the land dwellers and their livestock, excreted and returned to the fields as natural fertiliser. According to Marx, the combination of urbanization and rural exodus in the context of the mechanization of agriculture and the industrialization of cities has destroyed this natural human-nature metabolism. For the products produced in the countryside are now increasingly consumed in the cities and excreted and disposed of in the cesspools. According to the Marxist and (later) USPD politician Karl Kautsky (1903, 102-103), the result of this process is a

"waste of soil fertility, in that the components taken from the soil in the foodstuffs are not returned to it, and in the form of excrements and waste pollute the cities instead of fertilizing the land. (...). Thus, the capitalist application of machinery simultaneously with the overexploitation of human labor develops the overexploitation of the land."

From the point of view of the Rift School (as well as for Kautsky), the emphasis on the capitalist application of machinery is important. Marx's Prometheanism can thus be relativized to the extent that Marx did not unconditionally regarded technological progress and the expansion of productive forces as "good", but only a "rational" application, which is not given in the capitalist system – as the example of agriculture shows. In fact, Marx has in various places stressed the ambivalences of production under capitalist conditions, which might suggest such an interpretation, for example in "The Misery of Philosophy" (Marx/Engels 1977, 97):

"In today's society, in an industry based on individual exchange, production anarchy, the source of so much misery, is at the same time the cause of all progress."

And in the Communist Manifesto it is stated (Marx/Engels 1977, 467):

"The bourgeois production and commerce relations, the bourgeois property relations, the modern bourgeois society, which has conjured up such enormous means of production and commerce, resembles the sorcerer who is no longer able to control the underground forces he conjured up."

When Marx speaks of uncontrollable forces, however, he does not speak of natural forces, but of capitalism's susceptibility to crisis on the one hand, and of the proletariat on the other, which, like the other Marx citations quoted, points to a weak point in the argumentation of the Rift School: The relativization of Marx' Prometheanism is achieved solely by analogies: Can Marx's critique of ecologically unsustainable capitalist agriculture in the 19th century be transferred one-to-one to the entire capitalist system or to the complex production conditions of the modern age? Of course, it is possible to assume that Marx, once he has recognized the connections described above, would also have associated other ecological problems that did not exist at his time - such as climate change caused by the burning of "fossil capital" - with short-term profit maximization in capitalism, but that ultimately remains speculation. In this context, it is also not enough, how Gareth Dale (2012, 444) tries, to refer to Engels and his "Dialectic of Nature", who points much more convincingly than Marx to the pitfalls of nature domination when he writes (Marx/Engels 1975, 452-453):

"But let us not flatter ourselves too much with our human victories over nature. For every such victory it takes revenge on us. Every victory has first and foremost the consequences on which we count, but in the second and third lines it has completely different, unforeseen effects, which all too often cancel out those first consequences. (...). And so we are reminded at every step that we do not dominate nature at all, like a conqueror dominates foreign people, as someone who stands outside nature - but that we belong to it with flesh and blood and brain and stand in its midst, and that our entire dominion over it consists in being able to recognize and correctly apply its laws (...)."

But Engels is not Marx and in his independent works he is not his evangelist either. However, Engels' remarks (Marx/Engels 1975, 453), which directly follow the above passage, point to another possible approach to Marx' Prometheanism which deviates from the interpretation by the Rift School:

"And in fact, every day we learn to understand the laws of nature more correctly and to recognize the closer and more distant consequences of our interventions in the regular course of nature. Especially with the tremendous advances of natural science in this century, we are becoming more and more able to understand and control the more distant natural consequences of at least our most common production processes."

This approach to the control of nature, which presupposes the knowledge of its laws, refers to Francis Bacon, who was criticized by Niko Paech in the above quote. Bacon did not see the control of nature as a kind of ruthless manipulation, but on the contrary as the result of understanding and obeying its laws (Bacon quotes from Malherbe 1996, 97):

"Human knowledge and human power meet in one; for where the cause is not known the effect cannot be produced. Nature to be commanded must be obeyed."

Today we know immensely more about the laws of nature than was known during Marx' and Engels' lifetime. In particular, unlike the two, we know that the continued burning of fossil fuels has catastrophic effects on the world's climate. Engels' hope that this knowledge will lead to natural interventions with greater attention to the side effects, however, cannot be observed outside of Sunday speeches and diaper-soft climate agreements. In the end, is Marx the more realistic ecological thinker of the two when he did not believe that capitalism could deal rationally with the human-nature metabolism, but put the exploitation of nature on an equal footing with the exploitation of the worker?

Accordingly, does it not depend on the state of scientific knowledge about the side-effects of human economic activity or on the technologies used to do so, whether the relationship between man and nature is formed rationally, but actually solely on the specific conditions of production?

The argumentation of the Rift School can basically only be understood as an affirmation of the last question. And its representatives do not see themselves as fundamental enemies of progress either, as Foster (2000, 135) makes clear in a critique of certain forms of "green theory", which is also widespread in degrowth theory:

"This charge of Prometheanism, it is important to understand, carries implicitly within it certain antimodernist (postmodernist or premodernist) assumptions that have become sacrosanct within much of Green Theory. True environmentalism, it would seem, demands nothing less than the rejection of modernity itself."

But this version of ecomarxism does not dare to take another step and thus comes into a certain contradiction with its own relativization of Marx' Prometheanism. As much as the representatives of the Rift School want to prove that Marx approved the productive forces developed in capitalism, but not their application under capitalist production conditions, they are not willing to extend this relativization unreservedly to the present (and future) and the technologies developed in the meantime. And here we see a connection to degrowth theory: merely technological solutions for current environmental problems are rejected (Foster 2012). It goes without saying that the representatives of the Rift School do not mean, like degrowth theorists, that a solution can only consist in a shrinkage of the economy – they refer to the necessity of an end to capitalism as a precondition of a rational economic system. But after abolishing capitalism, economic shrinkage is still likely to be necessary not, however, the "unleashing" of productive forces through rational application of existing technologies (Foster 2013). References to the fact that technologies to prevent catastrophic climate change already exist (Global Commission on the Economy and Climate 2014; Sustainable Development Solution Institution/Institute for Sustainable Development and International Relations 2015), but are used only insufficiently in capitalism despite the overwhelming knowledge about the catastrophic consequences of climate change due to capitalist interests, are interpreted by advocates of the Rift School as unwelcome attempts to secure the status quo or "to exclude the possibility of a society of sustainable human development in line with Marx's conception of socialism" (Foster 2016, 399).

Why? Perhaps it is the not completely unfounded fear that this technological progress, despite all resistance, could in fact lead to capitalism once again tricking its own death and the world revolution having to be postponed into the future for another indefinite period. A similar fear can also be identified in degrowth theory, whose vehement rejection of so-called "techno-fixes" is probably also due to the fact that the functionality of these technologies would make degrowth largely obsolete. But while for degrowth advocates the belief in the impossibility of reconciling economic growth — supplemented by a techno-fix — with the solution of the most catastrophic environmental problems is not only a creed, but a survival necessity of the entire theory, this does not apply in principle to ecomarxism. For a consistent economic reorientation on the basis of already developed technologies would in any case end capitalism as we know it. Andreas Malm (2016, 359) has described this excellently in his book "Fossil Capital":

"We might want to dismantle the fossil fuel landscape as quickly as science tells us we should. For the involved capital, that would be tantamount to an asteroid impact obliterating a whole planet of value, still awaiting its first harvest or ripe for a second or third. (...). «If global warming is to be limited to 2°C in 2100», one study concludes, «huge quantities of installed coal capacity will need to be prematurely retired between 2030 and 2050. Such a vast global write-off of capital would be unprecedented in scale»: talk of transitional demands. Capital has been destroyed before in history, of course — in wars, crises, waves of deindustrialization — but this time it would, rather uniquely, be publicly sentenced to an untimely death."

However, to set technological solutions before the overcoming of capitalism and then wait for its possible demise is out of question for representatives of the Rift School. Nor would it correspond to the orthodox Marxist idea that capitalism has to break down because of its inherent crises. But the consequences of an out-of-control global warming are not a crisis to wait for. For, unlike economic depressions, it may bring about the end of any organized form of society. Are there alternatives?

2.3 Marx' Prometheanism as Ecomodernism

Let's assume without bias that "techno fixes" could indeed work and that massive capitalist interests in a continuation of the fossil economy stand in the way of their application. Then another ecomarxist interpretation of Marx's Prometheanism and his statements on the domination of nature emerges. The sociologist Reiner Grundmann has already worked them out in his almost forgotten book "Marxism and Ecology" (1991a) as well as in a further publication (1991b). For Grundmann, as for Marx, there is no question that people as "tool-making animals" have always changed the environment for their own purposes – not least in order to survive – in capitalism as in any other form of society (Grundmann 1991b, 116):

"How are human beings able to survive in an 'insecure environment'? The answer is: by constructing a second 'nature' around themselves. This artificial, human-made nature is the embodiment of their necessity to fight against nature; it is the solution of the apparent contradiction that they are in and against nature."

In pre-capitalist times, the "first" or largely original nature could torment people with veritable catastrophes - crop failures, epidemics or floods, to name but a few. For thousands of years, people were powerless against these catastrophes. Grundmann argues that Marx was as opposed to human powerlessness in the face of these catastrophes as he was to workers' powerlessness in the face of capitalist production relations. Marx, with Kant, was concerned with leading man out of his self-inflicted immaturity, with the completion of his emancipation, the precondition of which is the overcoming of any form of oppression - be it by nature or by a social class (Grundmann 1991b, 117):

"Marx thought (...) that the more people transform first nature into second nature, the more they would become masters of their fate. And this is the real core and the ultimate source of motivation for Marx's critique. It is the humanist conviction that everything that impinges upon human dignity must be submitted to theoretical criticism and practical obviation. The theme of conscious control over human affairs is thus the Archimedean point from which Marx levels his critique of capitalism (but, also, of earlier modes of production). It is from this point that he derives his normative perspective of what a communist society should look like. In the first place it should be a society that institutionalizes conscious human control over its fate. And it is this that informs his evaluation of former and existing modes of production."

The control of nature by man means the control of the destiny of mankind by institutionalized and conscious control of this destiny. It goes without saying that this control can only be carried out rationally by applying all scientific knowledge. Grundmann (1991b, 114) attributes the fact that "rational control of nature" must sound horrifying to ecological thinkers to a wrong understanding of "rationality":

"My suspicion is that the discourse of ecology has shaped its arguments in a counter-position to economics, and also has taken over a basic flaw of that theory, namely the identification of short-term rationality (as expressed in economic behaviour) with rationality as such."

For this reason the interpretation of "mastery of nature" is also wrong. To explain this, he chooses a convincing comparison: when we speak of someone mastering his musical instrument, we mean that he can play it virtuously and not that he hits it with a hammer. The mastery of nature is to be understood in the same way (Grundmann 1991b, 109):

"Likewise, a society that does not take into account the repercussions of its transformation of nature can hardly be said to dominate nature at all. In this version, the usual meaning is reversed. In the usual meaning, ecological crises are perceived to be a result of this very domination of nature. But here they are seen as its absence."

Grundmann is not a Marxist. His texts, written in 1991, also take account of the fact that socialism had just collapsed, because it had also thoroughly misunderstood the concept of the domination of nature. From his theory, however, he develops a "condition" for whether a society may call itself communist (Grundmann 1991a, 231):

"Since Marx took for granted that history would inevitably lead to a final reconciliation in communist society, he could formulate the relation between productive forces and social institutions as a law-like relation which will lead to communism. If we, basing ourselves on historical evidence, challenge this assumption, we can nevertheless derive the criteria for the superiority of communism from Marx's own framework: only a society which is able to calculate the results of its own work and function fulfils the condition of being a communist society."

From Marx's point of view, it should be clear that this society cannot be one that says goodbye to modernity and its technologies and once again surrenders to a domination by the forces of nature. But it should also be clear that overcoming capitalism alone does not automatically lead to a rational control of nature, as some ecomarxists assume, who want to replace "techno-fixes" with "social-fixes". White et al. (2017, 36) are therefore absolutely right when they criticize the Rift School as follows:

"Socialism is thus evoked as the solution to the planetary crisis, but the concrete contours of an Ecosocialism to come tend to overlook careful analysis of the material potentialities of the present in its insistence of what ought to be done. The real danger that hovers here is that ecosocialists will end up embracing the kind of misanthropic fatalism and end-times ecology that is increasingly influential in many currents of affluent world environmentalisms."

Ecomarxists should therefore, if technological solutions to the most pressing environmental problems are considered possible, instead of relativizing Marx's Prometheanism, adopt it in its true meaning. Let us assume, as unlikely as it may be, that the communist revolution will take place in the near future. In this case, inheriting the fossil economy, denouncing existing technologies for a complete transformation of the energy or mobility sector as bourgeois sham solutions, and focusing on a centrally planned shrinkage of the economy would probably lead to a final state that surpasses the previous "achievements" of socialist experiments in the fields of environmental degradation and impoverishment of the population. This would (again) have nothing to do with an emancipation and liberation of man. Moreover, since the limited time left to avert catastrophic climate change forbids waiting for the collapse of capitalism and then unleashing the existing technologies for the rational control of nature, the only way to a communism that fulfils Grundmann's condition above is to fight now in every conceivable form for an exit from the fossil economy and against the beneficiaries of fossil capital. This may not sound very promising. But how promising is waiting for a world revolution whose revolutionary subjects are nowhere to be seen?

2.4 Interim conclusion

There is only one thing in common between ecomodernist ecomarxism and degrowth theory: fighting against the windmills of the entire capitalist system should be secondary, given the scarcity of time left to avert catastrophic climate change. There are more important and realistic goals that must be achieved beforehand and that, if achieved, will at least end fossil capitalism. Malm (2016, 383) put it perfectly:

"Any argument along the lines of "one solution – revolution" or, less abbreviated, "socialist property relations are necessary to combat climate change" is now untenable. The experiences of the past two centuries indicate that socialism is an excruciatingly condition to achieve; any proposal to build it on

a world scale before 2020 and then start cutting emissions would be not only laughable but reckless. At this moment in time, the purpose of an inquiry into the climate destructivity of capitalist property relations can only be a realistic assessment of the obstacles of the transition. (...). If the temporality of climate change compels revolutionaries to be a little pragmatic, it obliges others to start pondering revolutionary measures."

But the aim of degrowth is not to convince people of the necessity of unleashing existing technologies as a prerequisite for shaping a rational human-nature metabolism, because its advocates consider this to be impossible. From the point of view of an ecomarxism turned towards ecomodernism, degrowth theory is therefore part of the problem, not the solution, since the insistence of its advocates on the necessity of a shrinking economy distracts from more realistic possibilities.

The Rift School and degrowth theory, on the other hand, have more in common: The rejection of purely technological solutions to environmental problems and the advocacy of a shrinking economy. However, it should not be forgotten that Marxism and explicit anti-capitalism are rejected by the majority of degrowth theorists. And for eco-Marxists, overcoming capitalism is the first priority, not one of the many possible forms of society that could emerge after the economic contraction phase has been initiated. In addition, the representatives of the rift school are also principally committed to modernity - a return to traditional forms of society, which many degrowth theorists have in mind (Paech 2017, 45), is certainly not the goal of their project.

3. Marx' anthropocentrism

3.1 Marx' anthropocentrism as a problem

Already in the Marx quotations listed in Chapter 2, indications can be found that he thought anthropocentrically. In the Manifesto of the Communist Party he praises the capitalist transformation of nature in the sense of a "cultivation of whole parts of the world, making rivers navigable", without wasting any thought on the consequences of these interventions on the previously existing nature of these parts of the world. When he speaks of technological achievements - machines, railways, etc. - in the next sentence he states that these are "products of human industry; natural material, transformed into organs of human will over nature". And when he speaks of the fact that not only human labor but also nature is the source of material wealth – "Labor is its father (...) and the earth its mother" – he assigns to nature a pure use value for the production of (human) wealth. His criticism of capitalist agriculture is also purely anthropocentric. He does not regret the decreasing soil fertility for its own sake or considers possible further environmental consequences. Rather, "theft from the soil" is detrimental to agricultural yields and thus detrimental to human society. He also regards the disposal of excrement in cesspools and ultimately rivers less as an environmental problem. Rather, it is economic squandering.

Marx's concept of man as both in nature and against nature does not permit any approach other than anthropocentric. In order to survive, man is dependent on the use of nature – it inevitably has an instrumental character. This double relationship to nature is expressed, for example, in Marx' and Engels' "German Ideology", where it is stated (Marx/Engels 1978, 43) that

"the famous "unity of man with nature" in industry has always existed and has existed differently in each epoch depending on the lesser or greater development of industry, as has man's "struggle" with nature until the development of its productive forces on a proper basis."

For Marx, a distinction between anthropocentrism and ecocentrism makes little sense. A perfect harmony with nature is not attainable; there is always an element of struggle for an indefinite period of time. Nature in its pure form is not created for man; if he wants to survive, he must intervene in it by using technology. Ultimately, this would also be necessary if human beings were to attribute nature an

intrinsic value beyond its utility value (Norton 1987, 219). In case of doubt Marx, as Bramwell (1989, 32) rightly recognized, prefers man to the rest of nature.

As a transhistorical condition, this connection is equally valid for the communist society. This is expressed more than clearly in the "Grundrisse" (Marx/Engels 1983, 395-396):

"In reality, however, when the narrow-minded bourgeois form is stripped off, what is wealth other than the universality of the needs, abilities, pleasures, productive forces, etc. of individuals generated in universal exchange? The full development of human domination over the forces of nature, the so-called forces of nature as well as its own nature?"

The criticism of this position is often sharp. With reference to Marx's description of the earth as the mother of material wealth, Clark (1999, 40) criticizes Marx's "liberated" man as "Oedipal," that is, as a man who desires nature (egoistically) and at the same time is hostile to it:

"Marx's Promethean and Oedipal "man" is a being who is not at home in nature, who does not see the earth as the "household" of ecology. Rather, he is an indomitable spirit who must subjugate nature in his quest for self-realization."

3.2 Marx' anthropocentrism as no problem

But is this accusation justified? In the previous chapter it was worked out that for Marx, mastery of nature means a conscious control of the metabolism between man and nature based on scientific knowledge, not a blind destruction of nature or "robber economy" in the sense of capitalist agriculture. In addition, the question must be asked whether a non-anthropocentric view is possible at all if only man, as the single cultural being on the planet, is in a position to attribute values to nature: Use values and intrinsic values. Foster and Burkett (2016, 45) are therefore right when they write:

"Human consciousness, human capacities, and human needs are irrevocably human-based, and in that sense inescapably "anthropocentric"."

However, they also clarify (ibid.):

"But there is a great deal of difference between an anthropocentrism that promotes clear-cuts for purposes of unconstrained economic expansion, and one that attempts to sustain old-growth-forest ecosystems for the sake of the species within."

Ecological problems arise, as Grundmann (1991b, 113) correctly writes, "only from specific ways of dealing with nature" with a systematically destructive character, not through the presence or absence of abstract value assignments, from which one usually deviates anyway when, to paraphrase Anna Bramwell, the decision between man and the rest of nature is existentially made. It is not an anthropocentric view of nature that causes nature-destroying behavior, but a contradiction between short- and long-term rationality anchored in the incentives of the capitalist economic system. And as was worked out in Chapter 2, one can deduce from Marx' writings that "dealing with nature" in communism can have a different character than under the conditions of capitalist relations of production. Marx' anthropocentrism is beyond question. A nature-hostile or even only indifferent attitude to nature, however, cannot be derived from it.

Representatives of deep ecology will probably not be convinced by these arguments. And Valerie Routley's (1981, 244) fundamental criticism of Marx would still be signed by the majority of ecologically thinking people four decades later - and perhaps even more today than then:

"It would be unfortunate if the attempt to work out an alternative nature ethic for a non-capitalist society had to take the form of revamping Marx and of merely reinterpreting the radically unsatisfactory material he provides. Those who work for an environmentally conscious non-capitalist society need to go beyond Marx and draw on a broader range of philosophical, ethical, and socialist

traditions (including the ethical traditions of some of the "primitive" societies Marxists tend to see as so backward), for Marx's views on nature, and associated central parts of this theory, belong to the past, and are far too close to those which lie at the root of many of our troubles."

But does this also apply to degrowth theory? Since many of its representatives have roots in the environmental movement, one should assume that their view corresponds more to that of Valerie Routley.

3.3 Degrowth theory and anthropocentrism

An analysis of the contents of degrowth theory reveals a surprising result: the problematization of an anthropocentric world view plays virtually no role in this theoretical building. When, for example, Giorgio Kallis et. al. (2015, 4) describe the (many) goals of degrowth, there is also talk of "different relations to the non-human world", but in the rest of the text this topic no longer appears. Rather, it seems to be an example of name and concept dropping that is widespread in degrowth literature. All of the other degrowth goals mentioned by the authors put human beings at the center (ibid.):

"Sharing, simplicity, conviviality, care and the commons are primary significations of what this society might look like. Usually, degrowth is associated with the idea that smaller can be beautiful."

So, it can be concluded, it is above all a question of a better life for mankind, as their enumeration of various social benefits in the degrowth society shows: Unconditional basic income, job guarantee, work-sharing, etc. (ibid., 2). (ibid., 12-13).

Other well-known degrowth theorists are more explicit when it comes to the question of which inhabitants of planet Earth should be at the center of degrowth, e.g. Fourier (2008, 536):

"This emphasis on democratic choice over "imperative" is accompanied by a privileging of human and social values above ecological ones. Whilst degrowth may have to operate within ecological limits, it is strongly anchored in humanist values; and various proponents are at pain to show that their concerns are primarily with human values and social justice rather than ecological values."

Can Niko Paech, the best-known German degrowth theorist, perhaps provide evidence of a non-anthropocentric world view? After all, he accuses Marx (erroneously) of attaching no value whatsoever to nature. But such values cannot be found in his texts either. Let us take the text already quoted at the beginning as an example. Here Paech does indeed address the exploitation of nature and the related dependence of society on so-called "energy slaves" (Paech 2017, 45). What is meant here, however, are not carriage horses or dairy cows, which are forced into service by humans, but the many electronic little helpers which make life easier and increase industrial productivity, but which, with the current energy mix, depend mainly on the combustion of fossil fuels - i.e. the use of inanimate nature. One may call the extraction of non-renewable fossil resources exploitation under consideration of the living conditions of future generations, but an exploitation of nature worthy of protection does not take place here. Negative consequences of this exploitation arise primarily for humans and even if, for example, biodiversity is affected by the side effect of burning fossil resources, Niko Paech does not mention this. Ecocentrism plays no role for him either.

3.4 Interim conclusion

Degrowth theory is fully compatible with Marx's anthropocentrism. Both theoretical approaches are primarily concerned with enabling a better human life now and in the future by changing the economic system. The fact that degrowth theory emphasizes ecological sustainability more explicitly than Marx does not change this. For both Marx's demand for a rational regulation of the man-nature-metabolism and Marx's ecomarxist interpretation - that of the Rift School as well as that of ecomodernist ecomarxism - can be understood, as shown, as demands for more ecological sustainability. There is no

contradiction between these demands and the anthropocentric world view – neither for degrowth nor for ecomarxism.

4. Marx and the limits to growth

4.1 Marx as a growth optimist

The fact that Marx is not suitable as a role model for a growth critic has already been shown by the study of Marx's Prometheanism. Marx's future society should not be one of regression, as he clearly expresses in the third volume of Das Kapital (Marx/Engels 1964, 828):

"As the savage must wrestle with nature to satisfy his needs, to preserve and reproduce his life, so must the civilized, and he must in all forms of society and under all possible modes of production. As it evolves, this realm of natural necessity expands because needs expand; but at the same time, the productive forces that satisfy them expand. Freedom in this area can only consist in the socialized man, the associated producers, rationally regulating his metabolism with nature, bringing it under their communal control, instead of being dominated by it as a blind power; carrying it out with the least effort and under the most worthy and adequate conditions of their human nature. But their always remains a realm of necessity. Beyond it begins the development of human power, which is considered an end in itself, the true realm of freedom, but which can flourish only on that realm of necessity as its basis. The shortening of the working day is the basic condition."

Marx' remarks are particularly interesting in direct comparison with the degrowth theory. While the latter is about reducing human needs to a socially and environmentally acceptable level – on a voluntary basis or simply through coercion (Paech 2017, 46) – Marx sees the growth of human needs in the context of increasing human emancipation as natural. These needs are met by the expansion of productive forces, so they are not just - as one might argue - cultural, aesthetic or social needs. A permissible relativization, however, is that Marx could not have known anything about our current mass consumption of digital gadgets, SUVs or air conditioners. Yet we find no criticism in his remarks of the growth of needs and the compatible growth of productive forces.

The second interesting point is that work in the "realm of necessity" is to be done with the least human effort, which ultimately means that Marx was not a critic of automation unless it is used to force workers into unworthy and disqualifying work or undermines union power. His demand for a shortening of the working day must be seen in this context and is therefore not identical with the demand for a radical reduction of working hours in the formal sector (Kallis et al. 2013), which is also often voiced in degrowth theory. In degrowth theory, the shortening of regular working hours is usually associated with an expansion of "homeworking" and social work, e.g. agricultural activity in one's own garden or in communal gardens, the repair of useful goods to prolong their lifespan, or care work (Deriu 2015). In addition, the general reduction in working hours is supposed to be a direct instrument for shrinking economic output in the formal sector (Victor 2008). Marx does not have such ideas. Rather, people should be relieved of as much laborious work as possible through automation. In other words, exactly what Niko Paech calls energy slaves and believes to have identified as the cause of an unrestricted growth of human access to nature (Paech 2017, 45) should increase Marx's human freedom. Ingo Pies (2005, 14) sums it up:

"For Marx, freedom and leisure belong together constitutively. One could put it in a formulaic way: He is concerned with freedom through leisure - with the possibility of individual self-realization in a social context of social production that frees each individual from the compulsion to work and opens up a broad spectrum of (leisure) activities in which the individual can experience himself as an end in itself."

The idea that the shortening of the working day is linked to having to plant potatoes in one's own garden for self-sufficiency would probably have been an atrocity for Marx, especially since it was not unusual at his time for workers to be able to secure their nourishment only through such practices because of low wages.

Since the communist society that Marx had in mind should be characterized by a steady expansion of productive forces, Marx was interested in refuting the pessimistic theories of political economists that prevailed during his lifetime, first and foremost those of Thomas Malthus and David Ricardo. As Saito (2017, 179ff.) has shown on the basis of Marx' notes, his interest in the natural sciences was primarily linked to this motivation. Thus, according to Saito (2017, 146), Marx informed Engels in a letter why the law of the declining marginal product (in relation to agricultural production) must be refuted:

"He (note: Marx) is worried that if Ricardo's presupposition is correct, the future socialist society would be threatened by the problem of insufficient means of subsistence forever, and Malthus's theory of overpopulation would prove correct."

In fact, Marx found enough material in the research results of Justus van Liebig and others to theoretically refute the inevitability of a declining marginal product in agriculture (Saito 2017, 141ff.). Modern agriculture was able to eliminate the fear of increasingly infertile soils – hence his advocacy of modern arable farming methods, which was expressed in the above-mentioned polemic against the nature romanticist George Friedrich Daumer. He was right on this point, even if - contrary to what he thought - it had been the interests of the capitalists that revolutionized agriculture.

Finally, one could hypothesize - albeit highly speculatively - whether Marx's ideas about the future communist society are reconcilable with the idea of a steady-state economy in the sense of Daly/Farley (2004). An expansion of productive forces with a simultaneous reduction in working hours would be in principle compatible with these ideas. With more efficient production, the productive forces that are growing to meet increasing needs need not be associated with a higher consumption of resources. But a stationary state would not be compatible with Marx's image of the human being as a crafting, creative individual who not only constantly develops new needs when the old ones are reached, but also actively seeks ways to satisfy those needs. It is not in the nature of this person to be satisfied with the existing. Sufficiency is not an option for him.

4.2 Marx's Growth Optimism and the Conditions of the 21st Century

There are some similarities between possible criticisms of Marx's growth optimism and his Prometheanism. Finally, both cases deal with the question of the legitimacy of man's unrestricted control of nature. While this question can be discussed from a purely ethical point of view, the inclusion of economic growth adds a further element that can ultimately only be discussed on the basis of facts: Can nature, as Marx apparently assumes, be controlled "rationally" at all under the conditions of unleashed productive forces? Are there no limits to this control, whose lines are drawn by the finiteness of non-renewable resources and the - if one wants to avoid destructive side effects - also only limited usability of the earth and its atmosphere as a sink for pollutants and greenhouse gases?

However, even if the answer to the questions of the limits of control over nature or the limits of growth must be based on facts, it is unfortunately not the case that they are undisputed in their entirety. There are, of course, certain facts that have been established or that are only disputed by lobbyists and conspiracy theorists. There is clear scientific evidence of how greenhouse gas emissions are linked to global warming. Moreover, global climate models provide a fairly accurate picture of the global warming that can be expected at certain concentrations of greenhouse gases in the atmosphere and how limited the budget of greenhouse gases is that is allowed to enter the atmosphere at all if future disasters are to be prevented (IPCC 2015). It is far less known how many non-renewable resources are still available. However, one thing is certain: the remaining reserves of fossil fuels are so large that a

climate catastrophe can only be averted if most of them remain in the soil (Hepburn et al. 2014, 81). The question of the scarcity of resources is therefore at present not decisive.

Unfortunately, most of the uncertainty is about whether and how fast a decarbonisation of the (world) economy is possible. When it comes to the current question of whether there are natural limits to growth or whether growth should be actively limited, this question should be the focus, even if not everyone sees it that way (Mahnkopf 2013; Kerschner 2015).

Marx, like his contemporaries, could not know anything about this question. It therefore makes little sense to criticize him on this basis. But that does not change the fact that his uncritical notion of productive forces in socialism that grow with human needs, as utopian as it was anyway, might not be completely outdated. This applies in any case if the question of the possibility of a sufficiently rapid decarbonisation must be answered in the negative. We know from countless publications of degrowth advocates that they formulate a clear "no" as an answer to this question. What do ecomarxists think?

Let's start with the techno-pessimists. For Saral Sarkar (2009, 167), a decarbonization of energy supply is technologically possible, but not practicable for economic reasons. He gives two reasons for this. Firstly, the application of the CCS technology (Carbon Dioxide Capture and Storage) would require such a large amount of energy (produced with fossil fuels) that emissions would increase on a net basis. But since the energy used could of course also be solar energy, he cites as a second argument that solar energy would be too expensive and could only survive in the market through massive subsidies. That would be fatal, because (ibid.):

"These subsidies come from the economy at large, which – as is well known – draws most of its energy from CO2-spewing fossil fuels, exactly that which is to be replaced with solar energy."

These arguments are, I am afraid to say, quite nonsense. If energy production were to switch completely to mainly solar and wind energy, which Sarkar considers to be technically possible, CCS technology would no longer be necessary at all. Even the subsidies that are diverted from the economic value added would no longer come from a fossil economy if we switched to renewables. And even if they are diverted from a "fossil economy" for a transitional period, as is currently still the case, this does not necessarily mean an increase in energy consumption and emissions. The funds made available for subsidies can be associated with savings elsewhere - for example with a reduction in subsidies which are currently still flowing in large quantities into the fossil economy (Greenpeace 2017).

However, Sarkar is also wrong about another, much more important point. The times when solar and wind energy had to be subsidised will be over in the very near future, as a recent study by the International Renewable Energy Agency (IRENA 2018) shows. The cost reductions for solar and wind energy are enormous, based on constantly improved technology. The electricity production costs of photovoltaics fell by 73% between 2010 and 2017 alone and the costs per kilowatt hour (2017: 0.10 US dollars) are already in the range of the cheapest fossil energy sources. At 0.06 US dollars per kilowatt hour, onshore wind energy is even cheaper, as is hydroelectric energy. At 0.14 US dollars per kilowatt hour, the electricity production costs of offshore wind are slightly higher, but a significant drop in prices can be expected in the coming years due to a new generation of high-performance turbines (IRENA 2018, 17). The IRENA study therefore comes to this conclusion (IRENA 2018, 19):

"Electricity from renewables will soon be consistently cheaper than from fossil fuels. By 2020, all the power generation technologies that are now in commercial use will fall within the fossil fuel-fired cost range, with most at the lower end or even undercutting fossil fuels."

From Sarkar's point of view, of course, this is not acceptable. In support of his pessimistic view, he cites Fritz Vahrenholt, a German denier of a climate change caused by greenhouse gas emissions and presents him in a breathtaking distortion of the facts as the former "great advocate of renewable energies", who has now changed his mind (Sarkar 2009, 171). One can doubt the timely conversion of

the energy system to solar and wind energy, but Sarkar's arguments are at best wrong and at worst deliberately misleading.

Schmelzer and Passadakis (2011), theorists of the German attac movement, attribute the impossibility of a "green capitalism" to the rebound effect. Accordingly, the focus of their interest is not on the way energy is generated, but on energy efficiency and thus on the use of energy. Their rhetorical question in this context is (Schmelzer/Passadakis 2011, 37):

"To what extent would carbon efficiency have to increase in such a way that the necessary reduction (note: of emissions) is possible with simultaneous growth?"

With an unchanged energy mix, this is indeed an interesting question. But they do not realize that this is not the crucial question. Carbon efficiency is completely uninteresting when switching to solar and wind energy. And if these forms of energy production become cheaper and cheaper because of advances in efficiency, then the associated rebound effect - namely their significantly increasing use - is exactly what is to be achieved. It is astonishing that the two authors justify what they consider to be a compelling necessity to shrink the economies of the industrialised countries by at least one third (Schmelzer/Passadakis 2011, 71) with such an uninformed argumentation, but at least they refrain from quoting windy studies by climate deniers to support it.

John Bellamy Foster (2013) is also a techno-pessimist, but he argues in a much more differentiated (and informed) way. First of all, he acknowledges the great progress that has been made, especially in the field of photovoltaics (ibid.):

"No less remarkable technological developments, however, have arisen at the same time in relation to renewable energies, such as wind and solar, opening up the possibility of a more ecological path of development. Since 2009 solar (photovoltaic) module prices have fallen off a cliff."

He nevertheless excludes a purely technological path to a sustainable society, because (ibid.):

"Although a rapid shift to renewables is a crucial component of any conceivable path to a carbon-free ecological world (note: that would be deadly, wouldn't it?), the technical obstacles to such a transition are much greater than is usually assumed. The biggest barrier is the up-front cost of building an entirely new energy infrastructure geared to renewables rather than relying on the existing fossil-fuel infrastructure. Construction of a new energy infrastructure requires vast amounts of energy consumption, and would lead – if current consumption and economic growth were not to be reduced – to further demands on existing fossil-fuel resources."

The reference to the high energy costs that would be incurred in the production of a new energy infrastructure is correct. Foster, however, forgets to mention that coal-fired power plants with similar upfront costs are still being built. According to the report "Boom and Bust 2018 - Tracking the Global Coal Plant Pipeline" published by Coalswarm, the Sierra Club and Greenpeace (2018), the coal-fired power plants currently in existence worldwide are capable of emitting an additional 177 gigatons of CO2, assuming a lifespan of 40 years. The coal-fired power plants currently planned or under construction will add a further 57 gigatons of CO2 (Coalswarm et al. 2018, 6). It is therefore not worth complaining about the upfront costs of switching to renewable energy sources if investments in coal-fired power plants continue at the same time.

Moreover, Foster argues here purely theoretically. He would actually have to prove that the construction of an energy infrastructure based purely on renewable energy sources causes greenhouse gas emissions which - since the energy capacity is also growing increasingly as a result of this construction – exceed falling greenhouse gas emissions by the neglected construction of new coal-fired power plants and the dismantling of old coal-fired power plants to such an extent in net terms that a restriction of global warming to a maximum of 2oC is no longer possible. And that is highly unlikely.

The annual Lazard Report measures the costs of various forms of power generation using the Levelized Cost of Energy (LCOE) approach. This includes all costs incurred over the lifetime of the various power generation plants, including upfront costs. The conclusion of the current Lazard Report is (Lazard 2017, 1):

"Global LCOE values for Alternative Energy technologies continue to decline, reflecting, among other things: (a) downward pressure on financing costs as a result of continuously evolving, and growing pools of capital being allocated to Alternative Energy; (b) declining capital expenditures per project resulting from decreased equipment costs (...). As LCOE values for Alternative Energy technologies continue to decline, they are, in some scenarios, at or below the marginal cost of certain conventional generation technologies (e.g., coal and nuclear, which can have variable and fuel costs that are significant on a \$/MWh basis)."

In summary, it can be concluded that the arguments of the techno-pessimists are not very convincing and therefore - returning to Marx - so far nothing speaks against his utopia of a communist society with increasing needs and productive forces.

But unfortunately, things are not that simple, as the fundamentally techno-optimistic Andreas Malm (2016) shows. The fact that the conversion of the world energy system to renewable resources is taking place far too slowly is less due to the costs of renewables - which, as he also shows, have fallen dramatically (Malm 2016, 367f.). There are much more serious obstacles. The first obstacle to restructuring are the enormous sunk costs of the "fossil economy", as reflected in power plants, oil platforms, mines, etc., and the capital valorization interests of their owners (ibid., 358f.). The second obstacle are the enormous fossil resources still slumbering in the ground and - once again - the capital valorization interest of their owners (ibid., 361).

The third obstacle is that large projects, such as the failed Desertec project, have enormous potential, but because of the enormous costs involved in this case, they can only be financed through cooperation with large capital providers, for which there is no willingness (ibid, 376f.). "There was no plan in place to hold together the atoms of capital", as Malm (2016, 377) writes. For the capital valorization interests of energy companies, the simpler and less risky way is to own their own (fossil-energy-using) power plants instead of entering into a cooperation that involves shared control over capital and profits. A fourth obstacle is the expansion of electricity grids, which is not only costly for states, but is increasingly no longer in their own hands in the wake of neoliberal "reforms" (ibid., 381):

"But grids and utilities across the world are now undergoing privatisation. Once they end up behind the fences of private property, a public authority cannot simply enjoin them to switch to the flow – unless it trespasses onto that property." 5

How can these problems be solved? For Malm certainly not by waiting for the great environmental crisis of capitalism and a subsequent revolution. And neither by a fight against capitalism as an abstract power complex. Only a fight against fossil capitalism and its beneficiaries is necessary. Malm refers to a quotation by Walter Benjamin (2010, 153):

"Marx says the revolutions are the locomotives of world history. But perhaps things are completely different Perhaps revolutions are the grip of the human race traveling on this train for the emergency brake."

The grip for the emergency brake should not be interpreted as a voluntary cessation of growth or even progress by the human race. On the contrary, and in accordance with Marx, it is not a matter of ending

⁵ Malm uses the term "flow" to describe water, wind and solar energy, i.e. energy sources that do not have to be extracted but can flow freely and be tapped. Coal, oil and natural gas, on the other hand, are referred to as "stock".

progress, but of making it possible; without reaching for the emergency brake, the train and the human race travelling in it runs directly against a wall.

4.3 Interim conclusion

Marx's optimism about the possibility of progress - especially with regard to productive forces - and his idea of the society under communism are not compatible with degrowth. However, it can be discussed whether Marx's utopia is not obsolete against the background of current environmental problems and climate change in particular. "Forget Marx" Hans Immler (2011, 9) prefixed a polemic about Marx's approach to the "natural question" (and other questions). Instead, he recommends reading the natural philosopher Schelling - you can't insult Marx any deeper.

But does Marxist theory really fail on the growth question? For degrowth, the matter is clear: economic growth is not compatible with sustainability and especially with the prevention of a climate catastrophe, completely independent of the economic system. Technological solutions have not worked sufficiently so far and will not work sufficiently in the future, also completely independent of the economic system. Some ecomarxists or socialists agree with this analysis, sometimes even with the same arguments used in degrowth theory. Sarkar has therefore said goodbye to Marxism. With Foster (2000, 2013) things are different because he tries to rehabilitate Marx as an ecological thinker. Accordingly, his Marx is not a productivist, and Marxism is therefore not incapable of speaking out on the question of limiting growth, if that is necessary. Malm (2016) chooses a different path. For him, growth is destructive if it is growth based on the fossil economy, which is perpetuated ruthlessly out of the capital valorization interests and profit striving of the owners of fossil resources and the energy infrastructure, even if this path is a deadly impasse for mankind. He can refer to Marx without giving him deep ecological insights (Marx/Engels 1964, 260):

"Capitalist production constantly strives to overcome its inherent barriers, but it only overcomes them by means that confront them anew and on a larger scale. The true barrier of capitalist production is capital itself (...)."

Malm has the better arguments on his side. The technological feasibility of a complete abandonment of fossil capitalism is now beyond question. Its economic feasibility will become easier with every further advance in efficiency and every further reduction in the costs of renewables, even more so, it is already simple today. It fails because of the interests of the beneficiaries of fossil capitalism, who have so far overcome every resource barrier by discovering and extracting new resources on a global scale and by developing new extraction technologies, while at the same time the problem of global warming is piling up higher and higher and the time required for reversing it is shrinking more and more. These beneficiaries and not the entire capitalist superstructure are to be attacked with the aim of ending fossil capitalism.

Whether or not the whole capitalistic system must be overcome is of secondary importance due to the urgency of a rapid and far-reaching decarbonisation of the economy. The growth of fossil capitalism must be stopped, not economic growth in general. This view is not compatible with degrowth. Not only because it rejects technological solutions, but also because it rejects politically combative solutions. Its points of attack are not the beneficiaries of fossil capitalism and its influence on politics. Their criticism is mainly directed at the life plans and claims of ordinary citizens in Western societies or - to put it another way - at the alleged beneficiaries of fossil capitalism at the supermarket cash registers.

5. Marxism, degrowth and the criticism of consumer behaviour

5.1 Marx's attitude to consumer needs

It is obvious that Marx could not be a critic of consumer behaviour according to today's understanding. In the 19th century, the vast majority of the population in the industrial cities and in rural areas lived in a state of forced sufficiency, if at all. A mass consumer society was not even conceivable at his time because it would have required an increase in earned income that (not only) Marx considered impossible (Marx/Engels 1962, 542):

"The value of labour is determined by the value of the habitually necessary foodstuffs of the average worker. The mass of these foodstuffs, although their form may change, is given in a certain epoch of a certain society and should therefore be treated as a constant quantity. What changes is the value of this mass."

When Marx writes about the consumption of the worker, it is correspondingly subsistence consumption, and this serves mainly the reproduction of his labor force and thus ultimately the capitalists (ibid, 597):

"When the capitalist converts a part of his capital into labour, he thereby valorizes his total capital. He kills two birds with one stone. He profits not only from what he receives from the worker, but also from what he gives him. The capital sold in exchange for labor is transformed into food whose consumption serves to reproduce the muscles, nerves, bones, brains of existing workers and to produce new workers. Within the limits of what is absolutely necessary, therefore, the individual consumption of the working class is the retransformation of the food sold by capital for labour power into labour power that can be exploited again by capital. It is the production and reproduction of the most indispensable means of production for the capitalist, the worker himself. (...). It does not matter that the worker carries out his individual consumption for himself and not for the sake of the capitalist. In this way, the consumption of a pack animal is no less a necessary moment of the production process if the pack animal enjoys what it eats."

A workers' consumption that serves purposes other than reproduction is, from Marx's point of view, unproductive consumption for the capitalist. Therefore, capitalists are not interested in wage increases unless they are absolutely necessary for the reproduction of the worker - who in their view is no more than a living machine (ibid., 598):

"If the accumulation of capital would cause an increase of the the wage and therefore an increase in the means of consumption of the worker without consumption of more labour by capital, the additional capital would be consumed unproductively."

However, since the capitalist class with completely different consumer demands exists alongside the workers, Marx distinguishes between "naturally necessary" consumption and luxury consumption. Interestingly, he regards as "necessary" not only the actually vital consumption of the workers, but also consumption which is the result of habits or customs, such as the consumption of tobacco. If, from the point of view of the capitalists, workers are no more than living machines, this of course does not apply from the point of view of the workers themselves. Life does not only mean food intake, also a certain degree of enjoyment is necessary for the reproduction of the worker, if he – from today's point of view – shall not burn out.

True luxury consumption, however, Marx locates above all among the capitalists. It is all consumption that does not serve reproduction. But luxury consumption is not completely excluded for workers either (Marx/Engels 1963, 340):

"As a result of rising wages, the demand of workers for necessary food products will grow. To a lesser extent, their demand for luxury goods will increase or demand will arise for goods that were previously not part of their consumption."

However, he takes a critical view of the described demand for luxury articles only when a numerically small capitalist class and members of the "*middle classes between worker and capitalist*" (Marx/Engels 1967, 563) further develop their consumer needs in this form. Otherwise, a steady expansion of consumer needs is an expression of social wealth or - even more - can be equated with social wealth (Marx/Engels 1983, 433).

"The more the needs historically created by production itself, the social needs (...) are considered necessary, the higher the real wealth is developed. From a material point of view, wealth consists only in the multiplicity of needs".

For Marx it is therefore a completely wrong path if workers who receive a wage that is higher than necessary to cover their basic needs, behave thriftily or - from today's point of view - continue to pursue a sufficient lifestyle. And already in his time, not only the not-so-economical spending behavior of the workers was criticized by the culturally more privileged, but also the nature of the goods they consumed. Moralizing consumer critique directed at worker-consumers obviously has a long history (Marx/Engels 1963, 510-511):

"By the way: Mr. Capitalist, like his press, is often dissatisfied with the way the wage workers spend their money (...). On this occasion he philosophises, chats about culture and philanthropises like, for example, (...) this newspaper article, which says, among other things: "In culture the workers have not kept pace with the progress of invention; they have become accessible to masses of objects which they do not know how to use (...). The question is still how to raise them higher as consumers through a rational and healthy process; not an easy question, since their whole ambition does not go beyond a shortening of their working hours, and demagogues encourage them to do so much more than to elevate their situation by improving their spiritual and moral capacities."

On the other hand, Marx has not missed the absurdity of these accusations in a circular economy. For the thrift of the workers would ultimately lead to an overproduction crisis (Marx/Engels 1983, 212-213):

"By the way (...) every capitalist demands that his workers should save, but only his, because they are facing him as workers; by no means the rest of the workers' world, because they are facing him as consumers. Despite all 'pious' sayings he therefore seeks out all means to spur them on to consumption, to give new stimuli to his goods, to wheedle new needs to them, etc. It is precisely this side of the relationship between capital and labor that is an essential moment of civilization and on which the historical justification, but also the present power of capital, is based."

This quotation is also interesting with regard to degrowth. Marx speaks here, on the one hand, of needs that are enticed upon workers, which one would call advertising today, but, on the other hand, he also sees in this an essential moment of civilization that supports the historical justification of capitalism (in addition to the expansion of productive forces). No matter how much the needs may be enticed, the expansion of the needs also increases the difference of the worker to the purely reproducing component of the capitalist machinery. The expansion of consumer needs is at the same time an expression of the increasing emancipation of human beings. And yet this does not change the fundamentally exploitative character of capitalism (Marx/Engels 1962, 641):

"Since in each year more workers are employed than in the preceding year, sooner or later the point must come where the needs of accumulation begin to grow beyond the usual supply of labor, that is, where wage increases begin. (...). However, the more or less favourable circumstances in which the wage earners sustain themselves and reproduce do not change the basic character of capitalist production."

As shown, Marx is not opposed to the workers' luxury consumption, which is possible within limits, for he prefers it to thriftiness. What about the luxury consumption of the capitalists, is there a kind of critique of consumption to be discovered here? In fact, many years before Thorstein Veblen (1958)⁶, Marx developed the concept of status consumption in connection with the consumption of the capitalists, which is a social necessity for them but does not contribute to a better life (Marx/Engels 1962, 620):

"At a certain level of development, an ordinary degree of squandering, which is at the same time a display of riches and therefore a means of credit, becomes a business necessity of the 'unhappy' capitalist. Luxury is included in the representation costs of capital".

Marx thus did not despise luxury consumption or enjoyment per se, but rather, on the one hand, luxury consumption that does not serve to satisfy needs (and that is for this reason alone wasteful) in the form of a pure display of richness and, on the other, the idea that the lifestyle of the privileged class should set an example to the rest of society, whether in the form of its (supposedly higher cultural) pleasures or in the form of a twisting of involuntary asceticism into pleasure. (Marx/Engels 1978, 402):

"The philosophy of pleasure has never been anything but the witty language of certain social circles privileged to enjoy. Apart from the fact that the way and content of its enjoyment was always conditioned by the whole form of the rest of society and suffered from all its contradictions, this philosophy became a pure phrase as soon as it claimed a general character and proclaimed itself as the philosophy of life of society as a whole. Here it sank down to the edifying sermon of morality, to the sophistic embellishment of the existing society, or it turned into its opposite by declaring involuntary asceticism a pleasure."

But what should consumption look like in the new society of communism? First of all, capitalism should create the preconditions for general wealth - understood as the wealth of needs – which can be satisfied by the productive forces developed in capitalism. The historical task of capitalism is fulfilled if the general needs have grown beyond what is purely necessary, i.e. if they include not only the necessities but also the luxury needs (Marx/Engels 1983, 244):

"The great historical merit of capital is to create this surplus work, superfluous work from the standpoint of mere use value (...), and its historical destiny is fulfilled as soon as, on the one hand, the needs are developed to such an extent that surplus work is itself a general need beyond what is necessary, emerging from the individual needs themselves. (...). As the restless pursuit of the general form of wealth (i.e. money), capital drives labor beyond the limits of its natural needs and thus creates the material elements for the development of rich individuality, which is just as versatile in its production as in its consumption (...)."

From this point on, what Marx states in his criticism of the Gotha program applies (Marx/Engels 1987, 21):

"In a higher phase of communist society, after the oppressive subordination of the individuals to the division of work has disappeared and with it also the opposition of mental and physical work; after work has become not only a means to life, but even the first need in life; after with the versatile development of the individuals also their productive forces have grown and all fountains of cooperative wealth flow fuller - only then can the narrow bourgeois legal horizon be completely crossed and society write on its banner: Everyone according to his abilities, everyone according to his needs!"

The last sentence reveals why Marx has assigned such a positive role to the development of productive forces in capitalism. For it is only through them that social wealth reaches an extent that makes a future society based on solidarity possible. Despite the reference to the springy sources of cooperative

-

⁶ Veblen's "The Theory of the Leisure Class" was originally published in 1899.

wealth, it is not a wasteful affluent society, but a society that ensures the satisfaction of the needs of all. Needs which, as has already been discussed, grow with the extent of social wealth and define it in a certain way. There is no consumer criticism to be found in this and it would have been absurd against the background of the living conditions of the working class during Marx's lifetime.

5.2. Degrowth and the criticism of consumer behaviour

Marx could not know how the interdependent relationship of production and consumption, which he had recognized, would over the decades produce a fragile coalition in the class conflict through the increasing power of the worker unions on the one hand and the interest of the capitalist class in pacifying the class struggle and selling its products on the other. Over time, workers' incomes grew far beyond what was necessary for reproduction. In the 20th century the age of mass consumption began and, in step with it, the workers' hunger for a revolutionary transformation of society diminished. One might call what evolved especially after the Second World War a collaboration of the workers' movement with capitalism or simply a struggle for better living conditions. In any case, the result was that workers appropriated a larger slice of the cake of capitalist value creation and could afford more and more of what Marx called luxury consumption.

And because workers developed different needs than those of the still ruling classes, criticism of their consumption decisions also took on the form already described by Marx. Workers' consumption was seen as "somehow not right," and the accusation that the worker-consumer was incapable of a consumer behavior that entailed an "improvement in his intellectual and moral abilities" also occurred in a new form. The fact that this accusation was no longer made solely by the capitalists, but also by the academic political "left", would hardly come as a surprise to Marx, since he also counted them among the bourgeoisie. Above all, the "Critical Theory" abhorred mass consumption, and from today's point of view its reasons demonstrate how deeply and narrowly it adhered to its bourgeois habitus. For example, as early as in 1938 Theodor W. Adorno published an article with the self-explanatory title "On the fetish character of music and the regression of hearing" in which he went to court with popular music. Andreas Wirsching (2009, 174) accurately describes this development:

"Such a deeply skeptical attitude towards the emerging, audiovisually intensified consumer society was characteristic of the vast majority of Western intellectuals in post-war Europe. Thus Marxist-inspired critique always denied the possibility of gaining authentic individuality in the manipulatively glittering illusory world of capitalist consumer society. The standardization of "needs" corresponded to the standardization of "products". In this way, of course, the "leftist" critique had certain points of contact with the established traditions of bourgeois-liberal and conservative cultural critique. In fact, a surprisingly broad field of overlapping (...) opens up here."

This broad field of overlapping has not changed since then and is also characteristic of degrowth. As is well known, its advocates range from the far left to the far right. Criticism of consumption is not only one of the many contents of degrowth, but an approach deeply rooted in its theoretical building: According to it, consumer behavior contributes at least as much to the lack of sustainability in Western societies as the behavior of producers. However, it is possible to differentiate between shades of critique whose characteristic feature is the presence or absence of a "moral attribution of guilt" towards consumers.

Niko Paech is an advocate of a moral guilt of consumers. In Niko Peach's (2014) booklet "Befreiung vom Überfluss ("Liberation from Abundance"), which was largely uncritically received by degrowth

⁷ The consumption critique characteristic of degrowth can also be found in the book "Abschied vom Wachstum – Für eine Kultur des Maßhaltens" ("Farewell to growth - for a culture of moderation") published in 2009 by the so-called "mastermind" of the French New Right Alain de Benoist (he prefers to use the term "consumption mania"). Parts of the extreme right German party Alternative for Germany have also repeatedly declared their support for growth criticism and criticism of mass consumption.

advocates, the first chapter is programmatically called "Living beyond one's means - a supposed human right" (ibid, 13ff). He sees companies, the state and consumers as accomplices in liberating unsustainable patterns of consumption from any ecological criticism (ibid., 22). In complete contrast to Marx, Paech is also not convinced that work is the source of wealth. He admittedly also describes the goods produced by workers as products alienated from them. But the access to these products by the workers is for him synonymous with an access to things which the workers are not entitled to, because they could never have produced them alone (ibid. 37):

"In principle, consumers consume things that they could never produce themselves or never wanted to produce themselves (...). What's more, with increasing consumer prosperity, the spatial radius and complexity of the production system from which the products and services used originate are constantly increasing. The essential principle of consumption is to make use of the work done by other people in other places and, in particular, of the material yield of the resources and areas depleted elsewhere."

This is followed by a Marx critique (ibid. 37f.):

"During Karl Marx's lifetime it may have been easy to distinguish between exploiters and the exploited. But with the increasing spread of material wealth (...) these borders become blurred. Apart from that, without a sufficient number of people appropriating an increasing industrial output resulting from a spatially unbounded division of labor, none of the things at the center of Marxist criticism would be conceivable. Enshrouded in exactly the same illusion of progress, neoliberals and Marxists argue about the presumed yield of human achievements, which in reality represents the consumption of capital. Depending on the propagated concept of justice - sometimes hardworking workers, sometimes brilliant entrepreneurs are praised - both positions legitimize the claiming of a loot that from an ecological point of view should not have arisen in the first place and which, secondly, was anything but "deserved" and "earned"."

It is difficult to say which employees Paech has in mind when he criticizes them, certainly not e.g. nursing staff or the army of service providers, who work as suppliers, warehouse workers or the like at the minimum wage, but that will be left open here. His criticism of Marx also demonstrates a serious ignorance of Marxism. Marxists do not argue about a fair distribution of profits in the capitalist system, for such a distribution is not possible within the framework of capitalism from their point of view. Marx himself was not an advocate of distributive justice in capitalism, or regarded it as a vulgar-socialist idea (Marx/Engels 1987, 22):

"Vulgar socialism (...) has inherited from bourgeois economists the idea of considering and treating distribution as independent of the mode of production, thus presenting socialism mainly as revolving around distribution."

Marx was concerned with the contrast between those who possess the means of production and the production technologies and those who possess nothing other than their labor force and who are therefore inevitably in a powerless relationship of dependence to the owners of capital. To accuse them of the reduction of goods to pure exchange values caused by capitalist production relations and the associated international division of labor in the sense that they appropriate the labor performance of others through the consumption of these goods is absurd (not only) from a Marxist point of view.

But even though Paech embodies an extreme example of degrowth theorists in his contempt for "worker-consumers", consumer criticism can be found in the entire degrowth literature. Here, however, there is usually no talk of (conscious) guilt on the part of worker-consumers; rather, they are conceived as people who are in some way innocent because they are dominated by false status needs, or who do not know their true - critical theory would have said: "authentic" - needs. This can be seen, for example, in Schneider's comments on consumerism (2010, 5):

"Social comparison, fueled by inequality, drives people into consuming more. Economic growth has not been making people more satisfied with their welfare. Inequalities have played a role in continuously pushing up material aspirations. With interpersonal, social group and North-South comparisons, increase of material welfare does not calm down the needs to consume more because there is always a richer reference group to be imitated."

For Alexander (2014), the consumption of worker-consumers resembles a mental illness or substance addiction:

"Consumerism is a gross failure of imagination, a debilitating addiction that degrades nature and doesn't even satisfy the universal human craving for meaning."

Barbara Muraca (2014, 10) also speaks of a pathological growth addiction of the whole society - not of producers - when she describes the necessary changes that should lead to a degrowth society:

"It is about the slow liberation from the addiction to growth that has penetrated deeply into our collective imagination and permeates all aspects of our lives."

No wonder, with all the disease symptoms diagnosed, that the perhaps most prominent degrowth theorist Serge Latouche (2015, 119-120) recommends a detoxification strategy against growth addiction:

"The question of exiting the dominant or colonial imaginary (...) is a central issue but very difficult because we cannot decide to change our imaginary and even less that of others, especially if they are addicted to growth. (...) The detoxification (...) is not fully possible if degrowth society has not been already established."

One could cite many more examples of how advocates of degrowth identify the demands of consumers and not the profit striving of capitalists as the culprits for the increasing environmental destruction and the exploitation of natural resources. Consumers are either infantilized, degraded to manipulable puppets, or - albeit mainly with Niko Paech - constructed as deliberately exploitative hedonists. Irrespective of the reading, it is always the (Western) consumers and their demands that contribute significantly to maintaining the unsustainable status quo.

5.3 Criticism of consumer behaviour and ecomarxism

One does not have to be a Marxist to miss a decisive player in the picture drawn by degrowth theory. Even if people were more or less spineless collaborators of capitalism because, in one way or another, they hope for a more pleasant life through consumption: as non-owners of the means of production and sellers of nothing other than their labor they still have nothing to say about the way fossil capitalism produces goods. Ironically, the "commodity fetish" produced by these conditions - in the sense of products that have an apparent life of their own and whose possession assigns social status - is less evident among worker-consumers than among degrowth proponents. With Geogios Kallis (2014, 138), at least one advocate of degrowth noticed that the striving for status goods can be observed above all in those circles that loudly lament the manipulability of ordinary citizens:

"Paradoxically, frugal, simple life-styles have become signifiers of distinction and position, since they are first adopted by members of the educated and artistic elites who can appreciate and afford them."

But Kallis avoids a further, absolutely necessary step of this argumentation. If it is only possible for an elite, because of their greater purchasing power, to express their status thinking by purchasing sustainable products, what does that imply? Firstly, that the preponderance of non-sustainable consumption is not primarily to be attributed to manipulated consumers and their demands, but to an unequal distribution of purchasing power. It has nothing to do with thoughtless hedonism or status thinking (Schneider 2010) when people with low purchasing power buy textiles from China or Bangladesh, they simply have no choice. And that companies use the production facilities there not

only for cheap labour, but also for cheap, but dirtier, energy, was not demanded by the worker-consumers. On the contrary, they would have preferred these industries to have stayed at home and offered well-paid jobs. The second conclusion Kallis fails to draw is that a consumer elite (or "avant-garde", as Niko Paech calls this consumer class in all modesty), who, for the purpose of distinction, presents themselves as sustainable consumers, but otherwise beyond a superficial consumer critique and a propagation of frugal lifestyles does not consider it necessary to directly attack the capitalist beneficiaries of the fossil economy in any form, is morally not above the worker-consumers - quite the opposite. The Marxist commodity fetish that "makes relations between persons appear as qualities of things and as relations of persons to the social qualities of these things" is demonstrated to us by Kallis's consumer elite in its pure form. Far from escaping this fetish, it is celebrated without even remotely realizing how in this way a gain in distinction is only achieved by imposing all the evil of the unsustainable capitalist economy on the less privileged.

Despite what has been said, degrowth points to a real weakness of ecomarxism. In their ideas, ecomarxists seem to be too attached to the production and consumption conditions of the 19th century. The question of consumption does not appear in the lengthy books of Foster (2000), Foster and Burkett (2016), John W. Moore (2015) or Saito (2017). Their silence can be interpreted in such a way that they regard the question of consumption as unimportant. However, they are forfeiting the opportunity to counter the fundamentally centuries-old criticism of the behaviour of worker-consumers, which became much more acute in the 1990s at a time when the catastrophic consequences of the fossil economy were becoming increasingly clear and their beneficiaries were naturally interested in strategies to extend the question of guilt to the entire human race and its hunger for goods, with an ecomarxist critique.

It is true that worker-consumers stabilise the unsustainable fossil economy through their behaviour. But since the dawn of capitalism, worker-consumers have stabilized the system through their demand for goods. And just as their demand for consumer goods in the 19th century was not a tacit consent to the exploitation of their labor force, their demand in the 21st century cannot be reinterpreted as a consent to the perpetuation of the fossil economy. As Marx (Marx/Engels 1962, 597) has explained, "it does not matter that the worker carries out his individual consumption for himself and not for the sake of the capitalist". For as a non-owner of the means of production and under the constraint of selling his labor power, the worker-consumer remains at the mercy of the logic of exploitation of capitalism. And it is this logic of exploitation that forces the energy corporations to use their unsustainable energy infrastructure until they no longer yield profits, forces the resource owners to sell coal, oil and natural gas, until further production no longer yields profits, and forces the multinational corporations to relocate their production facilities to low-wage countries with dirty energy infrastructure until profits are no longer possible there either. Worker-consumers do not take these decisions and these decisions, like the exploitation of their labor in the 19th century, are diametrically opposed to their own interests. The individual worker-consumer can adapt his behavior by escaping capitalism or, as Fourier (2008) put it, the economy - usually at a high price. But this is completely irrelevant for the overall development of society as well as climate change. And if the goal is to escape the deadly fossil economy, such self-chosen insignificance is ultimately nothing more than a self-righteous attitude of refusal, which Marx would probably have called "childish".

5.4 Interim conclusion

Is the consumer criticism of degrowth compatible with Marx or ecomarxism? The answer must clearly be "no", because consumer criticism obscures the causes of the longevity of the fossil economy and is thus - albeit unconsciously - in the service of its beneficiaries. The "renunciation rhetoric" of degrowth nourishes the myth that a sustainable transformation of the economy is only possible through a serious change in the way of life of the population of Western industrial nations, a change that, despite all the assertions of degrowth advocates, would mean a significant deterioration in the lives of most people. The same myth, only with a different narrative, is also spread by those who are quite consciously

interested in continuing the status quo. In their narrative, too, a consistent ecological transformation worsens the lives of all, because energy prices would skyrocket, energy security would be endangered, and - always the most powerful argument - jobs would be endangered.

An ecomarxist view that deviates from these narratives would be that capitalists are only concerned with the security of being able to utilize their capital invested in the fossil economy, while capitalism on the other hand - in the sense of its historical justification - has already developed the necessary technologies to initiate an ecological transformation without significant effects on the way of life. With regard to fossil capitalism, capitalism has thus fulfilled its historical mission. If, like Marx, one would think in terms of historical laws, the contradiction thus created between the technological possibilities of an ecologically sustainable transformation and the continuation of the destructive status quo ought to be the perfect breeding ground for a revolution. But it seems that the pessimistic narratives have won the day.

6. Conclusion

In his 200th year of birth, Karl Marx's critique of capitalism is associated with all sorts of current developments: globalization, the continuing advance of automation, the exploitation of Uber-drivers and Eastern European contract workers – to name just a few examples. It is therefore only logical to look for links between Marx's sharp criticism of 19th-century capitalism and current theories that radically question our form of economic organization in the 21st-century. Degrowth is particularly well suited for such a search, not only because of the radical nature of its social concepts, but also because, like Marx in his day, it takes the view that the current accumulation of crisis phenomena could soon create the conditions for a complete transformation of society. As our study has shown, the links between Marx's critique of capitalism in the 19th-century and the critique of degrowth theory of our current form of economic organization are largely limited to these superficial commonalities.

Unlike the proponents of degrowth, Marx was an optimistic advocate of progress. He welcomed the expansion of productive forces in capitalism, which should be the economic basis of a higher form of society. He criticized the impact of short-term capitalist profit striving on environmental sustainability - at least in agriculture. But this critique is not synonymous with a general critique of man's domination of nature on the basis of technological achievements. Rather, his critique is to be interpreted in such a way that the exploitation logic of capitalism is incompatible with a rational mastery of nature. His critique was basically an economic one: the anarchy of capitalism wastes the power of the workers as well as the fertility of the soil, the blind accumulation of capital leads capitalism from one crisis to the next. He simply did not consider capitalism capable of directing its dynamism into reasonable channels and of controlling the forces it had conjured up. He had nothing against the dynamics and the forces themselves.

The ecological criticism that Marx was therefore an enemy of nature could be refuted by ecomarxist theorists such as John Bellamy Foster (2000), Kohei Saito (2017) and Reiner Grundmann (1991a, b). This does not mean, however, that he aspired to a form of society that is in harmony with nature. The rational metabolism of man with nature that he aspired to should not be confused with a life according to the rhythms of nature - on the contrary, Marx abhorred nature's dominance over man as much as the dominance of capitalist production relations over the worker. The emancipated and free man of his future society should never again be controlled by external powers. All this is difficult, if not impossible, to reconcile with a degrowth theory that prefers a return to more pristine natural conditions and that sees the technological achievements and productive forces of Western industrialized countries, regardless of the economic formation in which they are used, as the cause of the progressive destruction of nature and, not least, of climate change. While Marx wanted to unleash the technologies developed under capitalism, degrowth wants to reduce them to a level that avoids crossing

ecologically justifiable boundaries. And while Marx wanted to use automated production processes to keep the workload in communism to a minimum, degrowth propagates the reappropriation of manual skills as an expression of human autonomy.

All this does not mean that Marxism, or its interpretation in ecomarxism, does not regard today's way of doing business as a dangerous aberration in the same way that degrowth theory does. The danger of catastrophic climate change plays just as big a role in ecomarxism as in the degrowth literature. But degrowth sees the disastrous wandering on this aberration as being based on a wrong to pathological world view of human beings (in Western societies), whereas the aberration in ecomarxism has only ever been entered due to the specific laws of capitalism. In degrowth theory man cannot escape this aberration if he is too weak to resist the ideology of growth, to escape his status thinking and to renounce his consumer needs. In ecomarxism, the vast majority of humanity cannot escape the aberration because, as non-owners of the means of production, they are at the mercy of the interests and the decisions of a numerically tiny class of capitalists, which ultimately force them onto this aberration.

Is it still possible to escape the aberration at all? In the third chapter of this study, Walter Benjamin was quoted as suggesting that revolutions consist in the human race stopping a locomotive that is obviously on the wrong track by pulling the emergency brake. But why should it be ready to do so? If degrowth is correct, the (Western) human race enjoys the convenience of train travel as long as it can, unless its false imaginations are taken away from it. In principle, this is a correct notion. After all, it is not alien to Marxism to speak of the fact that the workers are not aware of the mechanisms of their exploitation - they therefore consider the world as it presents itself to them to be natural. So, from the point of view of degrowth as well as from the point of view of ecomarxism, enlightenment is necessary. About what? Perhaps about that:

Firstly, that a sustainable transformation of the economy from a social point of view would not require a fundamental change in lifestyle in Western societies due to the massive technological progress in the field of renewable energies in recent years. And secondly, that it is above all the profiteers of fossil capitalism who stand in the way of the unleashing of these technologies. There is a goal, there is a way and there is an obstacle that can be removed because it is not "natural". The power of the beneficiaries of the fossil economy is based on a social construction and could, recognized as such, be eliminated with a coup. Intervention in property rights cannot be sacrosanct if the exercise of these rights has the potential to plunge the world into chaos.

However, one should not be too optimistic about the impact of such enlightenment. It does not reveal deeply guarded secrets. And it will be vehemently denied, not least by advocates of degrowth. A revolution is not to be expected. But hope, as we know, dies last.

References

Adorno, Theodor W. (1938): Über den Fetischcharakter in der Musik und die Regression des Hörens, in: Zeitschrift für Sozialforschung VII, 321–356.

Alexander, Samuel (2014): Life in a degrowth economy, and why you might actually enjoy it, in: The Conservation, Download: http://theconversation.com/life-in-a-degrowth-economy-and-why-you-might-actually-enjoy-it-32224

Andreucci, Diego/McDonough, Terrence (2015): Capitalism, in: D'Alisa, Giacomo/Demaria, Frederico/Kallis, Giorgos (Ed.): Degrowth – A Vocabulary for a New Era, London: Routledge, 59-62.

Benjamin, Walter (2010): Über den Begriff der Geschichte – Werke und Nachlass/kritische Gesamtausgabe, Bd. 19, Berlin: Suhrkamp.

Benoist, Alain de (2009): Abschied vom Wachstum – Für eine Kultur des Maßhaltens, Berlin: Edition Junge Freiheit.

Blauwhof, Frederik (2010): The limits to capital accumulation – Radical analysis and strategy, Paper presented at the 2nd Conference on Economic Degrowth, Barcelona, March 2010.

Bramwell, Anna (1989): Ecology in the 20th Century – A History, New Haven/London: Yale University Press.

Castree, Noel (2000): Marxism and the Production of Nature, in: Capital and Class 24(3), 5-36.

Clark, John P. (1999): Marx's inorganic body, in: Jessop, Bob/Wheatley; Russell (Ed.): Karl Marx's Social and Political Thought – Critical Assessments, Volume VI, London/New York: Routledge, 28-43.

Coalswarm/Sierra Club/Greenpeace (Hg.) (2018): Boom and Bust 2018 - Tracking the Global Coal Plant Pipeline, Download: https://endcoal.org/wp-content/uploads/2018/03/BoomAndBust 2018 r6.pdf

Dale, Gareth (2013): Critiques of Growth in Classical Political Economy: Mill's Stationary State and a Marxian Response, in: New Political Economy, Volume 18, 431-457.

Daly, Herman/Farley, Joshua (2004): Ecological Economics: Principles and Applications, Washington D.C.: Island.

Deriu, Marco (2015): Autonomy, in: D'Alisa, Giacomo/Demaria, Frederico/Kallis, Giorgos (Ed.): Degrowth – A Vocabulary for A New Era, London: Routledge, 55-58.

Fourier, Valérie (2008): Escaping from the economy: The politics of degrowth, in: International Journal of Sociology and Social Policy, 28, 528-545.

Foster, John Bellamy (2000): Marx's Ecology – materialism and nature, New York: Monthly Review Press.

Foster, John Bellamy (2011): Capitalism and degrowth: an impossibility theorem, in: Monthly Review 62, Download: https://monthlyreview.org/2011/01/01/capitalism-and-degrowth-an-impossibility-theorem

Foster, John Bellamy (2012): The Planetary Rift and the New Human Exemptionalism: A Political-Economic Critique of Ecological Modernization Theory, in: Organization & Environment 25, 211–237.

Foster, John Bellamy (2013): The Fossil Fuels War, in: Monthly Review 65, Download: https://monthlyreview.org/2013/09/01/fossil-fuels-war

Foster, John Bellamy (2016) Marxism in the Anthropocene: Dialectical Rifts on the Left, in: International Critical Thought 6, 393–421.

Foster, John Bellamy/Burkett, Paul (2016): Marx and the Earth – An Anti-Critique, Chicago: Haymarket Books.

Global Commission on the Economy and Climate (2014), Better Growth Better Climate – Synthesis Report, Washington D.C.

Grundmann, Reiner (1991a): Marxism and Ecology, Oxford: Clarendon Press.

Grundmann, Reiner (1991b): The Ecological Challenge to Marxism, in: New Left Review 187, 103-120.

Hamilton, Clive (2003): Growth Fetish, Sidney: Allen & Unwin.

Hepburn, Cameron/Beinhocker, Eric/Farmer, J. Doyne/Teytelboym, Alexander (2014): Resilient and inclusive prosperity within planetary boundaries, in: China & World Economy 22, 76-92.

Immler, Hans (2011): Vergiss Marx, entdecke Schelling!, in: Immler, Hans/Schmied-Kowarzik, Wolfdietrich (Ed.): Marx und die Naturfrage, Kassel: Kassel University Press, 9-12.

IPCC, Intergovernmental Panel on Climate Change (2015): Climate Change 2014 – Synthesis Report, Download: http://www.ipcc.ch/pdf/assessment-report/ar5/syr/SYR AR5 FINAL full wcover.pdf

IRENA, International Renewable Energy Agency (2018): Renewable Power Generation Costs in 2017, Abu Dhabi, Download: http://www.irena.org/media/Files/IRENA/Agency/Publication/2018/Jan/IRENA 2017 Power Costs 2018.pdf

Kallis, Giorgos (2015): Social limits of growth, in: D'Alisa, Giacomo/Demaria, Frederico/Kallis, Giorgos (Ed.): Degrowth – A Vocabulary for A New Era, London: Routledge, 137-140

Kallis, Giorgos/Kalush, Michael/Flynn, Hugh/Rossiter, Jack/Ashford, Nicholas (2013): "Friday off": Reducing Working Hours in Europe, in: Sustainability 5, 1545-1567.

Kallis, Giorgos/Demaria, Frederico/D'Alisa, Giacomo (2015): Introduction: degrowth, in: D'Alisa, Giacomo/Demaria, Frederico/Kallis, Giorgos (Ed.): Degrowth – A Vocabulary for A New Era, London: Routledge, 1-17.

Kautsky, Karl (1903): Karl Marx' Ökonomische Lehren – gemeinverständlich dargestellt und erläutert, Stuttgart: Dietz.

Kerschner, Christian (2015): Peak-oil, in: D'Alisa, Giacomo/Demaria, Frederico/Kallis, Giorgos (Ed.): Degrowth. A Vocabulary for A New Era, London: Routledge, 129-132.

Latouche, Serge (2015): Imaginary, Decolonization of, in: D'Alisa, Giacomo/Demaria, Frederico/Kallis, Giorgos (Ed.): Degrowth. A Vocabulary for a New Era, London: Routledge, 117-120.

Lazard (2017): Lazard's Levelized Cost of Energy Analysis – Version 11.0, Download: https://www.lazard.com/perspective/levelized-cost-of-energy-2017

Mahnkopf, Birgit (2013): Peak Everything – Peak Capitalism? Folgen der sozial-ökologischen Krise für die Dynamik des historischen Kapitalismus, Working Paper 02/2013 der DFG-KollegforscherInnengruppe Postwachstumsgesellschaften.

Malherbe, Michel (1996): Bacon's method of science, in: Peltonen, Markku (Ed.): The Cambridge Companion to Bacon, Cambridge: Cambridge University Press.

Malm, Andreas (2016): Fossil Capital –The Rise of Steam Power and the Roots of Global Warming, London/New York: Verson.

Marx, Karl/Engels, Friedrich (1960): Werke (MEW), Band 7, Berlin: Dietz.

Marx, Karl/Engels, Friedrich (1961): Werke (MEW), Band 6, Berlin: Dietz.

Marx, Karl/Engels, Friedrich (1962): Werke (MEW), Band 23, Berlin: Dietz.

Marx, Karl/Engels, Friedrich (1963): Werke (MEW), Band 24, Berlin: Dietz.

Marx, Karl/Engels, Friedrich (1964): Werke (MEW), Band 25, Berlin: Dietz.

Marx, Karl/Engels, Friedrich (1967): Werke (MEW), Band 26, Zweiter Teil, Berlin: Dietz.

Marx, Karl/Engels, Friedrich (1968): Werke (MEW), Band 40, Erster Teil, Berlin: Dietz.

Marx, Karl/Engels, Friedrich (1968): Werke (MEW), Band 26 – Dritter Teil, Berlin: Dietz.

Marx, Karl/Engels, Friedrich (1975): Werke (MEW), Band 20, Berlin: Dietz.

Marx, Karl/Engels, Friedrich (1977): Werke (MEW), Band 4, Berlin: Dietz.

Marx, Karl/Engels, Friedrich (1978): Werke (MEW), Band 3, Berlin: Dietz.

Marx, Karl/Engels, Friedrich (1983): Werke (MEW), Band 42, Berlin: Dietz.

Marx, Karl/Engels, Friedrich (1987): Werke (MEW), Band 19, Berlin: Dietz.

Moore, Jason W. (2015): Capitalism in the Web of Life – Ecology and the Accumulation of Capital, London/New York: Verso.

Muraca, Barbara (2014): Postwachstum, in böll-Thema 1/2014, 10.

Norton, Bryan G. (1987): Why Preserve Natural Variety?, Princeton: Princeton University Press.

Paech, Niko (2014): Befreiung vom Überfluss – Auf dem Weg in die Postwachstumsökonomie, München: oekom-Verlag.

Paech, Niko (2017): Postwachstumsökonomik – Wachstumskritische Alternativen zu Karl Marx, in: Aus Politik und Zeitgeschichte 67, 41-46.

Pies, Ingo (2005): Theoretische Grundlagen demokratischer Wirtschafts- und Gesellschaftspolitik – Der Beitrag von Karl Marx, Wittenberg-Zentrum für Globale Ethik Diskussionspapier Nr. 05-3.

Routley, Valerie (1981). On Karl Marx as an environmental hero, in: Environmental Ethics 3, 237-244.

Saito, Kohei (2017): Karl Marx's Ecosocialism – Capital, Nature, And the Unfinished Critique of Political Economy, New York: Monthly Review Press.

Schmelzer, Matthias/Passadakis, Alexis (2011): Postwachstum – Krise, ökologische Grenzen und soziale Rechte, Attac Basis Texte 36, Hamburg: VSA-Verlag.

Sustainable Development Solution Institution/Institute for Sustainable Development and International Relations (2015), Pathways to deep decarbonization – 2015 Report, Download: http://deepdecarbonization.org/wp-content/uploads/2016/03/DDPP 2015 REPORT.pdf

Sarkar, Saral (2009): Die Krisen des Kapitalismus – Eine andere Studie der politischen Ökonomie, Köln/Mainz: Initiative Ökosozialismus.

Schneider, Francois (2010): Degrowth of Production and Consumption Capacities for social justice, wellbeing and ecological sustainability, Paper Presented at the 2nd Conference on Economic Degrowth, Barcelona March 2010.

Srnicek, Nick/Williams, Alex (2016): Die Zukunft erfinden: Postkapitalismus und eine Welt ohne Arbeit, Berlin: Edition Tiamat.

Veblen, Thorstein (1958): Theorie der feinen Leute. Eine ökonomische Untersuchung der Institutionen. Köln/Berlin: Kiepenheuer & Witsch.

Victor, Peter (2008): Managing Without Growth: Slower by Design, Not Disaster, Cheltenham: Edward Elgar.

White, Damian F./Rudy, Alan P./Gareau, Brian J. (2016): Environments, Natures, and Social Theory. London: Palgrave.

White, Damian F./Rudy, Alan P./Gareau, Brian J. (2017): Ecosocialisms, Past, Present and Future: From the Metabolic Rift to a Reconstructive, Dynamic and Hybrid Ecosocialism, in: Capitalism Nature Socialism 28, 22-40.

Wirsching, Andreas (2009): Konsum statt Arbeit? Zum Wandel von Individualität in der modernen Massengesellschaft, in: Vierteljahreshefte für Zeitgeschichte 57, 171-199.