ROUTLEDGE STUDIES IN ECOLOGICAL ECONOMICS

History of the Future of Economic Growth

Historical Roots of Current Debates on Sustainable Degrowth

Edited by
Iris Borowy and Matthias Schmelzer

ROUTLEDGE

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The future of economic growth is one of the decisive questions of the twenty-first century. Alarmed by declining growth rates in industrialized countries, climate change, and rising socio-economic inequalities, among other challenges, more and more people demand to look for alternatives beyond growth. However, so far these current debates about sustainability, post-growth or degrowth lack a thorough historical perspective.

This edited volume brings together original contributions on different aspects of the history of economic growth as a central and near-ubiquitous tenet of developmental strategies. The book addresses the origins and evolution of the growth paradigm from the seventeenth century up to the present day and also looks at sustainable development, sustainable growth, and degrowth as examples of alternative developmental models. By focusing on the mixed legacy of growth, both as a major source of expanded life expectancies and increased comfort, and as a destructive force harming personal livelihoods and threatening entire societies in the future, the editors seek to provide historical depth to the ongoing discussion on suitable principles of present and future global development.

History of the Future of Economic Growth is aimed at students and academics in environmental, social, economic and international history, political science, environmental studies, and economics, as well as those interested in ongoing discussions about growth, sustainable development, degrowth, and, more generally, the future.

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Introduction

The end of economic growth in long-term perspective

Iris Borowy and Matthias Schmelzer

The future of economic growth is one of the decisive challenges of the twenty-first century. Since approximately 1820, global economic growth has profoundly transformed human life and the planet, and current societies, economies, and cultures are fundamentally built on the expectation of continuing future growth. However, given the exceptional and non-reproducible circumstances, which have given rise to the unprecedented economic expansion of recent history, it seems essentially clear that, irrespective of local or regional developments to the contrary, on a global scale future growth rates will be nowhere near what they have been in the recent past. What is unclear, however, is how societies will react to the end of growth and related crises. What is the significance of economic growth in current societies? How did humanity come to develop this dependence on a growth-centered economy? And what possible alternatives are there and how have they evolved historically? These, among others, are the questions addressed in *History of the Future of Economic Growth.*

Although a highly ambivalent and elusive term, the semantic core of economic growth is statistically fixed. It is generally defined as the annual increase in the Gross National Product (GNP) or Gross Domestic Product (GDP). GNP and GDP measure the monetary value of all the final goods and services produced within a country, including the costs of producing all the services provided by the government.[1] Since production and services are provided and consumed by the inhabitants of a country, GNP/GDP is related to population. Using per capita GNP/GDP allows comparing the economies of countries of different population sizes. While this definition has always stayed at the core of what is meant by economic growth, the concept has become charged with a multitude of contested and shifting meanings, assumptions, and connotations. Often, economic growth is equated with development (in itself a contested concept), social progress, economic improvement, or the expansion of material through-put. This diversity of meaning is hardly surprising since, as the various contributions to this book make clear, the concept of economic quantification – or even of a recognizable "economy" – has been contingent on circumstances, is highly contested among various social groups, has evolved over time, and is likely to continue to do so in the future (for more details, see Fioramonti 2013; Speich-Chassé 2013; Schmelzer 2016).

For a long time, economic growth drew its legitimacy from its promise of providing the means both for improvements of individual living conditions and for social progress. This may explain why the idea of continuing economic growth has been broadly endorsed, readily taken for granted, and rarely questioned. The concept proved attractive both in those high-income countries, which had experienced substantial economic growth already, and in low-income countries, where people were hoping to get their share of the benefits of increased income in the future. However, the advantages of economic growth have always come at a social and/or environmental price, giving rise to concerns, which have repeatedly been articulated on the fringes of academia and society. As prospects for future growth seem bleaker than they have been in the past, discussions about the future of economic growth have gained strength and are beginning to spread into the mainstream of public discussions. In the process, the debate makes use of historical arguments, making claims about alleged past records and their meaning for the future, but frequently these claims remain unreflected and untested against a body of studies on often very complex phenomena and their short- and long-term causes and effects. Nevertheless, even though historical knowledge would clearly benefit the debate, up to now, historians have been curiously absent from it. This volume is an attempt to add historians' voices to considerations about the nature of challenges related to the costs and possible end of economic growth, about the historical developments leading up to these challenges, and about the degree to which past experience can or cannot serve as orientation for the future. History never really repeats itself, so it is a truism that the future cannot be a simple continuation of the past. This volume argues that today, in the second decade of the twenty-first century, this truism is more true than usual.

In order to give historical context to current debates about the future challenges of growth, in this Introduction we take a long-term view: We start by discussing the *external limits* to economic growth, in particular resources, climate change, and land; then explore what might be conceptualized as *internal limits* related to secular stagnation, prosperity, and equality; and finally present some historical perspectives on current debates about societies beyond economic growth by drawing out key arguments of the contributions to this volume.

External limits: resources, climate change, and land

Historically, the economic development since the late nineteenth century and, particularly, the high rates of economic growth during this period, represent an anomaly, which only appears normal to many people today because it has characterized circumstances in living memory. Between 1890 and 1990, global population increased four-fold, global energy consumption and GDP increased approximately 14-fold, and industrial production 40-fold. Of all the years ever lived by *homo sapiens* and his predecessors during the past four million years, probably one-fifth were lived during the twentieth century (Krausmann et al. 2013; McNeill 2002; McNeill 2000). How and when global

economic growth will decline and possibly end is unclear, but the fact that a repetition of the experience of the twentieth century is impossible for any extended period of time should be obvious even to the most enthusiastic cornucopianists.

Much of this growth happened in the second half of the twentieth century during the "golden age" of exceptionally high GDP growth rates between 1950 and 1970 in industrialized countries and in emerging market economies since. Named the "1950s Syndrome" or "Great Acceleration," it has also been a period characterized by rapidly increasing consumption of fossil fuel energy and production of material goods, of increasing exploitation of natural resources, and of various forms of environmental degradation (Pfister 2010; Steffen et al. 2007).

This development reflected exceptional circumstances, based primarily on an unprecedented exploitation of cheap fossil fuels. They allowed humanity to break out of the bounds of energy restrictions, which had severely limited the possibilities of economic activities so far (McNeill 2002; Crosby 2006). This liberation from energy constraints due to fossil fuels will necessarily be temporary. Coal, oil, and gas will not be able to keep sustaining economic growth (or even the existing high level of economic activity) endlessly into the future. One reason is the simple fact that they are finite and, though it is impossible to define this moment in time, at some point they will be used up. Much earlier, they will be so expensive and energy-intensive to mine as to make exploitation useless (Exner et al. 2013). Second, even if there was an endless supply of coal, oil, and gas, burning them results in climatic changes of intolerable dimensions, making their use increasingly objectionable. According to some studies, current reserves of fossil fuels, which are still in the ground, are tantamount to five times the amount that can be burned, if humanity is to stay within the internationally agreed limit of two degree global warming (Klein 2014, 148). There is already tangible opposition against forms of energy with a high negative impact on climate change and on local and regional environments, observable as public resistance against fracking, oil, lignite mining, or tar sands, and it is likely to increase with growing awareness of the effects of climate change and of the role of fossil fuels in causing it.

After all, the prospects regarding climate change are, indeed, dire. Scientists warn that "[i]ndirect effects of global climate change threaten the health of hundreds of millions of people" (Myers and Bernstein 2011). Predicted results include heat waves and changes in extreme weather conditions and in water resources, leading to harvest failures, changes in disease spectrum, damage and loss of property and livelihoods, loss of ecosystem services, and increases in violence and hostilities, all of which will disproportionately affect the most vulnerable groups in the world and within each society, i.e. the poor, the elderly, and the marginalized. Even more disturbingly, they include the risk of reaching and going beyond tipping points such as the melting of the Northern permafrost or the loss of wood cover, which will provoke irreversible and auto-catalyzing run-away changes that may take the entire process of climate

change to a new and really unimaginable level (World Bank 2014; IPCC 2014). Ironically, the relation goes both ways: not only does fossil fuel–based economic growth jeopardize climate stability, but climate change also imperils the future of economic growth. In 2007, the Stern Review famously calculated that the cost of not acting against climate change could be equivalent to losing between 5 and 20 percent of GDP each year, indefinitely (Stern 2007). Thus, it seems that, unless some entirely new form of energy will be found that is powerful, environmentally friendly, cheap, and rapidly available in large quantities, both a shift away from fossil fuels in order to mitigate climate change and the failure to do so will seriously depress economic growth rates.

There can simply be no doubt that eventually, humanity will need to face a change in its energy regime. In theory, this fact is easy enough to comprehend, but its full impact is nowhere near adequately appreciated. In spite of robust increases and improvements in the use of alternative energy such as solar, wind, or hydropower, at the time of writing it is difficult to imagine that these efforts will fully replace fossil fuels anytime soon. Regardless of how and when it will come about, a change in energy sources will truly be something that "changes everything" (Klein 2014), ranging from how we eat, live, dress, work, go on holiday, and spend our free time. It will also change social relations and hierarchies of inequality. Inevitably, it will also prevent a simple continuation of the present global economic system, which is predicated on continued economic growth.

Nevertheless, even though centrally important, the connection between fossil fuels and climate change is only one of the factors that contradict an endless continuation of economic growth. The impediments are multifaceted and inter-related and are connected to various building blocks of what constitutes our current economic system. Again, on a simple level, constraints result from the sheer physicality of economic growth. Though expressed in quasi-ethereal monetary GDP terms, the underlying developments are eminently material. This point may be most evident with regard to population growth, a powerful driver of economic growth. As McNeill (2002: 12) has graphically pointed out: "If twentieth-century growth rates were to persist, within a few centuries the earth would be encased in a mass of human flesh expanding outward with a radial velocity greater than the speed of light." Similar fictitious scenarios could be imagined about urban construction, industrial and agricultural production, or plastic waste, to name just a few. Obviously, this will not happen. Something will change between now and, say, the twenty-third century, which will curtail growth rates of the physical economy.

While it is thus clear that the material throughput – the non-renewable energy and the material resources consumed by the economic process and the emissions and waste generated by it – cannot continue to expand for long, some claim that GDP could still increase due to technological improvements. Proponents of continued economic growth maintain that equating GDP growth and improving living standards with increasing physical pressure on the environment is simplistic. In as much as the natural world (resources,

space, waste sinks, etc.) does not enter economic processes directly but after transformation through constantly changing technological processes and social frameworks it is supposedly possible, indeed normal, that rising GDP coincides with decreasing environmental degradation. The idea that innovations could "help to decouple growth from natural capital depletion and environmental pollution" (Dutz and Sharma 2012, 2) forms the basis of "green growth" as a concept designed to reconcile the continuation of the existing economic system with changes in the ecological burdens of this system. Thus, green growth can be seen as an extension of the Environmental Kuznets Curve, which gained prominence during the 1990s, spurred by its adoption by the World Bank (World Bank 1992, 41). This curve purported to show that environmental pressure rises during the early phases of industrial development but declines during its later, mature part, as further increases in national income give rise to more sophisticated, resource-efficient, and cleaner technology, and as, with basic needs met, public concern about the environment increases, resulting in protective policies.

This view has some merit. Some empirical data do, indeed, indicate that some progress has been made to separate GDP growth from environmental pressure. Thus, OECD calculations suggest that the world has experienced relative decoupling of GDP growth from the ecological footprint since the 1980s (OECD 2008). However, these improvements have remained limited. Decoupling has been relative rather than absolute, so that GDP growth still entails a rising ecological footprint, albeit less so than during earlier times. It is unclear, whether a combination of technological and social development will ever sufficiently decouple GDP from ecological pressure, making possible, for example, increases in GDP while radically reducing CO_2 emissions as is necessary to mitigate climate change. As of now, 40 years after the Stockholm Conference of 1972 and 20 years after the Earth Summit, both of which called for continued economic development with less environmental degradation, no member state of the United Nations has achieved a significant decoupling of economic growth from environmental pressure. In fact, even though the United Nations Framework Convention on Climate Change, signed in 1992 at the Earth Summit in Rio de Janeiro, called for a stabilization of greenhouse gas concentrations in the atmosphere, CO_2 emissions in 2012 were 58 percent higher than those in 1990 (Peters et al. 2013). On the contrary, the only times that global or regional CO_2 emissions declined were related to periods of economic decline: the oil price shock and US recession in the early 1980s, the collapse of the former Soviet Union, the Asian financial crisis, and the economic decline following the world financial crisis in 2009 (Peters et al. 2012).

Similarly, the Environmental Kuznets Curve has lost a lot of its promise. Subsequent studies showed that it seems to hold true for only a limited selection of pollutants and often it is unclear to what extent improvements in one country are the result of the transfer of polluting industries to other, usually low-income countries, a strategy which could obviously not be imitated on a global scale (Stagl 1999; Dinda 2004).

Besides, some key industries have strengthened their "coupling." A case in point is cement, whose production has doubled since 1990, surpassing global GDP growth by some 70 percent while causing substantial degradation for river beds, beaches, and the ocean floor as the origin of sand (Jackson 2009, 75; UNEP 2014).

Taking a broader view of the changing societal uses of products and their repercussions shows that frequently a large part of technological efficiency improvements are compensated by more resource usage. This so-called Jevon's Paradox has been known to economists since 1865, when William Jevons pointed out that efficiency improvements in steam power had led to increased coal consumption, and it was revived as the "rebound effect" in the 1990s (Polimeni et al. 2009; Sorrell 2009). For instance, the money saved through a more energy-efficient car is often spent either on driving more often and longer distances (direct rebound effect), or it is spent on other energy-intensive consumption (indirect rebound effect; Santarius 2015; Paech 2012). Assessments for the size of the rebound effects are notoriously difficult and differ enormously. A widely cited study of the UK Energy Research Council calculated an average of 26 percent for the different sectors of the UK economy (UKERC 2008). Recent metastudies found a range of between 34 to 96 percent, depending on country, time period, and economic sector (Chakravarty et al. 2013) or a broad variety of effects under 60 percent (Gillingham 2014). At any rate, the effect is real and sufficiently large to question efficiency improvements as viable options for decoupling.

Inevitably, if economic growth is tied to environmental degradation, continued growth will lead to continually increasing burdens on complex ecological processes. Indeed, a growing number of studies seem to bear out this connection and point to a dangerous approach of global limits. The best-known early publication of this type, the 1972 *Limits to Growth* report commissioned by the Club of Rome, which presented a total of 12 scenarios for possible future developments, was widely read and discussed. Yet subsequent criticism, especially by economists and often on the basis of misrepresentations of what the study had actually said, succeeded in establishing a view of the book as having been "wrong" in its "predictions" (Bardi 2011). Subsequent studies have proved more difficult to dismiss. In 2005, the Millennium Ecosystem Asssessment, which included contributions from more than 1,000 scientists worldwide, concluded that 15 out of 24 crucial ecosystem services were degraded or being used unsustainably, including fresh water, air and water purification, climate regulation, and pest control (MEA 2005). No study of a similar dimension has been conducted since. More recent studies indicate that global development has overstepped three out of nine planetary boundaries (Rockström et al. 2009; WWF 2014, 67).[2] At present, the world is using the resources and waste absorption capacities of 1.6 planets per time unit, and, if present trends continue, this number will rise to two planets by 2030, less than a generation from now (Footprintnetwork 2016).

Even seemingly reassuring news are only warnings in disguise and apparent solutions to environmental problems often merely seem to shift the burden in time and space, thus transferring the costs to the future or to other regions. In 1986, Peter Vitousek, Paul and Anne Ehrlich, and Pamela Matson calculated that all the productivity of lands devoted entirely to human activities amounted to 30.7 percent of terrestrial and 2.2 percent of aquatic net primary production. This calculation referred to biomasss, which provides humans as well as other beings with food, fiber, and fuel. Thus, according to this calculation, almost one-third of everything that grew on land was used strictly for human purposes (Vitousek et al. 1986). It was a result that was bound to alarm anyone whose vision of the world included the continued existence of animals and plants that were not meant to be eaten and of land that was not cultivated, mined, or built over. Indeed, given the highly constructed nature of the concept of human appropriated net primary production (HANPP), the many assumptions necessary to calculate it, and the wide margin of error resulting from the combination of many possible errors in individual sectors, such a number can clearly not be taken at face value. But even Vaclav Smil in his highly critical review of Vitousek et al.'s and several subsequent similar attempts concedes that the human appropriated NPP "does tell us something important […] about the human claim on the biosphere's primary resource" (Smil 2013, 197). In the latest attempt so far, Krausmann et al. came to a more optimistic result, estimating that unlike the manifold increases in population and industrial output, the HANPP only doubled between 1910 and 2005, rising from 13 percent to 25 percent of the NPP of potential vegetation. Depending on future policies, it is estimated to rise to between 27 and 44 percent. This astounding increase in efficiency in making use of HANPP has only been possible because a of the changing energy regime experienced during this period: as fuel wood and draft animals were replaced by fossil fuels, humanity makes fewer demands on biomass. Given the potentially devastating effect of climate change noted above, this is not so much positive news as it demonstrates the extent to which physical limitations have not been overcome but transferred into future challenges (Krausmann et al. 2013).

Arguably, the most disturbing warning may be based on an analysis of the degree to which the present developmental system has failed to provide even the basic service of sufficient food for all inhabitants of planet Earth even while exploiting its carrying capacity beyond its limits. This record raises the scary question of what will happen when the good times are over and humanity will have to face the challenge of feeding its members with only the diminished capacities of a thoroughly exploited world:

> A freeze frame of the present reveals a civilization at the peak of its power. Within the space of a few decades, humanity will have experienced peak population, peak oil, peak water, peak land, and perhaps even peak crop yields. Yet, even at the height of power, having taken virtual control of the biosphere and having turned the arable Earth into a vast feeding

> lot for our species, it still has not been enough. In what amounts to the greatest perpetual famine in human history, nearly three billion people are without proper food and water […] Now, with deteriorating conditions of planetary forests, soil, water, oil, climate, and ecosystems, we are expecting to improve the quality of life for billions of more people in the coming decades. There is a flaw with the logic of our expectations – one which may well translate into billions of additional malnourished people by mid-century, or, indeed, could even augur a painful population crash.
>
> (Schade and Pimentel 2010, 254)

This vision is, indeed, alarming, because Schade and Pimentel's reference to the "height of power" relates to the fact that the world has never fed as many people as today using food production which has never been as plentiful as today. Indeed, since the nineteenth century, a combination of improved agricultural methods, better transportation (notably by trains), a substantially strengthened network of small and large food shops, the industrialization of food production, notably the development of canning technology, the mechanization of food production and improved purchasing power of large parts of the populations resulted in tangibly improving diets of many people. Not all of these factors were directly tied to economic growth, but all were in some way related to it. The effect was not only a drastic reduction of hunger and an end to periodic famine but also an increase in population and an unprecedented equalization of food quality and quantity between different classes of society (Fernández-Armesto 2001, 194–205; Hirschfelder 2001, 189–205).

However, for all its achievements in feeding a growing global population, economic growth has failed to solve the problem of malnutrition and hunger on a global scale. Indeed, it can be argued that some aspects have increasingly been counterproductive to this goal. For instance, economic growth has entailed spurring – though not inventing – a form of agriculture that exacerbates soil erosion (Montgomery 2007) and by contributing to food waste. The latter is hardly a negligible aspect of this issue. According to a recent study published by the FAO, at present approximately one-third of all food produced for human consumption gets lost or wasted globally, is allowed to rot, or discarded at some stage of the supply chain between cultivation, storage, processing, transportation, and consumer usage. While waste occurs everywhere, the extent seems to be a function of wealth. It is estimated that consumers in Europe and North America waste 95–115 kg per year while in sub-Saharan Africa and South/Southeast Asia food waste is a mere 6–11 kg per capita and year (FAO 2011, v).

Even more complicated, economic growth has, at the very least, failed to solve and possibly exacerbated the global injustice in global food distribution, strengthening a system in which food was treated like any other marketable good instead of an essential human right to be protected from normal trade

exigencies. Unfortunately, there is little indication that these problems of global injustice and inefficiency will be more intelligently and more humanely addressed in the future under conditions of increasing absolute scarcity. In fact, recent developments of "land grabbing" in low-income countries, which were triggered by a spike in food prices in 2008 but also reflect efforts to safeguard food security (especially in the Gulf States) and the replacement of fossil fuels with biofuels (especially in Europe), suggest the opposite (Smaller and Mann 2009; Future Agricultures 2011). Nevertheless, given the shrinking possibilities for economic growth, distributional justice may be humanity's best bet for the future. Clearly, relying on further growth as a solution is not a promising strategy. A different strategy will be required in the coming decades and centuries.

Internal limits: stagnation, prosperity, and equality

However, external limitations arising from the scarcity of resources, sinks, and land are not the only reason why continued economic growth in the future is far from certain. Even independently from these environmental concerns, there are good reasons to question the possibility, but also the desirability of continued growth in the future. In the wake of the recent economic crisis at the end of the first decade of the twenty-first century, several economists have suggested that early industrialized economies have entered a new stage in the history of economic development. Based on the finding that growth rates in those countries with the longest experience with economic growth – the original OECD countries from Western Europe, North America, and Japan – show a sustained decline, these economists voice the concern that early-industrialized countries might soon confront the end of growth. Going back to stagnationist theories of the late 1930s, most prominently formulated by US economist Alvin Hansen, the proponents of this "new secular stagnation hypothesis" predict the demise of relevant growth rates in the coming decades. The reasons discussed for this trend range from diminished long-run growth potentials due to declining technological productivity increases to structural "headwinds" such as stagnant populations, inequality, and public debt. The term "secular stagnation" gained particular prominence through a November 2013 speech by Lawrence Summers, former President of the National Economic Council under President Obama, held at the IMF Forum, but proponents of this end of growth thesis range from Tyler Cowen, author of *The Great Stagnation*, to Robert Gordon who predicts "The Demise of U.S. Economic Growth," to such famous economists as Robert Solow, Paul Krugman, and Thomas Piketty. Even though their view does not yet form a consensus among economists, their arguments have gained considerable traction due to a continuous slack in economic output, in particular in the EU, and due to continuously low real interest rates close to or below zero (Baldwin and Teulings 2014; Cowen 2011; Gordon 2014; Piketty 2014).

In the long term, economic growth might just not develop in the form of the hockey stick currently used as visualization – being stagnant for most of

human history and then speeding up very rapidly into an almost vertical rise following a J-curve. Rather, high-income economies seem to be transitioning into a development more adequately described as an S-curve, in which rapid acceleration slows down and eventually comes to a halt. At present, this only applies to those countries with the highest GDP in North America, Japan, and Western Europe, which historically industrialized first, but they seem to be showing a general trend that may eventually also apply to emerging market economies. In what may be a harbinger of upcoming transformations, China's growth rates are already declining rapidly. Thus, humanity may be at a critical juncture that can be seen as the economic version of the demographic transition.

It may, in fact, be at a larger juncture of how it can and has to define socio-economic improvement. After all, economic expansion has brought immense benefits to millions of people in many parts of the world since the early nineteenth century. According to one estimate, approximately 80 percent of people in the world in 1820 lived under material conditions roughly similar to those of the poorest 20 percent of the world population today, which means they could not afford what a US citizens could buy for $1.50 in 2014 (Ravallion 2016, 2–3). Though being poor in 1820 clearly meant something different to people in 1820 and in 2017, there is no reason to overlook the hardship that characterized the lives of average people until recently, the vast majority of whom were peasants, and for whom food security, days without work, a toilet in the building or light after sunset were beyond imagination. To be sure, the lives of many peasants could have been a lot better if the feudal rulers had seen fit to take an interest in the wellbeing of common people, but even with a perfectly even distribution of wealth there simply would not have been enough goods to ensure what, today, we would consider a comfortable life. For most of human history, the lives of most people have been characterized by scarcity, material insecurity, and poverty (cf. e.g. Pelz 2016). During industrialization, the increased energy available through fossil fuels meant that "for the first time in history, mass poverty became unnecessary" (McNeill and McNeill 2003, 232). Besides, quality of life is not defined by quantity alone. The growth of the last two centuries brought benefits qualitatively unavailable even to wealthy people of former times, such as vacation trips to foreign continents, hearing the voices of distant loved ones or having access to specialist doctors (DeLong 2000). Things considered simple today, like reading a book at night while listening to one's favourite music, were unimaginable luxuries to people anywhere even some decades ago. Economic growth has not only been about the mindless craze for more consumer items (although this has increasingly been part of it), but also about socially and culturally rich lives largely free from essential material risks.

However, in recent decades and with already improved living standards, further growth seems to be losing its ability to deliver on its two central promises: to provide for a better future for all parts of society, especially those at

the bottom of the economic ladder, and to improve social equality. Both points are complex and interrelated.

To begin with, research in social history and welfare economics indicates that focusing on GDP as a measure of progress and wellbeing has literally been *Mismeasuring Our Lives* (Stiglitz et al. 2010). It has raised cogent doubts regarding the continuing positive relationship (beyond a certain threshold) between further GDP growth and welfare, equality, distribution, happiness, and employment. GDP is problematic, above all, since it is a "blind meter" – a statistical measure that "counts only output while ignoring costs and losses" – so that the deceptive logic of "more is better" leads to problematic results (Philipsen 2015, 2–3). In recent years, evidence from research both in cross-sections of countries and in longitudinal studies of individual countries, intra- and internationally has demonstrated that the welfare-benefits of GDP growth vary considerably over time and tend to diminish with increasing national wealth. Since the late 1960s or 1970s, the costs of growth in industrialized countries (such as an acceleration of life and work rhythms and a resulting increase in stress load, increasing inequality, consumerism, and destroyed environments) have been increasing faster than the benefits (such as the potential for further improvements in living standards, health, and social services), thus making GDP growth increasingly "uneconomic." Increasingly, studies also indicate that, while this may have been different in the past, in industrialized countries of today GDP growth is not indispensable for current and future human flourishing. Instead, other factors, most importantly the degree of equality, are far more important. For example, though per capita GDP in the US virtually tripled between 1950 and 1998, net economic, social, and environmental wealth (measured as the Genuine Progress Indicators or the Index of Sustainable Economic Welfare) barely increased at all in the same period and even declined after the 1980s (Offer 2006; Wilkinson and Pickett 2009).

The relationship between economic growth and socio-economic inequality has been a volatile one. Since the beginning of industrialization, economic growth and the improvement of living standards have been distributed very unevenly. In 1800, the world was not an egalitarian place. Most societies were highly unequal, consisting of a small, rich upper class and a large number of very poor people, mainly peasants. But differences between different parts of the world were small. The living standards of peasants in one part of the world did not differ dramatically from that of colleagues in other places. Industrialization ended this relative similarity of living standards and inequality between various regions surged, depending on whether they were part of the high energy development or not. Thus, the ratio in per capita income between the richest and the poorest regions of the world rose from 5:1 in 1870 to 15:1 in 1950 (Maddison 2001).

Inequality within industrialized countries decreased and remained on a relatively low level between approximately the 1930s and 1980s (Piketty 2014). For what may have been a combination of changes brought about by

globalization and financialization, this tendency reversed in the 1990s, as inequalities *within* many countries increased while the rise of millions of people from poverty to various degrees of material comfort in countries like India, Brazil, and, above all, China has caused a decline of inequality *between* countries. In many ways, this is excellent news, as the world is becoming a somewhat more equal place for the first time in 200 years. However, for two reasons this development also gives grounds for concern. One is that the global gini-coefficient remains scandalously high at around 0.7 so that achieving an acceptable level of equality suggests the need for a continuation of the development of the last decades on an incomparably larger scale (Lakner and Milanovic 2013; Bourguignon 2015). This is disturbing since there can be little doubt that the improvements in material living conditions for an immense number of people in China and elsewhere have been the result of unprecedented growth rates, accompanied by large-scale environmental degradation.

The economic development in China, involving extremely high growth rates, resulted in a spectacular reduction of the poverty rate from an estimated 75.5–100 percent in 1978 to 6.7–13.2 percent in 1996 (Yao 2000) or 84.02 percent in 1981 to 13.06 percent in 2008 (Zheng and Kahn 2013). In absolute numbers, this translates into approximately 600 million people who moved out of poverty to gain various levels of material comfort within one generation. While the social value of this improvement is beyond question, it has been accompanied by massive increases in resource-demanding production and concomitant environmental degradation. China became the producer of 40 percent of global clothes; the number of private cars increased from 6.25 million in 2000 to 73.27 million in 2011 which, however, still represented a mere 18 percent of households, far below Western standards; electricity consumption more than tripled within one decade between 2000 and 2011, of which almost 80 percent were produced using coal and another 15 percent using hydropower, often involving environmentally questionable dam projects. Urban pollution increased to the point that in 2006 only 1 percent of the Chinese urban population lived in cities that met the air quality standards in particulate matter of the European Union. Though data have improved since, the air quality remains critical, while water quality has also deteriorated sharply. Rare earths mining and processing, a key component of technologies at the core of a supposedly "green economy," has created its own variety of environmental problems in the areas where they are found, notably in Inner Mongolia and Sichuan. In line with the Environmental Kuznets Curve, a combination of cleaner production processes and increasing public concern about environmental safety have initiated some improvements in fields that respond well to technological solutions and further improvement seems almost certain (Zheng and Kahn 2013). Nevertheless, in view of the limitations of technical fixes and the well-established repercussions of the rebound effect, a continuation of this development until people have reached a Western living standard in China – let alone in the world at large – is near-impossible

to imagine (Jackson 2009). The problem of global inequality is thus further exacerbated by ecological crises. This becomes most obvious with regard to climate change: Those regions that have historically been least responsible for ecological destructions are being hit hardest, while those regions that have historically benefited most from industrial growth and are thus most responsible, are much less vulnerable, not least because they have acquired the resources to adapt (Bond 2012; Kenis and Lievens 2015). Some mechanism other than conventional economic growth needs to be found to solve the profound challenge of large-scale poverty and global inequality.

This challenge is highlighted by the contrasting developments at the extreme ends of global income: the very poor in the world have experienced basically no income gains, while those already extremely rich have been becoming even richer. This development has led to the absurd situation that, in 2016, 62 individuals owned as much wealth as the poorer half of the world population, pushing global inequality to a truly grotesque level. If current trends continue, it is bound to exacerbate further in the decades to come (Oxfam 2016).

Meanwhile, another disconcerting aspect of recent developments concerns industrialized countries, whose lower middle classes have also failed to receive a proportionate – or any – share of national income growth, turning them into losers in their societies' accumulation of more wealth (Lakner and Milanovic 2013; Bourguignon 2015). The result has been rising inequality within many countries in North America, Europe or in China. The repercussions are disturbing. For decades, economic growth unfolded according to an "unwritten social contract" within societies both in the capitalist and the communist world, in which poor people accepted inequality as well as economic and political repression because they could hope that they would be better off in the years to come and their children would live even better lives after them. As the material gains of economic growth accrue almost entirely to those at the very top of the income ladder, this contract no longer holds (McNeill, personal communication, June 2016; McNeill 2000, 318; McNeill 2003, 299 and 303). This change lays bare fundamentally political questions of distributional justice, which, as Stephen Macekura and Lorenzo Fioramonti make clear in their contributions to this volume, a seemingly technocratic narrative regarding an a-political economic expansion served to gloss over. This situation can be interpreted as a positive thing, since, in theory, it may force people to face essential questions about what their societies look like, what they would like them to look like and how they could get there. However, it is by no means certain that this will happen.

At the time of writing, in 2016, both Europe and the US witness a rise of populism and the emergence of a disillusioned underclass who translates socio-economic frustration into profound distrust of and hostility against the established classes in their countries (including the press) as well as against those even more vulnerable than them, notably foreign workers and immigrants, that foreshadows a serious danger to societal cohesion and to democracies in general.

Thus, it is in the interest of safeguarding the global environmental life-support system as well as democratic conditions to find a viable and convincing strategy of improving living standards and distributional justice both between and within countries. When economic growth is no longer capable of maintaining social peace and democracy, the establishment of a credible alternative, one that promises a comfortable, satisfying, and just life for the future, is taking on new urgency. In fact, it may be even more than democratic structures in a narrow sense which are at stake. If Ian Morris (2015) is right, and our moral values of egalitarianism and human rights are the result of a societal order based on fossil fuels (and economic growth as its most visible outcome), the stakes for finding an ethically acceptable alternative could hardly be higher.

This challenge is clearly intimidating, if not downright scary. So far, the spectacular improvements in living conditions of the last century have been tied to economic growth and increased resource exploitation. There is no tangible precedence to fall back and little experience to rely on when engaging in a policy of maintaining the benefits of growth without paying the social and environmental price. It is like flying blind, and understandably policy makers, economists, and citizens are reluctant – if not downright petrified – to face this ordeal or even to acknowledge that it is necessary. It is this inability to reconcile the triple goals of providing good living standards, a just distribution of wealth, and the protection of the environmental basis of human lives, which has haunted policy makers, NGOs, and generally people around the world for decades (Borowy 2016) and which forms the background for the discussions described in this volume.

Beyond growth? Historical perspectives and ongoing debates

Given the sweeping global acceptance of the pursuit of growth as a key policy goal it is easy to forget that not only the reality of economic expansion, but also the adoption of growth as a key category of economic and public discourse have been comparatively recent phenomena. This lack of historical awareness deprives the present discourse of crucial dimensions of what economic growth has or has not meant to different people at different times, both conceptually and as tangible lived experience. Without this dimension, discussants on all sides risk substituting ideology for analysis, and assumptions for critical appraisal.

Undoubtedly, economic growth remains the central goal of most policy makers and social groups, as it holds out the promise of increasing (or maintaining) employment, wellbeing, and quality of life, and never in history did so many people enjoy the benefits derived from economic growth. The global financial and economic crisis, which began in 2008, has strengthened economic growth as the corner stone and purpose of politics all around the world. At the same time, however, the vision of a world beyond economic growth is becoming more compelling. At present, advocates of growth are confronted with the strongest opposition in decades, and the dissatisfaction with growth

and its problematic effects is spreading among activists, such as the indignados in Spain or the occupy movement in several countries, but increasingly also among general populations, among policy makers, and in academia (Cassiers 2015; Costanza et al. 2014; Klein 2014; Latouche 2010). Alarmed by declining growth rates in industrialized countries, climate change, and rising socio-economic inequalities, among other challenges, more and more people demand to look for alternatives beyond growth. In the political realm, these discussions are not only reflected in considerations of alternative indicators to replace GDP, but also in the creation of various governmental or parliamentary agencies focusing on sustainability, welfare, and the problems of economic growth. The Sustainable Devleopment Commission in the UK, the Stiglitz Commission in France, or the Enquete Commission of the German Bundestag are cases in point. These trends have revived more radical calls dating back to the 1970s promoting concepts of "sustainable development," "green growth," or even "post-growth" or "degrowth." While not welcoming stagnation, they call for a social-ecological transformation of industrialized societies and a fundamental shift of developmental models that overcomes the growth imperative, but disagree as to how radically to oppose GDP growth (Cassiers 2015; D'Alisa et al. 2015; Muraca 2014; Stiglitz et al. 2010).

However, so far these current debates about sustainability, post-growth, or degrowth lack a thorough historical perspective. Both proponents and opponents of growth tend to have a one-dimensional view of growth, ranging between idolizing and demonizing. At present, both the search for new statistical measures "beyond GDP" and the lively discussions about political alternatives to growth-centered development are fundamentally ahistorical in that they largely ignore and underestimate the long-term historical roots, path dependencies, and power relations of the growth paradigm. They also tend to take the negative effect of economic growth for granted without engaging in a serious debate about the real benefits it has brought to many people in various ways, for which no alternative strategy is similarly well established.

This volume seeks to address the historical background of issues that stand at the core of ongoing discussions about alternative future economic developments. The purpose is to reveal and analyze the path-dependencies underlying key elements of the existing growth-oriented socio-economic system, conceptually as well as practically. Addressing different aspects of the history of economic growth as a central and near-ubiquitous tenet of developmental strategies, the eight original chapters in this volume contribute a new perspective to these ongoing debates. The aim has been to historicize seemingly self-evident aspects of growth and to provide a critical analysis both of the conceptual evolution of the idea and of the tangible reality of growth and of the ways it has affected the lives of populations at different times and places.

The contributions follow three different avenues of enquiry: five chapters (Dale, Fressoz/Bonneuil, Westermann, Macekura, Fioramonti) take a deconstructivist approach that focuses on understanding the origins of the growth paradigm and growth-oriented policies, societies, and cultures; one chapter

(Borowy) focuses on the practical experience of growth and its real-life repercussions; and two chapters (Caradonna, Muraca/Schmelzer) study alternatives to the growth paradigm. This uneven distribution of approaches with a clear dominance of conceptual questions was not originally intended, but resulted from successes and failures in our search for authors. While we initially regretted this imbalance of focus, we have come to accept it as a sign of where the historical discourse on matters related to economic growth presently stands. In the second decade of the twenty-first century, as an increasing awareness of the unsustainability of the existing growth paradigm is competing with a continuing political commitment to growth – or an unwillingness to embrace a promising but untested and unpredictable alternative – the focus of historical research evidently lies on deconstructing this concept. By recapitulating its genesis, historians analyze what narrative structures or knowledge systems about the economy and about processes of growth were produced at different times and in different social or geographical spaces.

Gareth Dale explores the origins of the growth paradigm. Analyzing key texts of ancient civilizations, which have been suggested as early examples of growth-based thinking, he finds important building blocks, but not a fully developed growth paradigm: Bronze Age Mesopotamia, while developing agriculture and a sophisticated trade infrastructure, did not conceptualize economic growth; India's Mauryan Empire pursued a policy of increasing production, the purpose was to fill the royal household rather than to increase an abstract "economy"; and Ibn Khaldun, foremost thinker in fourteenth-century Maghreb, much like his peers in Mauryan India centuries earlier, saw social changes in wealth as an essentially cyclical process. Instead, the emergence of a coherent growth paradigm required a set of developments which took place in Northwestern Europe, notably Britain, between the sixteenth and eighteenth century. They included the spread of the mechanized clock and the concomitant change in the concept of time as an objective, quantifiable entity; the reconceptualization of land as a tradable and fillable commodity; the maritime-colonial expansion with its unleashing of new material dynamics; the scientific revolution; and, in close connection to all of the above, the rise of capitalism. The conceptual groundwork was supplied by a series of philosophers and thinkers, often with a Puritan background. Thus, Francis Bacon spread the ideas of materialism, science, and the accumulation of knowledge. Gabriel Plattes and Robert Boyle developed early forms of cornucopian thinking; and Isaac Newton and others pioneered new constructions of nature as a law-governed mechanism, thus shaping the conception of "the economy" as a law-governed mechanism later promoted by economic thinkers. Advancing knowledge in mathematics and celestial mechanics gave rise to the expectation that human behavior and social developments would similarly be determined by laws of nature and could, therefore, be understood, quantified, and predicted like clockwork. Gradually, these developments laid the groundwork for the conceptualization of an "economy" as a discrete sphere of social life, which, true to the emerging capitalist creed in

accumulation and monetary return on investment, was subject to law-governed dynamics of growth.

The chapter by Jean-Baptiste Fressoz and Christoph Bonneuil continues where Dale's chapter leaves off, exploring the subsequent changes in scientific and public concepts which lead to the widespread acceptance of the growth paradigm. As key to this development, they highlight in particular the conceptual separation of the economy from its fundamental reliance on natural resources. This separation was a long process. Early economic thinkers, notably physiocrats and classical political economists, firmly rooted in an agricultural world, had taken such a connection for granted, and consequently conceptualized an organic world in which different economic sectors and actors competed for limited land, resources, and energy, especially wood. It was only by shifting to coal and thus – aided by geological experts – by tapping into age-old layers of lithosphere, that the Earth was turned from a place with a finite surface into a multidimensional, seemingly endless reservoir of fossil resources. This change allowed a subsequent shift in economics to neoclassical theory, away from a focus on factors of production to one on marginal utility, which separated economics from the material world. Prices and production functions became closed systems without connection to exogenous factors (meteorology, disasters, wars, etc.). This conceptual dematerialization of the economy continued during the Depression of the 1930s, when the end of the gold standard and Keynesianism concentrated attention on abstract money as a key economic factor, and the introduction of GDP statistics in the 1940s. These developments established the dematerialized economy as a closed and commodified system that could be conceived as growing indefinitely, unaffected by natural constraints, dependent only on the good guardianship of economic experts. The subsequent rise of the political growth paradigm obscured underlying transformations, notably the extent to which growth consisted of a "petrolization" of the world and the extent to which it relied on the development of unequal ecological exchanges on the global scale. Even the ecological critique of growth was met with visions of a dematerialized economy and with efforts to devise market instruments for environmental policy. In the process, the environment was re-introduced into economic thinking, albeit in radically transformed shape as marketable "natural capital," where limits appeared as promising investment opportunities.

Andrea Westermann analyzes a late episode in the debates regarding the relationship between economic expansion and the natural world, before a successful decoupling of the vision of sustained economic growth from material resource consumption had taken place. More particularly, she focuses on the relationship between growth and monetary metals. In the nineteenth century, most Western countries used a bimetallic standard. Mexico, China, and India used a silver standard, and only Great Britain had adopted a gold standard. Subsequent choices depended largely on mineral findings within the country's sphere of influence. Changes in mining and usage destabilized the ratio of value between the two classic monetary metals, leading to a proliferation of

expert commissions, asked to study the situation and provide recommendations regarding future domestic coinage policies. Similar to the question of coal, geological expertise entered discussions about economic decision, bringing geological, planetary scales into contact with human, societal scales. Westerman focuses her case study on Eduard Suess, a professor of geology from Vienna who undertook a study which aimed at an estimate of global gold reserves. It was an ambitious project, but Suess was confident that a reasonably reliable estimate would be possible so that responsible and long-term monetary decisions would have to take these finding into account. He came to the conclusion that gold reserves, especially in Africa, would be used up in the nearer future and large reserves no longer existed, representing a natural limit to the growth of trade and economic performance. Because he predicted a decline in the future world production of gold, which would be insufficient to meet the monetary demands for global trade, he recommended a currency based on silver. However, most countries rejected his long-term, geological scale of arguing, relying instead on short-term political considerations. By the end of the nineteenth century, most countries had established the gold standard, a form of currency system which spurred free trade and cosmopolitanism. Before the First World War, the 35 national economies operating a gold standard accounted for 70 percent of world trade. However, this peak was short-lived. After the Great Depression, the countries gradually gave up the system of a mineral-based currency altogether, thus opening up the possibility of infinite monetary growth.

Lorenzo Fioramonti's chapter highlights the overwhelming dominance of GDP as a driver of political and social decisions, as demonstrated recently by austerity policies. He explains the inadequacy and, in some instances, the absurdity of GDP as a measurement of economic performance, let alone of societal wellbeing: GDP equates economic growth with market transactions regardless of social utility; it excludes household and informal work, often a substantial if not the most important component of a national economy; it measures flows, ignoring stocks and leading to unsustainable consumption of non-renewable resources and incentivizing short-term policy planning; and it disregards both the value of the natural resources consumed in the economic process and the economic costs of pollution and environmental degradation. Fioramonti demonstrates how the specific definition of GDP resulted from its historical origins in the context of the Depression of the 1930s, the prevalence of Keynesian policy interventionism, and of the Second World War. Indeed, the GDP proved a major advantage in generating revenues for the war and propelling large-scale consumption in the post-war period. Through aid policies in post-war Europe and, later, in the global South, GDP was exported to the rest of the world, soon taken up and propagated by the United Nations and the OECD. During the Cold War, the US government sought to discredit the USSR by reassessing Soviet economic performance through a GDP lens, while the Soviet Union tried, for a while, to compete with its own metric before shifting to a similar form of statistics in the 1980s. Over the years, the GDP has been severely criticized and a series of alternatives have been

suggested, including the Measure of Economic Welfare, the Genuine Progress Indicator, or the Better Life Index. However, nothing has been able to dethrone GDP, which draws its persistent power from a combination of support from industry, whose pollution remains uncounted, unwillingness by policy makers to change to a metric that makes their economy look worse and reveals the political nature of wealth and income distribution, and by simple path dependency. Nevertheless, Fioramonti insists, a change in metric would be highly desirable to provide a more realistic and meaningful representation of the world, ideally a "dashboard" of indicators capable of integrating the key dimensions and human and ecological wellbeing.

Stephen Macekura connects the concepts of "economic growth" and "development" and analyzes how they co-evolved in North America and Europe in the twentieth century, changing meaning and definitions in the process. Though it is difficult to pinpoint an exact beginning of development thinking, early traces can be found in the works of David Hume and Adam Smith, it is interesting to note that the word "development" entered the English language in the mid-nineteenth century to describe colonial improvement strategies in different parts of the empire, frequently aimed at attracting and maintaining the allegiance of settlers in far-away colonies through promises of state-financed infrastructure projects. At the same time, the term gained connotations of racial and cultural superiority, as several colonial powers linked ideas of social evaluation and imperial legitimacy with hygiene, irrigation schemes, local education, and public education. By the 1920s, economists in the US, Great Britain, and other wealthy countries shifted attention from isolated factors to the entirety of "the national economy," developing the concept of GDP. Despite disagreements on what it should include, achieving high GNP growth rates quickly became a practical policy goal and powerful symbol. This number gave birth to the concept of economic growth. It was readily accepted: for governments it came with the advantage that it allowed reconstructing old conflict over distributional justice in allegedly a-political economic terms, and during a period of increasing production and consumption, the concept made perfect sense to those who experienced it and to those who wanted it. Economists in the Soviet Union developed their own measurement system, similarly predicated on the idea of growth. As leaders of countries of the global South readily endorsed the goal of GDP-growth, Western economists sought to identify the factors underlying economic growth in order to devise strategies able to trigger its "take-off" in the non-Western world. In addition, economists cooperated with social scientists to identify key aspects of life that would spur economic growth and focused on "modernization," which linked social and cultural traits with the economy and would ease "traditional" society into the "modern" world. By the 1960s, criticism of an uncritical pursuit of "development" and economic growth increased, provoked by their increasingly obvious environmental and social problems. However, as of today they proved less influential than the rise of neoliberalism in the 1980s, which shifted the development goals from governmental policies to growth based on free trade, liberalization of capital

controls, privatization of state goods, and redirecting state fiscal policy from providing social security towards structuring increased market activity. As these strategies appear inadequate to meet the challenges of the twenty-first century, Macekura argues, the future of development and growth seem unclear.

Iris Borowy analyzes whether economic growth is good for health – a question, she points out, which is not only academic but has tangible policy implications. In search of evidence for the relation between economic growth and health, both proponents and opponents of growth-based policies turn to historical data, using historical findings and their interpretation as arguments for present-day policy decisions. The immediate impact of economic growth, she argues, seems to have had potentially contradictory effects: periods both of economic growth and economic recessions have at different times coincided with either improving or deteriorating health outcomes. The overall long-term effects in industrialized countries has clearly been positive. More income has provided opportunities to buy better health provisions both for individuals (better food, clothing, housing) and societies (sanitation, public health services, public education). This effect has not been automatic, but more income has provided possibilities which many societies have used. Today's populations, therefore, are the health beneficiaries of past economic growth. However, in the entanglements of global history, these benefits have come at the price of health damages suffered by people living at other times and in other places. A crucial factor for economic growth and health improvements in Europe – with Britain as its economic vanguard – was the depopulation of North America, resulting from the death of millions of Native Americans caused by old world diseases, coerced labour, forced removals, and massacres. This example of gigantic health deteriorations, stretching over a continent, proved beneficial for the health of people in Europe, where emigration reduced food and epidemiological pressure on those that remained, and by supplying "ghost acres" which European economies could incorporate. In addition, the depopulated continent provided land and slavery provided labor for sugar and cotton, which fed British workers and industrial processes. The tea, which functioned as a vehicle of intake of sugar calories feeding British workers, was bought at the price of opium addiction among people in China. Furthermore, the dependence of industrialization and unprecedented economic growth on fossil fuels means that its record also includes the health of all people today and in the future who are and will be affected by climate change. Thus, while economic growth has enabled many people to live far longer and healthier lives than earlier generations, these benefits have been achieved at the price of health damages of other people, living at other times and places, whose lives have been cut short or burdened with contingent disability and disease.

Shifting the focus to alternatives to the growth paradigm, Jeremy Caradonna provides an overview of the recent history of the concept of sustainability. The controversy whether environmental sustainability and economic growth are compatible or inherently contradictory reaches back to the beginnings of modern environmentalism. It became particularly virulent in the debates and

controversies leading up to the concept of sustainable development developed in United Nation reports such as the *World Conservation Strategy* (1980), *Our Common Future* (1987), and *Agenda 21* (1992). Sustainable development is often regarded, both in politics and by scholars, as a departure from the status quo of industrial growth and as the most promising alternative to the growth paradigm. Caradonna disagrees with this interpretation. He argues that, while environmenally more sensitive, this idea was still largely shaped by neoclassical economics and conventional Westernized and GDP-oriented development thinking geared toward increasing material consumption and the integration of localized economies into monetized international markets. Although there were many people involved in sustainable development who criticized growth for depleting resources, generating pollution and destructive technologies, facilitating urbanization, unraveling traditional societies, and creating the conditions for unsustainable population growth, their voices were largely drowned out in the 1980s. This was aided by the ambivalence toward economic growth in key texts, which were based on the conviction that, given the political will, economic expansion, social justice, and ecological sustainability could be brought into harmony. While economic growth was still controversial in the milieu of 1980s-era sustainable development, by the 2010s it had developed into an adversary concept of many environmentalists, as exemplified in the degrowth movement. Characterizing the relationship between economic growth and sustainable development as an "incompatible couple," Caradonna concludes that while originally not intended as such, the norm of sustainability ended up benefitting the status quo and essentially failed to change the course of unsustainable global development.

Deepening the discussion of alternatives, in the final chapter of the volume, Barbara Muraca and Matthias Schmelzer trace the origins of what has recently been discussed as "sustainable degrowth." While discussions critical of growth reach as far back as the origins of growth thinking, they became particularly pronounced in the 1970s, which saw the emergence of the ideological precursors to current degrowth discussions. Muraca and Schmelzer highlight the importance of the various cultural contexts, which formed the backgrounds for the different evolutions of debates critical of economic growth. Degrowth can be understood as the most radical strand of a broader debate in recent years that publicly criticizes economic growth and the related processes of ecological destruction and increasing global inequalities, while at the same time proposing and demanding alternatives. Next to being an intellectual and academic position, degrowth is also a social movement, which has spread since the 2000s from Southern Europe to other industrialized regions and aims at the development of more equitable and sustainable lifestyles through the planned contraction of the current mode of economic activity, while also challenging its ideological legitimation (productivism, economism, developmentalism). While discussions critical of growth reach as far back as the origins of growth thinking, they became particularly pronounced in the 1970s in the context of the protests of 1968 and the emerging environmental

movements. This was also the context of the ideological precursors to current degrowth discussions. Today's degrowth movement sees its origins in the Southern European strand of growth-related critique, as the current literature on the "sources" of degrowth shows. However, other streams of critique of and alternatives to growth have been very influential in what today can be considered an international degrowth movement. While also analyzing and discussing the Southern European sources of degrowth, in their chapter Muraca and Schmelzer enlarge the perspective by adding two other, partly overlapping variants of radical growth critique: a specific Anglo-American stream and a German-speaking one. As the chapter shows, the degrowth movement goes beyond the traditional critique of growth which addresses monetary (critique of GDP as a measure of wellbeing) and material (environmentalists' perspective on planetary boundaries and climate change) growth. Instead, its criticism addresses the structural and cultural function that growth plays for modern, capitalist societies and envisions a radical transformation of basic societal institution.

This volume presents an early contribution of the historical discipline to the question of economic development and human wellbeing of the future. However, much needs to be done and many questions can only be addressed insufficiently so far. Some of them concern the origins of growth thinking: Most existing research takes a top-down approach, focusing on philosophers, experts, governments, and organizations, suggesting that the pursuit of economic growth was a product of a ploy by the powerful. Too little is known, so far, about how the growth paradigm has resonated with existing ideas and wishes of populations in different parts of the world. A discussion of more bottom-up perspectives, including anthropological and/or psychological aspects would be helpful in this regard.

Similarly, more research attention is desirable for the unclear or ambivalent record of past economic growth. To what extent has growth, measured as GDP growth or otherwise, been beneficial or harmful and for whom (country and region, people's position in systems of domination such as class, *race*, or gender)? Again, current debates on how economic growth played out tend to disregard the bottom-up perspective by either uncritically assuming a positive effect (the classical modernization narrative) or ignoring possible positive effects (parts of the degrowth narrative). What have been short-term and long-term effects, positive and negative beyond glorification and demonization? To what extent can this experience be projected into the future? How can past reactions to limits – both external and internal – serve as a blueprint for the future? And which "past" is meant and how do lessons change when different selections of the "past" are chosen?

Finally, our understanding of historical alternatives to growth societies is underdeveloped, to say the least. Thus case studies of alternative approaches to economic wellbeing would be helpful to understand the alternatives available to us in the present and the future. Discussions would be aided by a better knowledge about the historical contexts in which alternatives emerged and how they related both to competing concepts and to lived realities of the time.

Various historical approaches could unearth historical experiences beyond growth that could inform the currently ongoing search for social structures of non-growing or degrowth societies. Are there historical examples of non-growing societies that conform to our standards of liberty and justice, and which social and institutional arrangements were important? What can we learn from historical processes of economic decline? Which historical experiments with alternative economies (i.e. the cooperative movement, bottom-up processes of economic coordination) worked well or failed and for what reasons? What were past utopias about non-growing societies that could inspire current discussions and which historical opportunities in this regard were not realized? While *History of the Future of Economic Growth* cannot answer all these questions, we hope that it will contribute to a critical discussion of these questions among scholars and in the general public.

Notes

1 While GNP measures the output generated by a country's enterprises (whether physically located domestically or abroad), GDP measures all the output produced within the borders of a country (including the output produced by foreign firms). Until the 1960s, GNP was more widely used, but GDP has since become the standard measure. Furthermore, national income differs from GDP in various ways, most importantly in so far as GDP subtracts the depreciation of capital. See also the contribution of Lorenzo Fioramonti in this volume.
2 Regarding biodiversity loss, climate change, and the nitrogen cycle, the other boundaries relating to atmospheric aerosol loading, chemical pollution, ocean acidification, stratospheric ozone depletion, the phosphorus cycle, global fresh water use, and changes in land use.

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