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The future: Thanks for the memories

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Introduction: what is “neoliberalism” and is there life after “neoliberalism”? 

The broad remit contributors to this collection have been asked to address is the nature of post-neoliberal economics. While a post-neoliberal economics does not presuppose a post-neoliberal economy and society, since a discipline can be oppositional, the need for a post-neoliberal economics is not just a concern for scholastic failings. It is rather grounded in an urgent need to address a world gone wrong, rather than merely a discipline gone astray. Neoliberalism may be theory and the world always exceeds the bounds of any given theory, but equally neoliberalism is used as a rough and ready referent for an identifiable reality, a reality that is observably in crisis and where neoliberalism (its features as theory) have played multiple facilitating roles. Over the course of this essay I will be using the term neoliberalism as a placeholder along these rough and ready lines in so far as it can serve as a point of departure to consider possible futures. My main subject will ultimately be the need to reconcile post-neoliberal economics to “climate emergency” and the growing prominence of “Green New Deals” (GNDs). But let us begin with some comment on this “neoliberalism”.

The term neoliberalism has not just been quasi-descriptive, the theory has served to legitimate a concatenation of policy over several decades since the 1970s. It is, in this sense, a project. David Harvey provides perhaps the best known account of neoliberalism:

"Neoliberalism is in the first instance a theory of political economic practices that proposes that human well-being can best be advanced by liberating individual entrepreneurial freedoms and skills within an institutional framework characterized by strong private property rights, free markets and free trade. The role of the state is to create and preserve an institutional framework appropriate to such practices. The state has to guarantee, for example, the quality and integrity of money. It must also set up those military, defence and legal structures and functions required to secure private property and guarantee, by force if need be, the proper functioning of markets. Furthermore, if markets do not exist (in areas such as land, water, education, health care, social security or environmental pollution) they must be created, by state action if necessary. But beyond these task the state should not venture. State interventions in markets (once created) must be kept to a bare minimum because, according to the theory, the state cannot possess enough information to second-guess market signals (prices) and because powerful interest groups will inevitably distort and bias state interventions (particularly in democracies) for their own benefit [...] Deregulation, privatization and withdrawal of the state from many areas of social provision has been all too common. [And] In so far as neoliberalism values market exchange as ‘an ethic in itself, capable of acting as a guide to all human action, and

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substituting for all previously held beliefs’, it emphasizes the significance of contractual relations in the marketplace. It holds that the social good will be maximised by maximising the reach and frequency of market transactions, and it seeks to bring all human action into the domain of markets” (Harvey, 2005: 2-3).

The world, of course, has not stood still since Harvey wrote these words. The UK, for example, currently has, by inclination, one of the most right-wing governments of the last 100 years and certainly since Margaret Thatcher was Prime Minister, and yet that government has accommodated to various forms of intervention that sit awkwardly with Harvey’s original account – including early initiatives to reimpose state control of the rail network in England and a generalised commitment to “level up” the economy. President Biden, meanwhile, recently pronounced “trickle down” economics a failure and is seeking to turn the US economy towards a Green New Deal and massive infrastructure investment and welfare reform with a leading role for the state.

Given there is a difference between theory and reality and given theorists argue that neoliberalism is a project it would, however, be misrepresentation to suggest proponents of the concept of neoliberalism have a reductive sense of its characteristics. Proponents, such as Philip Mirowski, tend to emphasise that a key feature of neoliberalism has been its variation and opportunistic malleability (Mirowski, 2013). Proponents of Marxist influenced state theory and particularly those influenced by the French regulation school, such as Bob Jessop emphasise its role as an ideational framework or “political capitalism” through which (as Mirowski also notes) capitalism responds to its own crises, enabling spatio-temporal “fixes” (a term favoured by Harvey) that perpetuate the accumulation process. Similarly, Jamie Peck argues that as the project spreads it evolves, hybridises and “fails forward” (Peck, 2013). This range and flexibility, of course, inevitably leads to the criticism that the term itself becomes meaningless, since it becomes a catchall concept – “loose” in a pejorative sense rather than referring to meaningful adaptions and evolutions (a debate explored by Bruff and Tansel, 2019). But for theorists such as Harvey, Jessop or Peck the term has always been conditional, critical and used under advisement along with various other ways of addressing capitalism. Nothing in their work suggests that it becomes impossible to distinguish a neoliberal and a post-neoliberal world. In any case, it is consequences over recent decades rather than tentative signs of possible reversal in the type and degree of legitimate state activity that is most significant in getting us to where we are now.

So, where exactly are we?

To reiterate I am not suggesting the state of the world reduces merely to a theory of neoliberalism – a state-led project of marketisation conjoined with a shift to increasing emphasis on individual responsibility, while favouring the interests of capital and corporations. I am suggesting that this theory has been a significant thread in producing the state of the

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3 In keeping with some of Mirowski and Plehwe (2015), Jessop (2016) historicises neoliberalism, identifying its beginnings in the 1930s, but growth in the 1970s, but also explores 4 variants of neoliberalism: neoliberal system transformation (e.g. post-Soviet states); neoliberal regime shift (e.g. the collapse of post-War Atlantic Fordist settlement); externally imposed neoliberal conditionalities along Washington consensus lines; and more limited accommodations where other forms still dominate (e.g. Nordic regimes). Harvey’s “spatial-fix” concept theorises how capitalism over-accumulates and then is forced to expand geographically (with various consequences).
world as we know it and in the end it is the state of the world that concerns us far more than the theory only. “Is there life after neoliberalism?” implies a problematic state of the world in which this project has played some significant role. Let’s consider some familiar markers for that “state of the world”.

While neoliberal theory has never been an adequate account of human agency or of social reality, it has dominated discourse over the past forty years in which various effects on the organisation of economy and society have been observed. Computerisation and information processing facilitated a “third industrial revolution”, which transformed communication, administration, bureaucracy, management systems, networks, finance and (conjointly with robotics) production lines. However, while connectivity has grown, market competition has not, at least in any simple sense, since the period has been dominated by the emergence of oligopolistic activity from huge multinational enterprises who combine offshoring and outsourcing, in complex global value chains. International trade has grown as a proportion of aggregate economic activity, production processes and labour profiles have become post-Fordist and ownership has become enmeshed in a broader process of “financialisation” as finance has grown in scope, scale, complexity and influence. And one might note there are quite different takes on the last forty years…

On the one hand…

On the one hand, there is a strand of thinking that suggests the past forty years has been one of progressive civilisational change: the collapse of highly oppressive regimes in the Soviet Union and Eastern Europe, a general increase in the number of democratic countries, the “opening” of China, a long period of economic growth within a growth in economic globalisation; a collective commitment to pervasive development via the Millennium Development Goals (MDGs) and subsequent Sustainable Development Goals (SDGs) under the auspices of the UN, and achievement of various of those initial goals – a major decline in extreme poverty, increases in proportions of the world population receiving a primary education (especially girls); growth in access to sanitation, clean water, family planning and medical services and so on. From this point of view, overall the world is bursting with progressive achievements – though much of this is under-appreciated since our perception is distorted by a news system that favours the scandalous, vicious, violent and disastrous or “the bad over the good”.

Moreover, science and technology have made incredible advances in the last forty years that have transformed science fiction into fact. A fabulous array of distractions, entertainments, experiences, goods and services are available and while instant gratification is a norm of questionable value it requires a dour distortion of the protestant ethic to prefer a world without this array of marvels – though more needs to be said about this. In any case, change has not been merely frivolous, all human knowledge can now be at our fingertips… and that knowledge extends to amazing advancements across the sciences, including medical science and the latter has, in turn, helped extend life expectancy, as has transformations in farming and nutrition. Moreover, we have not just extended life expectancy, recognition has extended. Though there is nothing new about the idea of intrinsic value or dignity of human personhood and thus the case for equality of rights before the law, during the last forty years the normative power of this claim has grown cumulatively and ideas to the contrary have become ever more defensive or evasive – albeit this too is something about which more needs to be said (see later). In any case, it is for all these reasons and various others that there is a strand
of thinking (Pinker, 2012 etc.) that suggests as a collective our species has never been safer, better educated, long lived or peaceful – that possible lives are open to us that not even kings could dream of. This, leads to the inevitable “on the other hand” that complements any use of the phrase “On the one hand”.

On the other hand...

So, on the other hand, while, according to the World Bank, the global economy has expanded in value from GDP $9.971 trillion in 1979 to $87.735 trillion in 2019, the rate of economic growth has slowed compared to the prior post World War II period in both the global North and global South (especially if China is taken as a separate distorting case). Moreover, reference to a global North and global South serves to highlight that development has been uneven and discriminatory. As the work of Robert Wade, Jason Hickel and various others indicates few countries have transitioned into the upper echelons of wealthy countries – just a handful mainly in East Asia among more than 190 UN members and the overall relation between the global North and global South (though beginning earlier than the neoliberal period) has seen a transfer of wealth from poorer to richer countries (Hickel et al 2021).

There is a manifest structural divide that tends to keep some places poorer than others and development as “catch-up” is illusory (Wade, 2020; Hickel, 2017). Those places that have become manifestly wealthier have all had exploitable special circumstances combined with some form of developmental policy that bears little resemblance to the prescriptions of neoliberalism – notably its core economics of free movement of capital and exploitation of comparative advantage within free markets. In any case, while it is important not to denigrate the difference that even small changes make in situations of extreme poverty, the Millennium Development Goals represent an extraordinarily low bar for development achievements when one considers systematic effects within a “Washington consensus” context such as the withdrawal from constructive structural reform (to land ownership etc.) and replacement by destructive structural oppression (monetary and fiscal, where conditionality has been imposed over the neoliberal period). The “Washington consensus” may have been modified in recent years but there is more continuity than disjuncture and this is also the case for the Sustainable Development Goals. The SDGs have emerged in a period where there is growing recognition of a planetary crunch point produced by the form and trajectory of economies and yet the SDGs essentially prescribe more of the same – built around growth, technological fixes, education and human capital but without fundamentally questioning the structuring of the system (Weber, 2017).

The abstract to Hickel et al (2021) summarises this as: “According to our primary method, which relies on exchange-rate differentials, we find that in the most recent year of data the global North (‘advanced economies’) appropriated from the South commodities worth $2.2 trillion in Northern prices — enough to end extreme poverty 15 times over. Over the whole period, drain from the South totalled $62 trillion (constant 2011 dollars), or $152 trillion when accounting for lost growth. Appropriation through unequal exchange represents up to 7% of Northern GDP and 9% of Southern GDP.”


Note: it is also important not to propagate the myth that development is a response to squalor and poverty as though “less developed” or “under-developed” places were necessarily locations of deprivation and suffering – to which an externally defined development agenda was a panacea – the very idea of “under-development” has roots in colonial exploitation and then the early Cold War (Truman etc.) and “development” has often involved destruction of indigenous stable socio-economies in the name of progress. The economics of development have been deeply politicised and the state and nature of progress is a highly contested issue.
If one considers the form and trajectory of economies then economic growth over the last forty years in the global North has involved the diversification of consumption, a general increase in the proportion of final consumption as a constituent of economic value and a growing significance of consumer goods and services in economic activity. Concomitantly employment has transitioned into retail, leisure, tourism and hospitality, distribution, cultural goods (including digital components such as gaming), construction and services, especially financial services. Notably, wages and incomes have slowed and wages are a smaller proportion of larger economies, but this has generally combined with greater levels of imports for consumer goods (matching the growth of international trade as a proportion of total economic value on a global scale). As such, importation of consumer goods (and also some foodstuffs from industrial farming) produced at lower costs has partially underpinned growing consumption – for example, despite slowdowns in wages and incomes the global North consumes (per capita) more clothes annually than in the past and buys more food, but both are smaller proportions of income than in the 1970s. Besides this background deflation, consumption and economic growth have also been underpinned by increases in personal debt and thus debt-dependence facilitated by a system of liberalised finance, and finance has become a significant sector in itself, not just offering a wider variety of debt products to individuals and corporations but also morphing into a complex finance system, producing and trading a host of financial assets and instruments in “shadow banking” chains.

For critics of neoliberalism...

From the point of view of neoliberalism as a project, however, the real significance of all of this is as a politicised “spatial fix” of capital accumulation. Beneath these changes lies a shift in relative power from labour to capital, productive capital to finance and with a greater share of economic value flowing to capital and less to labour. The shift, however, is not a matter of momentary coincidence, rather it reflects conjunctural convergence of preferences of powerful actors whose interests have won out and this is reflected in an array of systemic features built into globally and regionally powerful organisations and institutions, from the WTO, the IMF and World Bank, to the EU (with its single market and sub-sectoral Eurozone) etc. – there is a price of entry, a price of membership, a price to be paid if rules are violated – defaults are made, restructurings requested, ownership contested, etc. And while it is important not to suggest the global South is homogenous or lacks agency, in the last forty years different countries in the global South have played a variety of roles: as a peripheral location into which speculative capital during periods of excess can flow (with the perpetual threat of destabilising those economies), as a source of low cost labour for offshoring and outsourcing initiatives (especially as an infrastructure of global transportation has emerged around containerisation, special economic zones and highly automated logistically efficient mega-ports and especially as technology has enabled simplified modular production enabling low cost sites to diversify from clothing etc. and into hi-tech assembly), as a source of primary commodities (which in turn become a source of speculative activity for a host of financial organisations) fuelling industrialisation and urbanisation, as a site to process or just dump the waste products of the world (the “illth” of wealth that is otherwise given positive economic value in our curious system of accounting, despite the concept of negative externalities) and finally as a set of emerging consumer markets.

Note: some of this is regional networks of production of components for assembly in given places, but this is still oriented mainly on consumption goods.

Debt of course is not just consumption related. For example student debt is now a major component in some countries.
From the point of view of neoliberalism as a project then, this “spatial fix” has provided the latest manifestation of capitalism’s intrinsic need to grow intensively and extensively – and one does not need to be a Marxist to note that Marx and Engels described this priapic globalising feature (without using the term capitalism) eloquently in the *Communist Manifesto* in 1848. The process is, of course, somewhat different than they could observe at the time since corporations, services and final consumption are more significant; in any case, economies industrialise, incomes grow, a middle class emerges, society changes, consumption becomes more widespread, the economy becomes service-oriented, and under the auspices of corporations, governments, and supranational organisations industrialisation is shifted to other countries; there is continuous domestic economic expansion and this spreads to those other countries, which have in turn industrialised and who then seek to emulate the consumption pattern of “advanced” countries. Here, there is much more that might be said about space, place and difference – regarding varieties of capitalism, growth models, authoritarian hybridisations, the nature of a monetary economy etc. and metaphorically speaking a great deal of ink has been spilled on these debates by post Keynesians, radical political economists and global political economists and so on, but in a “rough and ready sense” the previous paragraphs ought to be recognisable as a confluence of tendencies and as generally observable manifestations – the state of the (“neoliberal”) world. The point though is that this “state of the world” leads to a quite different set of identifiable negative characteristics and points of emphasis than the more positive “underlying progress” way of describing the past forty years – an “On the other hand”…

As the IMF notes, there have been several hundred financial and banking crises since the 1970s, of which the global financial crisis (GFC) of 2007-2008 is only one (if, obviously, the most widespread). For theorists of financialisation, these are not unforeseeable “shocks”, but rather manifestations of a pathological system of unstable growth built around debt cycles. The austerity response to this situation combined with a renewed commitment to “financial deepening” with relatively little change to the purpose of banking and finance has exposed and/or exacerbated a host of identifiable characteristics. Over the last forty years the increase in the relative share of capital to labour in economic value has been paralleled by the growth of extreme wealth and income inequality. This has varied by country but is observable to some degree almost everywhere, as is some degree of erosion of collective rights and representation of workers and reduction in spending on and narrowing of provision of welfare. The last ten years have intensified the effects of this in the global North: an increase in working poverty, a proliferation of adverse and previously atypical working conditions and practices (zero-hour and flexible work contracts, platform-based pseudo self-employment, punitive use of sub-contraction etc.), job insecurity and a more generalised anxiety regarding the perpetual threat of hardship that spreads far beyond those living and working “precariously” or those living in easily identifiable areas of longstanding deindustrialisation. The Covid-19 pandemic, meanwhile, has again exposed the structural fragilities of contemporary society and economy – those compelled to work by penury and precarity who were then exposed to the virus, those working in social care, public transport, delivery and nursing hailed as heroes in the press but treated as dupes in their pay packets – the spectacular increase in wealth of the few, the scope for those few to grow their wealth with nothing but contempt for the tax systems that bind everyone else…

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9 This sentence is adapted from Gills and Morgan (2020a).
10 For issues see the edited text, Fullbrook and Morgan (2021).
11 For range of issues on the development of tax avoidance and economics see Morgan (2021) and its reference list.
A world gone wrong…

Clearly, if one compares the strand of thinking that highlights the positives of the last forty years and that which highlights the negative, they are not discussing different worlds. Rather they have different emphases and the negative – to state the obvious – takes a critical stance whereas the positive tends to implicitly work within the limits of the system as is. Importantly though, criticism is not “news from nowhere”, it is not free floating. Rather, it is rooted in proposed explanatory mechanisms or sets of structural relations with attendant powers and potentials, which become ways of acting that ingrain tendencies and consequences.

So, we may have made amazing progress in some forms of science and technology and this has created possibilities in the world but we have done so in a system where we do not just use these technologies and their offspring, we consume them and we do so in a system of consumerism. Goods are designed to be instantly disposable, short term, fashionable or seasonal, unrepairable, rapidly obsolete, and readily replaced according to any of a number of rationales, most of which encourage us to value the momentary process of consumption i.e. the act of acquisition over the long term use in ownership. With this come socialised identities and lifestyles that can never be settled because the very point is to keep us engaging in consumption. The psychology here is subtly different than merely acknowledging that there can be something valuable or entertaining in the use of goods or services. It requires a narrative that whispers we are incomplete, dissatisfied and restless and the next act of consumption will either distract us from that sense or be the thing that momentarily completes us – and, of course, marketing, advertising and the various strategies that manufacture demand are not new, but they are more pervasive in a contemporary “consumer” society where it is the diversity and volume of consumption that keeps the economy going.

Moreover, “keeping the economy going” implicates a whole set of structural dynamics. Again, a subtle difference of perspective arises, this time between an economy which allows us to use what we create in fulfilling ways and an aberrational or adverse structuring of purpose and the hierarchy of what matters – human well-being or keeping the economy going? In any case, a reappraisal of what might otherwise look like progress leads to an expanding set of questions regarding the role and purpose of consuming and how it is embedded in an economy and its employment relations and how this in turn is embedded in a society and an “environment”. Capitalism has always been an accumulation process, but since the advent of macroeconomics and the collection of macro data it has become more oriented towards policy that targets continuous growth and neoliberalism has worked with this. So, the question, “what have we done with the amazing advances in science and technology and with forty years of time?” might be answered with, learned to consume more and faster within throwaway cultures which demand work for the purposes of keeping the economy going and where growth has become the explicit goal as though this was the necessary correlate of “progress”. The collateral damage of these observable mechanisms and trends has been debt-dependence, pressurised working lives that increasingly damage mental and physical health and observable distributional consequences. As numerous data sources indicate, the vast majority of increases in economic value have been captured by a few well-positioned corporations and persons. Concomitantly, in socio-economic terms, the GFC and its aftermath have seemingly intensified a longer trend decline in social mobility – and this has occurred across the OECD and is most observable as an inter-generational decline. So, for

12 For classic critique of the kind of theory of consumption that pays insufficient attention to its material components and roots in systems of provision see Fine (2002).
critics of neoliberalism, looking at the state of the world is to see a “rigged system”: one which genuflects to aspiration and hard work, and valorises wealth creation while enabling opportunistic wealth capture, one that privileges the few among the many in the global North and then the global North over the global South…

Unsurprisingly then, the post-GFC period has witnessed growing cynicism and questioning of the legitimacy of the system(s) we live in: in the US and UK, for example, competent and principled politicians are seen as the exception not the rule, and venal self-serving mendacity is expected from, rather than reviled when exhibited by, politicians (who claim they take “full responsibility” and then neither resign or change their behaviour). A negatively inflected concept of “elite” has entered ordinary language use, referring to a privileged few (and Left and Right have quite different ideas of who these are), while more pointed terms such as oligarchy, plutocracy and kleptocracy have also entered the lexicon and are deployed to connect people and places as far flung as Moscow, London and Lagos, the Cayman Islands and Wall Street… The notion that expertise carries authority has also come into question, partly through reduction to or conflation with plunder of the state and the corrosion of public standards. 13 There is a sense that expertise is less about vocation and sense of public service and more about careers, opinions for hire, revolving doors, maintenance of any observable status quo and “justifying” the unjustifiable. And all of this has been readily weaponised through social media – whose attention-scoring algorithms isolate, silo and augment what our “clicks” suggest we want, and whose rules of communicative engagement can be quite different than face-to-face conversation might create. No fact is immune from a strongly worded belief and no conspiracy is too absurd to be denied replication. All human knowledge may, in principle, be at our fingertips, but new technology has intensified old problems of IP ownership in the context of monetisation of data as digital currency.

In any case, the neoliberal era seems to have killed one of democracies most important ideological tenets – the idea of meritocracy. Race, gender and class have always mattered – and so the idea of meritocracy has never been without its critics – but the abuse and transmission of privilege now hide in plain sight, even as norms have turned to diversity. And division and diversity have proven quite capable of angry co-existence. Perhaps most significantly, reactions against the sense of a rigged system have themselves been politically divisive – blame shifting, popularism, strident nationalisms and so on. One of the great ironies of this is that the Right has undermined the Left’s traditional claim to be about solidarity and the Right has used this to peel off traditional elements of support – via: they don’t care about “real people”, they don’t speak for you, they patronise you while serving themselves – ironic since the main architects of this can hardly make the counterclaim that they demonstrably care more. Ultimately then, the sense of progress through extended recognitions one might otherwise associate with the last forty years looks frayed – as different groups adopt the language of “culture wars” and contest identities, authenticities and the right to speak and be heard. Social fracture then, seems particularly pronounced today – albeit this looks different in places like the USA, Russia, Hungary, Brazil and the UK than it does in Sweden, Germany or elsewhere. Overall though, there is widespread discussion of democracy rotting from the inside and democracy in retreat.

13 For an excellent book on oligarchy and looting the state see Wylie (2020).
“The diabolical double crisis”

The suggestion of a “world gone wrong” brings us to contemporary discussion of solutions. The ultimate context here is that the “neoliberal” decades have rendered economies individually and collectively more resource and energy hungry and waste creating. This does not imply all people and places are equally sources of or responsible for this. Clearly, a growth in world population from around 4.4 billion in 1979 to about 7.8 billion in 2020 cannot be without consequence, but it is a fraction of the world’s population, a few countries and a small coterie of corporations that are responsible for the majority of resource and energy use – with some variation if one takes a longer historic-cumulative or contemporary approach (the latter also includes China and to a lesser extent India). In any case, according to Earth System scientists we have now entered a new post-Holocene epoch, the Anthropocene – where it is humans (or more accurately economic systems developed by our species – leading to further terms, such as the “Capitalocene”) who are the decisive influence on the planet. Climate and ecological breakdown are now well advanced and using the “planetary boundaries” (PB) framework, we have in the last forty years transgressed the “safe operating parameters” of 3 (in work published 2009) then 4 (in work published 2015) and (as of 2021) likely 6 of 9 processes, which in combination comprise the Earth System. During the Holocene each of these processes maintained itself as a complex system within broadly stable limits – our activity, however, has acted to create forcing effects, leading to potential positive feedbacks, pushing processes out of these stabilisation situations.

The most well-known of these PBs is effects on the climate system from greenhouse gas (GHGs) emissions. The main metric for this is parts per million (ppm) by volume atmospheric carbon dioxide. The pre-industrial revolution level is typically reported as 280 ppm. Increased atmospheric CO₂ and equivalents lead to heating of the planet and this is calculated using “climate sensitivity” measures (the increase in average global temperature per doubling of atmospheric CO₂ above the pre-industrial level i.e. an increase from 280 ppm to 560 ppm). Calculations are estimations and currently put likely heating between the lower end of 2°C+ and around 4°C per doubling in the next generation of models (which are likely to comprise the sixth IPCC “assessment report” due 2022), though the consensus is that greater heating effects cannot be discounted. This has led some climate and Earth System scientists to posit an irreversible “Hothouse Earth” scenario along PB lines. Moreover, adverse effects, such as greater frequency and severity of extreme weather events, are being observed at lower than anticipated average temperatures (global average heating is currently about 1.2°C above the pre-industrial level) and consensus is growing that the increase in atmospheric CO₂ is riskier for the climatic system’s effects than previously anticipated. The 2009 PB work set a “safe” boundary at 350 ppm to ensure that stabilisation effects would win out and future temperature rises were likely to stay below 1°C, but reported a contemporary figure of 387 ppm.

However, the direction of travel is not only still moving away from the 350 ppm boundary but seems set to exceed a global “carbon budget” consistent with both 1.5°C and 2°C in the relatively near future, with projections estimating rises of 3°C and higher through the rest of

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14 See the interview Steffen and Morgan (2021) and its reference list.
15 Note, the dataset used for the standard global average surface air temperature measure typically starts from 1850-1900, while other measures for ppm begin with the start of the industrial revolution in the late 1700s. Note also that average temperature changes are not weather – more frequent and severe extreme weather events, such as heatwaves, droughts, storms and tornadoes (and consequences such as wild fires, crop failures etc.) occur on the basis of average temperature changes effects on and within climate systems.
the century and into the next. The UK Met Office estimates 417 ppm for 2021, which is 30 ppm higher than the 2009 figure and 50% higher than the pre-industrial level and while it took around 200 years for a 25% increase it took just the last 30 for this to kick on to 50% in our resource and energy hungry and waste creating world. According to the 2020 UNEP eleventh “emissions gap” report, meanwhile, annual global emissions reached a record high in 2019 of between 52.4 and 59.1 gigatons (Gt) CO₂ and equivalents (depending on the measure, and with fossil fuel emissions estimated at 38 GtCO₂ – also a record high). The Paris Agreement December 2015 set the goal of keeping heating well below 2°C, and ideally at 1.5°C (Article 2 (1a)). And it is because of growing concern regarding meeting the goals that the IPCC in its 2018 special report called for a 45% reduction in global carbon emissions on 2017 levels by 2030 with a view to “net-zero” by mid-century. In any case, we have now entered a period of recognised “climate emergency” that demands rapid and pervasive “decarbonisation” (which is to say nothing of the need to address the wider range of ecological destructions and disruptions to the biosphere) and this has translated into a host of initiatives.¹⁶

Climate and ecological issues have always involved an odd conflation between economy as the source of the vast majority of problems and economic activity as the motor or mechanism of any solution to those problems. As most readers will be aware, over the last forty years, environment and sustainability have been mainly framed as economic costs to be incorporated (as “negative externalities”) and managed, as property rights that can be exploited once recognised (in “carbon trading” markets) and as, via technology, a subject for diversification of economic activity and subsequent “dynamic efficiency” effects i.e. a business opportunity – and dominant modelling systems for “scenario pathways” work with this as background, using “damage functions” and concepts like “social cost of carbon” to estimate lost GDP growth within an otherwise growing economy (in turn used in conjunction with “discount rates” to influence policy timing for mitigation and adaptation initiatives – and these ultimately treat heating of the planet as a manageable cost-benefit problem – leading to odd terms such as “optimal warming”).

In UNEP discourse and elsewhere during the last thirty years or so, solving climate and ecological problems has been typically referred to as moving beyond “business-as-usual” and yet the UNEP ten-year emissions gap summary report states that total global emissions towards the end of the last decade were about what they would have been had there been “no policy” (Christensen and Olhoff, 2019). The main response to this has been for most contributors to policy and debate across the political spectrum to call for greater urgency of action and more rapid investment in the form of variants of “Green New Deals” (GNDs). These envisage a transformed energy and transport infrastructure based on electrification and renewables, major changes to agribusiness and land management (e.g. extensive tree planting) and a new manufacturing sector harnessing the latest (“fourth industrial revolution”)¹⁷ technology to produce within a more “circular economy” for a more ecologically aware consumer, eating differently and living in new or retrofitted lower impact or climate resilient housing stock.¹⁸ The more corporate-friendly version of this envisions some minor modification to “business-as-usual”, but there is also a more radical version of GNDs. Both, in different ways, invite the question, are they capable of solving the fundamental problem at hand? i.e. the scale and impact of economic activity on the planet. Here, it is important to keep in mind the obvious fact that one does not negotiate with the planet, one either does

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¹⁶ See Ripple et al. (2021).
¹⁷ See Morgan (2019) and its reference list.
¹⁸ This sentence is adapted from Morgan (2020a).
what is necessary to maintain its parameters within limits which are conducive to life (as we and other species know it), or one does not. A post-neoliberal world then, requires some reconciliation between what must change to address climate emergency and ecological breakdown and what we want to change about the system that got us to where we are.

For our purposes it is the radical version of GNDs which are more interesting, since these seek system transformation but still invoke what Andrew Sayer refers to as a “diabolical double crisis” dilemma – a tension between solving the climate crisis and solving the crisis of highly unequal socio-economies. The more radical version views GNDs as an opportunity to address the observed pathologies of globalised neoliberalism. Given that the last forty years have encouraged market-based solutions to climate and ecological problems and these have manifestly failed to transcend “business-as-usual”, the more radical approach to GNDs envisages far greater scope for the state, and public spending and policy intervention to lead and shape major investment initiatives. Curtailing the adverse effects of extreme inequality provides a justification for a more steeply progressive approach to tax policy (including carbon taxes and forms of policy that are most disruptive to fossil fuel interests) and new forms of wealth taxes on the very rich, allowing for redistribution as well as financing of investment (though this is dependent on whether one is more or less an advocate of modern monetary theory). Thereafter, the basic rationale is that “greening” the economy offers the prospect of higher skilled jobs in transformative industries, in turn encouraging renewal of domestic manufacturing etc. – and it is supposed that this will reverse some of the prior “offshoring” trend, leading to “reshoring” or reindustrialisation, a shift in the balance of trade between imports and exports with greater scope for exports and, most importantly, employment growth in higher value-added sectors with greater job security – creating a virtuous circle of higher demand for and greater bargaining power placed with, skilled labour and thus higher wages and incomes, whose further consequence via multiplier effects is greater capacity to fund and support better standards of social care, retirement and welfare systems, as well as a “pre-distribution” effect that reduces the need for debt dependencies and thus some aspects of financialisation (providing, inter alia, for a political renewal of “faith in the system”).

Clearly, then, radical GNDs run counter to many of the observed features of neoliberalism and thus offer a vision of a post-neoliberal world (albeit one with a mainly global North theme and perhaps presupposing some kind of “winning out” in global competition to dominate green technologies). At base, however, radical GNDs are, in the main, contemporary versions of the Keynesian approach to reforming national capitalism, built in this case around “green growth” as a solution to climate emergency. While offering an alternative to many of the features of neoliberalism is obviously an attractive prospect, the problem, however, is that the growth aspect of GNDs sits awkwardly with the material limits of the world. Sayer expressed the problem concisely in his Why We Can’t Afford the Rich and this predates the transition from a dire climate situation to declared climate emergency (and so has only become more relevant):

Given that the rise of the rich and the related slowdown in the growth of ordinary people’s wages and salaries have, together, stalled the global economy, slowing the growth of demand and restricting opportunities for profitable productive investment, we should cut off or tax the rich’s sources of unearned income and redistribute wealth downwards [as well as facilitate more equal wealth and income across society, which eventually reduces the

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20 For different takes on MMT see the edited text Fullbrook and Morgan (2020).
need to redistribute]. This would boost demand and allow economic growth to resume… In other words, redistribution plus growth [it seems at first sight] is the answer… [But] such a policy would accelerate global warming, indeed it would make runaway global warming and its dire consequences inevitable… We are therefore in a diabolical double crisis (Sayer 2015: 327)…

[W]e can’t afford to perpetuate an economic system predicated on inequality and endless compound growth. The dream of ‘green growth’, with capitalism delivering sustainability, is like selling guns to promote peace (Sayer 2015: 341).

There may be a difference between material growth and economic growth (since the latter is a measure of value in exchange of goods and services in some currency), but ultimately an economy is a material process. It uses energy to transform some things into others, and this requires use of resources and waste creation. The bigger an economy is the more energy and resources it tends to use and waste it creates. There is no evidence that “decoupling” (in the form of energy intensity $GDP$ measures etc.) can offset the observable effects of continually expanding the scale and intensity of economic activity as we know it, and while there may be some scope for “efficiency”, an economy cannot be “immaterial”. We live on a finite planet. As such, as ecological economists and activists have argued for years, targeting continual economic growth is to target the impossible and invite disaster. We are now in a situation where we have hit and in some cases exceeded limits. Our energy systems are a key component in this, but even if these could be transitioned to non-fossil-fuel forms (and the evidence is against this being possible at current scales in the relevant timelines), great swathes of economy are built around carbon and generate emissions (fertilizers, meat, concrete, steel, plastics, synthetic textiles etc.). As such, more growth cannot be the answer to our state of the world and “green growth” is in essence an oxymoron when applied on a planetary scale, given the situation we are now in.

The implication then, is that imagining, organising and arguing for the kinds of post-neoliberal socio-economies we might want has to start by recognising what is prudential and feasible. GNDs of any stripe cannot ignore this since massive investment to transform the energy and transport infrastructure etc. as a way to renew employment and kick start multipliers invokes growth across the existing system, with its other corporations offering goods and services in an existent economy with socialised tendencies that encourage consumption – higher wages and incomes readily lead to renewal here too. GNDs without some explicit recognition of “enough is enough” risk default towards a “technofix”, since they leave unreconciled the basic systemic problems of a growth imperative, consumerism and accumulation.

“Progressives” are as subject to physical reality as anyone else. This is why advocates of degrowth, postgrowth, social ecological economics and some variants of steady-state economics, argue we need to stop acting like we have choices we don’t have. This, in turn, leads to the issue of what kind of economics can recognise limits, adequately express the nature of economy and still work to address the problematic features of neoliberalism…

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21 See Parrique et al. (2019); Hickel and Kallis (2020).
22 For example, Kallis (2018a, 2018b); Kallis et al. (2020).
An economics that is fit for purpose

If climate emergency indicates anything, it is that we are urgently in need of an economics that is “fit for purpose”. Consider what “fit for purpose” now means. An adequate economics now has to be one that helps us understand the difficult decisions that are likely to confront us in the coming years. On a global scale we are going to have to leave fossil fuels in the ground, restore aquifers and water systems, reinvigorate ecosystems, greatly accelerate reforestation, bring a halt to using the oceans as a dumping site for plastics and numerous other chemical pollutants, reduce acidification of the oceans and so on. But fundamentally, on a global scale we are, unless there is some miraculous technological miracle, going to have to do less. That means we cannot continue with throwaway consumerism or with continual economic-material-energy growth. We are going to have to use durable, replaceable and repairable goods, but more fundamentally we are going to have to consider our consumption decisions differently in regard of whether we buy something at all – since this seems basic to “low impact living”. This, however, is antithetical to both the system as is and the mechanisms and interests that currently “keep the economy going”. I may be able to choose not to buy or fly but I cannot create income, employment and alternatives to employment on a system-wide basis – nor can I know unaided whether in fact the sum total of activity is within feasible planetary limits domestically and globally. Only the state in its relations with other states and in its relations with the private sector can know and do these things – working to create the pathways of feasible transition and transformation that parallel activity from all other aspects of society. And yet states are caught between their current evolved and developed interest configurations derived from the neoliberal period and the necessity to address profound and basic problems. Furthermore, there is no such thing as a “self-annihilating corporation” and there is considerable resistance from any industrial sector to recognition that its time has come.

The implication then, is that any adequate economics must recognise the politicised dilemmas of socio-economic organisation. It cannot evade political economy. It cannot evade discussion of the norms that inform the structuring of economy and the mechanisms that induce consequences from those structurings. In any case, only the state can configure its GND to what the world really allows and we are going to have to think about what preserves and stabilises the world, which is a radically different perspective than commodifying it as resources to exploit. And we are going to have to act and act quickly. That something can be phrased as cannot be “evaded” “must” or “have to”, of course, does not mean we will treat things that way and this too is a dilemma – resisting the obvious and refusing to deliberate will not prevent adverse outcomes, it merely increases the likelihood that worst cases become inevitabilities.

While these are not new ideas and certainly not original to me – they are now the reality that confronts us, a reality that mainstream economics has been antithetical to, since it has encouraged unsustainable trends in almost all aspects of economy: climate and resource profligacy (via “growthism” and approaches to theory that have invited complacency regarding if and when to accept that “enough is enough”), extreme inequality, insufficient attention to basic human services, well-being, profit over public purpose, and so on. As advocates of degrowth, postgrowth etc. point out, however, an alternative need not default to some somber theory of parsimony contrasted with neoliberalism’s profligacy. It does not demand we

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23 See the edited text Fullbrook and Morgan (2021); Gills and Morgan (2020a, 2020b, 2020c); Spash (2020).
conceive the future as a second best joyless existence. Rather it offers the prospect of “just transitions”, building a future society and economy reoriented on what really matters to us. GNDs already hold out the prospect of redirecting great swathes of socio-economic activity from consumption to social, welfare and health services, and there is no law of nature that prevents us redirecting attention from consumerism, taking more note of use-value and placing greater value on “relational goods” i.e. the sense of well-being derived from participation – the relation itself – encompassing a wide variety of activities from the informal interaction of friends to more formal communitarian pursuits.24

As psychologists and marketing analysts both note, advertising often works by trying to associate a product or service with some primary positive emotion or activity that induces that emotion – related to family, friends, conviviality and so on, but it is the intrinsic value of these and not the product or service that is indispensable to our well-being. I can be persuaded to want a new shirt and might feel good about it and others may complement me on it, but a shirt cannot throw a party, tell a joke and will not hold my hand, commiserate, console or offer support. Nor can it co-create. Perhaps in the future AI and robotics will add further entities to our societies but this does not change the basic point – that we can think differently about what we need and value and arguably to do so provides a significant step in addressing some of the psycho-social harms of the neoliberal period – what Marxist humanists and sociologists refer to as the anxieties of alienation and commodity fetishism and some philosophers as status anxiety.25 This switch in thinking and preference cannot, however, prevent the anxiety of a bill not paid or the consequences that follow from inability to pay what must be paid in a system that requires payments. Here various solutions have been offered such as universal basic income, but the main point is that we need not think of alternatives to the neoliberal period as second best just because they require us to address limits. And this applies not just to the global North but also the global South since a less extractive and resource hungry global North places fewer pressures on the global South and can be structurally disposed along different lines – beginning with “debt jubilee”, a change in asset ownership dynamics and the payment of just prices (which should not be conflated with minimal marketised versions of “fair trade”).

To do any of these things, however, we need to acknowledge that other worlds are possible, which in turn requires us to reject a primary feature of the neoliberal period – the basic tenet that “There is No Alternative” (TINA), which operates on the basis of the naturalisation of neoliberalism as though it were simply the way things are and how things must be. Still, as I suggested in the introduction to this essay the world does not reduce to theory and in the end we are interested in the state of the world far more than theory only. “Only” of course is an important modifier – since it is important to acknowledge that this is different than “in the absence of” – there is no observation, inquiry, understanding, or explanation of the world which is uninfluenced by the concatenation of theory that any given commentator has previously absorbed, whether explicitly applied to the situation or not. It is also equally important to note, given the original subject matter this collection invited us to address – post-neoliberal economics – that economic theory, in the standard sense, is only one aspect of the theory of neoliberalism – albeit one that it is important to unlearn, given the facilitating role it has played.

24 See Donati and Archer (2015).
25 See Morgan (2018) and its reference list.
Economics facilitating role revisited

When critics of neoliberalism refer to economic theory they usually have in mind a dominant disciplinary perspective (for want of a better term “paradigm”) that has multiple effects. A primary claim is that it has political significance: its theoretical forms are more conducive to some kinds of policy than others and its theoretical forms tends to be more associated with some kinds of political views than others. Both claims are arguable and opinion differs. Still, critics of neoliberalism have tended to use the term “neoclassical” theory when referring to its economics constituent, but typically mean the core of mainstream theory, and as we have previously noted, argue that its theoretical form tends to lead to a concept of the state as a source of institutional support for markets where they exist and creation of markets where they do not. This is premised on the commitment that private interest and competition lead to generally beneficial outcomes and while this is underpinned by rational agents, Pareto efficiency, perfect competition, general equilibrium etc. mainstream economists recognise the world is not quite like this – it is “sub-optimal” – which leads to a variety of further theorisations, but crucially one’s that take the ideal as a point of departure or aspiration.

So, the argument is that the nature of economic theory tends to create a policy predisposition that favours markets. There may be distortions, frictions, irrationalities and failures but these are the market working itself out. Failure may provide some justification for a more interventionist approach by the state but even here the dynamism of market failure is usually to be preferred to state failure. To a degree then it doesn’t matter if economists think of themselves as Right or Left (and surveys tend to indicate many economists consider themselves “liberal-leaning” and slightly Left of centre), they work with a theory framework that limits the concept of the state (including its complexity as a source of markets if one pays attention to the work of Mariana Mazzucato, Neva Goodwin or Jamie Galbraith) and the role of the state.

However, critics of neoliberalism hold that the project of neoliberalism also involves activity by ideologically motivated economists, which adds an explicit Right wing inflection to its economics – and some argument over its relation to mainstream economics, since there are numerous methodological differences between Austrians and mainstream economists, as well as some political misgivings regarding consequences. The important point critics of neoliberalism tend to make here, however, is that economic theory tends to lack adequate attention to institutions and power and this creates a vacuum which corporations can fill and corporate-disposed Right wing politicians can exploit, a situation – especially where corporate funding of politics is unchecked – that leads to a discourse of market efficiencies that runs parallel to real markets that are anything but the (efficient) ideal and where corporate interests are actively supported by the state – including in forms that Austrians then find offensive (corporate welfare, subsidies, tax breaks, tax loopholes, bailouts etc.). Here the concept of the market is implicitly politicised in so far as neoliberalism conflates corporate power and market activity and speaks about the latter while remaining mainly silent on the former. To be clear, there is no reason why a market should favour any given set of interests, but any real market is likely to do so, which makes this a significant omission, especially when married with degradation of collective power of labour and the financialised activity of owning and trading companies as portfolio assets (along “private equity finance” lines).26

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26 See Batt and Morgan (2020); Morgan and Nasir (2021).
As such, though the reality of the neoliberal period and the full panoply of neoliberal theory do not reduce to formal economic theory, the nature of economics as theory in the last 40 years has still mattered. The implication is that an adequate economics for the future needs to be sensitive to the role economics has played within broader social reality. This is different than merely suggesting the traditional positive-normative divide is problematic, it is the claim that the very nature of theory has political consequences through its methods, exclusions, formulations, legitimations and omissions. Learning this requires one to simultaneously unlearn the formulation of mainstream economics as “science” (sic) and this is a first step in accepting that different kinds of economics are possible and preferable.

**Post-neoliberal economics**

Critique of the nature of mainstream economics significantly predates the current climate emergency and climate emergency has not made this critique irrelevant. What climate emergency has done, however, is confirm the basic (and already existent) claim that the primary insights of ecological economics are fundamental to any adequate economics discipline.\(^{27}\) Economics must account for the materiality of an economy. This and not exchange value are basic to the scale and intensity of economic activity the planet will reasonably allow. Thereafter a case can be made that this ecologically premised economics must also be normatively sensitive, dialogical and pluralist in so far as these are mutually consistent aspects of any adequate approach to economics.

In a short essay there is little that can be said substantively regarding a whole discipline but perhaps the best approach is to synthesise and summarise key principles according to the kind of concerns that become curricula.\(^{28}\) This is something I have done before on behalf of the Association for Heterodox Economics (AHE) in response to publication of new curriculum guidance in the UK in 2015. As synthesis these points are (again) by no means original (Morgan 2015: 535-536):

1. Economics is the study of social provisioning or the different ways in which psychological, social and material well-being are and can be achieved through an economy. An economy is a historical and dynamic entity and its construction necessarily involves institutions and an emergent political framework that fosters particular trajectories for that economy. An economy is embedded in an ecology and there are material limits to development that cannot be ignored and are central to the continued achievement of well-being. Deliberation is fundamental to informed decision making at a micro and macro level and so economics is also an ethical science. Economics is integral to political processes and so has implications for policy and for how citizens live. It is always also political economy.

2. In so far as economics is the study of the social provisioning process, its insights are based on different sets of theoretical commitments or emphases. There are then many different ways to approach an economic problem and many different ways to construct theory and pursue an economic investigation. Economics is therefore necessarily pluralistic. Historically it encompasses different schools of thought that consider economic problems from different points of view based on different foci,

\(^{27}\) For a range of ecological economics positions see the edited text Spash (2017).

\(^{28}\) See also Fullbrook (2008); Mearman et al. (2018a; 2018b).
concerns and ultimate aims. Since economics is deliberative and economies can qualitatively change, then there is also an ongoing need to consider new kinds of theorisation to consider old problems in new ways, and new problems based on new insights. Economics is contested but this is not simply a data issue; it is also an issue of the consequences of the dynamics of different approaches to social provisioning. Pluralism is ultimately a commitment based on the recognised value for the vitality of the discipline of constructive engagement with different approaches to an economic problem. It is rooted in the complexity, contingency and malleability of social reality.

3. Social reality is an integrated whole and economics is one way of demarcating an aspect of that whole. Its insights ought then to cohere with those of other social sciences, and productive interchange between the disciplines is an important way each can both inform and temper the claims of the others. It is therefore important that economics considers the theories, critiques and methods of other disciplines rather than primarily transpose its modes of analysis onto the subjects of other disciplines. This is part of what it means to be effective in studying economic phenomena in their historical, political, social, institutional and international contexts.

4. Economics is in the broad sense a realist science. It prioritises realism and relevance over precision. It recognises that there are many methods that may provide insights into an economic problem. It recognises that there are limits to the use of any given method. It recognises that an effective economics education develops the ability of an economist to understand the limits and potentials of different methods and different ways of theorising. In so doing, it recognises that the ability to construct theory, and evaluate and use methods, requires a framing context of critical awareness. That awareness necessarily requires an economist to be versed in the history of economic thought and the progress of economic history. It is also enhanced by the reflexive skills provided by the philosophy of economics, including, for example, social ontology. Without these, model building, the use of given methods, and of quantitative and qualitative data can all too readily be misused.

Clearly these principles need developing, they are not a substantive economics.\(^\text{29}\) Equally clearly an ecologically premised, normatively sensitive, dialogical and pluralistic economics is very far from the kind of mainstream economics critics of neoliberalism take issue with. The challenge is how to transition, but this is a matter of institution building not of expecting the impossible. It is about giving participants “reasons to do X”: to debate norms, to accept that different points of view informed by different methods and concerns may have justifiable bases, to put aside immediate personal interest where appropriate for community goods, to work for public understanding of economics, to focus on key real problems of economy, and so on – these are choices that can be made not standards that cannot exist or powers no one possesses (though this does not prevent disagreement, as for example responses to Geoff Hodgson’s recent book which covers this subject indicate).\(^\text{30}\)

Moreover, there is a difference between sensitivity to the possible effects of power and cynicism regarding inevitable consequences of it. The former is a necessary part of any adequate social science while the latter is self-refuting as an academic stance (since what

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\(^\text{29}\) See Lee and Cronin (2016); Jo et al. (2018); and for discussion in RWER, Davis and Morgan (2019); Syll and Morgan (2019); Daly and Morgan (2019); Nelson and Morgan (2020).

\(^\text{30}\) See Hodgson (2019).
would be the point of engaging in critical reflexive work aimed to contingently improve “knowledge” if one held this to be impossible in theory or irrelevant in practice?).

From post-neoliberal economics to a post-neoliberal world

Since there is a great deal more to neoliberalism than its economic theory component it would be unrealistic to expect a post-neoliberal economics to be capable of producing a post-neoliberal world without other changes. The economics alone did not produce the current adverse state of the world and so changes to the disciplinary form of economics alone cannot be expected to resolve the problems of economies writ large. Peter Newell, for example, in his recent excellent book *Power Shift: The Global Political Economy of Energy Transitions* makes much this point, albeit mainly implicitly (Newell, 2021). For Newell the world we now live in was not created by a failure of pricing mechanisms per se nor lack of available technologies early enough to make a difference or even unwillingness to consider alternative ways of living, but rather by the systematic pursuit of unsustainability, reproduced because of the concentration of power in the hands of key actors and institutions who have continually benefited. Transformation thus involves undoing this systemic situation and this is a multi-faceted problem.31

Over the last decade Newell has explored a variety of themes in relation to the need to undo the current adverse state of real world economies – the need to avoid “transforismo” or co-option that undermines or subverts change (greenwashing and so on), the dilemmas of “passive revolution” or strategies that advocate gradual change but default to vested interest/power preserving strategies that continually fall short of what is needed by deferring these into the future according to some rationale. As you may be aware “transforismo” and “passive revolution” are terms drawn from Gramsci, one of the Left’s more innovative thinkers in regard of the role of ideas and action in effecting change – to which one might add his contrast between a war of movement and a war of position. But one does not have to be a Marxist to appreciate the point Newell is making – vested interests of the few can have great influence over society, and addressing adverse consequences requires some form of strategy as praxis. From that point of view, climate emergency means we are all Gramscians now, if only as an existential obligation. Newell’s work explores the numerous movements from below and policies from above that can coalesce to effect change and makes the case that transformative just transitions are the alternative to “transforismo”. In the language of this special issue the eventual catastrophe created by a failure to act sufficiently would be a quite different and disorderly post-neoliberal world of conflict over diminishing resources in a struggle to commodify the final inches of the planet, grind the last rhino horn into aphrodisiac and drink the last glass of clean fresh water before the lights go out.

Newell’s work is one among many and parallels that of Clive Spash, Max Koch, Jayeon Lindillee and Johanna Olsson in this special issue as well as that of Giorgos Kallis, Julia Steinberger, Susan Paulson, Federico Demaria and many others across a host of scholar activist and social movements working on a variety of related issues (for example the thorny problem of aviation and just transitions in the work of “Stay Grounded”).32 Few of these would be recognised as “economists” in the disciplinary sense and given the state of the field most would actively reject the term. And while one may not agree with all aspects of the

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31 On the problem of undoing and technological solutions see Morgan (2020b) and its reference list.
concatenation of approaches, this work at least takes Sayer’s “diabolical double crisis” seriously. It is political economy for people, a kind of (though I expect not all would embrace the term) humanistic economics that is very different than the arid state of the mainstream discipline, which awards “Nobel Prizes” for minimal concessions that rational agents might have feelings or thoughts or even bodies.  

In any case, it should be clear that institution building for a post-neoliberal world surely exceeds the scope of institution building for a post-neoliberal economics, though clearly a differently conceived economics ought to be performative for a differently conceived economy. Equally though, many other disciplines can contribute. For example, George Lakoff’s work on persuasive communication strategies (framings) for the environmental movement is illuminating — regarding how one constructs alternative messaging themes that address the embodied emotive aspect of reasoning (Lakoff, 2010). One need only look to how a simple public health issue like wearing a mask can become a politicised issue of identity to see how important this can be. Still, communication strategies are just one theme worthy of consideration. It also makes sense to consider political dynamics of current leaderships as well as impediments created by possible near future events.

In terms of political dynamics, the UK is host to COP 26 and claims a “net zero” leadership role. While recognition that something must be done is to be welcomed the current UK government is made in its leader’s image: given to grand announcements, absent of actual policy, command of fact or consideration of feasibility — a kind of blustering muddling through attitude that manifestly pathologically over-promises and under-performs (with one notable if important exception in the form of Covid-19 vaccination). While over the last decade the UK can claim to have reduced emissions to a significant degree (using production measures) based on the transition from coal to gas and now solar and wind, the UK Committee on Climate Change make clear that the UK’s future commitments require far more pervasive and carefully thought out policy, which the current leadership seem incapable of; this can always change, but in the context of the COP process, it seems likely that the UK lacks both moral authority and sense of seriousness — preaching more than it practices, and may thus add distraction to “passive revolution” at what is otherwise considered to be a crucial time.

In terms of significant possible near futures one cannot ignore the hostile partisan politics of the US. Biden and the Democrats are committed to a Green New Deal future, albeit with some struggle over where the emphasis will lie and what the level of financial commitment will be. The Republicans or GOP, by contrast, are increasingly trapped in positions that block any attempt to address the genuine scale of the climate and ecological challenge. Moreover, future leadership dynamics may well destabilise US democracy and (again) disrupt global coordination (such that it is) of climate and ecological solutions. Consider the current nature of GOP politics and worst case scenarios…

As various commentators have noted, the Democrats’ economic policies have widespread support and this extends to some significant proportion of the working class who otherwise vote Republican (based on some or all of a higher minimum wage, universal child support/tax credits, more funding for health and social care, infrastructure investment, debt alleviation for students etc.). GOP politicians, however, continue to be funded and backed by corporate interests for whom these policies are anathema and so apart from emphasising fiscal conservativism (which is conveniently forgotten when tax cuts are costed or defence spending...

33 John Komlos, for example, favours the term humanistic economics.
is mooted) they have been manifestly reluctant to offer their own brand of economics and have instead pursued the politics of fear and grievance focused on moral panics regarding Black Lives Matter, Antifa, defunding the police, reverse racism and critical race studies (sic) curricula in schools, Mr Potato Head, Dr Seuss etc. in order to foster a sense that progressives are the enemy within (these woke socialists are coming for your children, your guns and your self-respect). The racial overtones of this are hardly new and nor is the associated attempt to use the aftermath of Biden’s election and Trump's defeat to push through voter suppression legislation. There is, however, an additional danger here. Republican politicians continue to fear Trump’s threat to stand candidates against them and rather than organise some kind of solidarity movement to reject him have – with a few exceptions whose right wing credentials indicate this has very little to do with whether one is authentically Republican – pledged “loyalty” and thus individually surrendered any sense of integrity they had (craven seems the appropriate term here). This loyalty is predicated on embracing the “big lie” that widespread voter fraud stole the election and this commits Republican politicians to a degenerate domestic politics that depends on and legitimises fiction.

The immediate effect is to endorse conspiracy as mainstream, feeding the fantasies of a section of the electorate for whom the absence of evidence seems to be all the proof required. But the near term worst case effect is potentially more sinister. Should Trump stand and despite voter suppression (as opposed to trying to win votes) and the politics of fear, lose again it is not inconceivable that different states or Congress will take action to put aside the vote. Trump, of course, may not stand and may end up in prison, so all of this is highly speculative – but the dynamics of Trumpism, the rejection of both integrity and reality are not easily reversed for the Right. And this can only destabilise checks and balances within US politics and place a drag on effective policy being made there – exacerbating existing problems of the Rightward shift in the Supreme Court and the block created by the filibuster in a hostile partisan Senate and divided country. Clearly, a preoccupied and divided America and a possible return to a pariah US administration do not bode well in a time of climate emergency. The world does not need wrecking ball politics of this kind and one wonders what the ultimate consequences might be when/if a political system embraces fiction and becomes suppressive of and hostile to truth, expertise and common sense. It certainly did not end well for the Soviet Union.

The US of course is not the major emitter on the planet now, and one also cannot ignore China’s near term future. Richard Smith’s *China’s Engine of Environmental Collapse* (Smith, 2020) is an indispensable guide to China’s political economy. It provides a relentless and distressing litany of statistics that speak to imminent eco-Armageddon. And it makes clear that this is not just a matter of adverse globalised structures of economy (production for export that has essentially offshored the emissions of other countries) but also the internal dynamics of authoritarian state policy, dysfunctional regional devolved powers, adverse incentives and massive corruption. Emissions and other ecological problems of resource use, pollution and waste in China far exceed its proportion of the global economy and there are recognised widespread problems of overproduction and overconsumption, much of it led by building of superfluous cities, unnecessary airports, roads and rail networks. Smith paints a very different picture of China’s economic miracle than one might glean from contextless statistics drawn from the World Bank database.

So, China seems currently trapped in its own growth imperatives, and from the point of view of climate emergency, possible near futures in East Asia are no less potentially febrile than
those on the other side of the Pacific and likely more so.\textsuperscript{34} As things stand, great power rivalry seems to be a struggle over the wrong goals – a pissing contest of you show me your economy, I’ll show you mine. Though both the US and China are keen to own the future via mastering the next generation of “sustainable” technologies it is far from clear that the context of technological dependencies has or will liberate itself from problems of expansion and scale. And mention of technological dependencies is a reminder that it may, of course, not be countries that have the final word here, if we turn full circle and return to one of neoliberalism’s most prominent features – extreme wealth inequality. There are a few individuals on the planet now who have assets and influence that exceeds that of most countries. Jeff Bezos and Elon Musk made their fortunes via technological disruption (leavened in the former case by harsh employment practices and in the latter by judicious moves to oust incumbent management) and both have grand visions of technofix futures. Technology has become theatre for the very rich, as pet projects to control space exploration indicate. For some this is sinister distraction in which collective dystopia becomes utopic fantasy – a potential exit planet left for the very wealthy. While this seems unduly cynical it is a reminder that much of the future is still in the hands of a few, and this is quintessentially neoliberal. In any case, unlearning mainstream/neoliberal economics is just one strand in a grand existential challenge and as the preceding comments indicate, we may yet be trapped in the entrails of neoliberalism. And this time it likely cannot “fail forward”, it can only fail.

**Conclusion**

In his massive novel *In Search of Lost Time*, Proust ruminates that we are, objectively, aware that everyone dies, but the way we live depends on delusion that rejects this truth. More generally, as anyone who pays attention to the world around them is aware our civilisations have become accustomed to thinking that time is something we always have more of. This is a curious facet of the nature of our being. As a sentient species we are time travellers in a whole host of ways. Our species’ intelligence has been built round the pursuit of collective control of our environment and security seeking. We do not simply encounter the future passively, we reason, imagine, anticipate and plan and we do so at various scales and over different timelines. This tendency, however, has always had its problems and limits and this is still the case today. On the one hand, capitalism fosters powerful interest groups and neoliberalism may have honed this feature, but equally we delegate our fate to marketised systems where we assume adequate solutions are emergent properties. As such we have created a system of parts with no directing centre demonstrably able to bring the whole to heel. On the other hand, though we are a species who places great store in our capacities to master the world around us and create the future, we have a poor track record when it comes to predicting the future. Our combined activities continually confound our most confident claims that we understand how things are and how they will be.

As philosophers such as Tony Lawson have long noted, mainstream economics has been at the cutting edge of ignorance in so far as it has provided the social science template for inadequate modelling and theorisation of control, (over-)confidence and prediction.\textsuperscript{35} This takes various forms: model worlds of repetitive equilibriums whose quantification of variables slices complexity into well-defined relations that reduce temporality to periodised repetition; stylised patterned path-dependencies that treat structurally constrained and enabled activity

\textsuperscript{34} If one takes a global perspective similar problems can be identified in many places – not least Russia.  
\textsuperscript{35} See the interviews: Lawson and Morgan (2021a, 2021b).
as deterministic *fait accompli* (albeit often with a stochastic twist), and so on. As critics have noted many times, economics works with notoriously poor conceptions of human being and its active consequences in the world and this is combined with inadequate theorisation of time – not clock time per se, rather the way things happen in reality through or in time because of who we are collectively and what we can do (subject to the limits imposed by a material world). Economics has steadfastly resisted addressing these problems as anything other than piecemeal adjustments, when what is required is a fundamentally different way of proceeding. This ironically is a path-dependent problem, in so far as economics has committed itself to a version of quantification as science built around its core axioms and methods. As John Latsis, for example, has recently argued an Economic Process Theory would approach the problem quite differently (Latsis, 2015). Latsis draws on the metaphysics of the American pragmatist philosopher Nicholas Rescher and the work of Shackie, but there are numerous other contributors (beginning with Veblen, Keynes and Knight) who have considered the features of the world that any adequate economics ought to reconcile itself to.\textsuperscript{36}

An economics theorised and pursued in terms of generative sources of active processes leading to cumulative causation, contingency, diversity, novelty, surprise, transitions and transformations is quite different than the one we have now. It is an approach to systems that is alive to uncertainty and by its very nature introduces a degree of epistemic humility into economics that it has so obviously lacked in practice. Such an economics, for example, might have provided different guidance over the last forty years than the Integrated Assessment Models (IAMs) pioneered by William Nordhaus.\textsuperscript{37} It is because of blithe commitment to "business-as-usual" that we now face a planetary scale problem which comes up against the problems of how we have treated the future. New coordination seems needed at the planetary scale and with it perhaps a kind of cultural leap or civilisational learning that takes us past the contradictions of capitalism and parochialism of countries as we know them, just as in the past countries transcended city states. Planetary scale democracy according to thinkers such as Heikki Patomäki, would be a progressive variant of post-neoliberalism.\textsuperscript{38} We might think this unlikely, but it is worth noting that our intentional activity is the only way we have of rationally connecting the past to the present and the future. We cannot perhaps predict, but that does not abnegate responsibility for prudential enlightened conduct. And a planetary scale post-neoliberal future is no more inconceivable now than market society was prior to its birth at (as Polanyi reminds us) the hands of the state. Its existence would defy no law of nature and to those living in it, it would no doubt feel as natural as any other historical period has felt.

Ultimately, economics can continue to be part of the problem or it can be a constructive part of addressing those problems – but to do so – it must play its part in carrying the population with it. This does not imply, to reiterate a previous point, that everyone is equally responsible for the state of the world, but it does recognise that for minorities to pillage the world majorities must be disempowered or duped or both. Decisions are going to have to be made irrespective and these can either favour the few or the many, can work with the impossible or accept the highly likely. If the latter then we need to start thinking about previously

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\textsuperscript{36} See also Rescher (1996, 1998); Rescher and Morgan (2020); Dimand (2021). Given its growing prominence one ought also to mention the Good Judgment Project run by Philip Tetlock and colleagues, which seeks to refine practices for "superforecasters": \url{https://goodjudgment.com} The adequacy of this approach remains an open question.

\textsuperscript{37} For analysis of IAMs see Keen (2020); Asefi-Najafabady et al. (2020); and for discussion Keen and Morgan (2021).

\textsuperscript{38} He has been exploring this idea for quite a while, e.g. Patomäki (2011).
unpalatable issues – doing less, reducing scales, filling time in other ways, thinking about different ways of organising an economy. This then raises a whole set of issues regarding what really matters to us and feasible distributions on not just a national but a global scale. These are issues that the COP process of the UNFCCC and the Paris Agreement barely touch (beyond some focus on financing for adaptation and mitigation). Dialogue over norms can involve and carry the majority or it can collapse into fragmentated and defensive articulation of interests, preservation of power and conflict. Economics, clearly, is just one area where the former (“carry”) is possible but not currently likely and the latter (“collapse”) seems to be where the world is currently headed.

Finally, it is worth noting that “life after neoliberalism” invokes a concatenation of abuses that ought to be absented and transitions that must be effected, which we have not had the opportunity to discuss: a system that stops taking from the global South, an end to modern forms of slavery (which have proved quite compatible with global capitalism), definancialisation, the liberation from work (where appropriate) rather than the denial of employment. These kinds of wish lists emerge from any balance sheet of neoliberalism, they, however, are more than wishful thinking. There is a well-known aphorism widely attributed to the philosopher and novelist George Santayana, “Those who cannot remember the past are condemned to repeat it”. A future that mirrors the past, however, is now neither possible nor desirable.

References


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Of Copernican revolutions – and the suddenly-marginal marginal mind at the dawn of the Anthropocene

Richard Parker [Kennedy School, Harvard University]

It used to be thought that Copernicus initiated an intellectual revolution – indeed Thomas Kuhn called his first book The Copernican Revolution (1957). But in this Kuhn was mistaken. Throughout Europe astronomers took a keen interest in what Copernicus had to say, but, with only a very few exceptions, they took it for granted that his account of a moving Earth was simply wrong. If the earth moved, we would be aware of it; you would feel the wind in your face. If you dropped an object from a tall tower, it would fall toward the west…Since none of these things happened, all the leading astronomers – Erasmus Reinhold, Michael Maestlin, Tycho Brahe, Christoph Clavius and Giovanni Magini were confident that Copernicus was wrong. Still, they were fascinated by the simplicity of his techniques for calculation…They liked Copernicanism as a mathematical device; they had no time for it as scientific truth.

David Wootton, The Invention of Science

As we push on through this second year of our global pandemic – what an acquaintance, one hopes too grimly, calls “the start of The Covid Decade” – the 10,000,000-plus lives claimed so far (and the millions more still to join them) place a burden on how you or I can honestly talk to one another about “economics”, “neoliberalism”, and “post-neoliberal economics”.

My wife and son were both infected with the COVID virus last spring, before masks were required or the habits of daily work and social life had been fully upended through mass shutdowns of offices, schools, and retail street life. They both thankfully survived – though only after what for us were harrowing days.

In the year since, like many of you, I have lost friends – two directly to COVID, three to complications the virus added. Six others have also died, losses which have left us without ability to gather and mourn.

Too narrowly conceived, issues of “economics” thus haven’t felt to me of surpassing importance in this moment – and yet they are.

Nothing about this global health pandemic has escaped simultaneous reference back to, or framing in, terms of “economics” – most immediately for most people (who aren’t economists), measured by a combination of the unprecedented trillions that powerful governments and their central banks have poured into their economies; by the exorbitant costs for the crash-development, production, and successful distribution of vaccines; by the massive financial

1 Wootton, Invention of Science, 145
2 The Economist estimated that COVID’s global death toll by May 2021 exceeded 10 million: https://www.economist.com.ezp-prod1.hul.harvard.edu/leaders/2021/05/15/ten-million-reasons-to-vaccinate-the-world
losses imposed by the shutdown or curtailment of businesses; by the physical shortages caused by disruptions to what is anodyne called “the global supply chain”; and by the abrupt disappearance or curtailment of millions of jobs worldwide – and with those jobs, the personal income that purchased food, paid for homes and cars and clothing, indeed supplied all the variegated necessities and luxuries we has grown accustomed to assuming were always simply there.

The scale of all this disruption has clearly shaken many economists’ complacencies about what our leading colleagues at the start of this century benignly termed the “Great Moderation” of the increasingly global economy, an ever-more unified world that was being brought about by the super-human monetary skills of “The Maestro” Alan Greenspan, by Robert Rubin’s and Larry Summer’s inspired deregulation of finance, and the emergence of a truly “global market”. It was a “market” that was governed by an almost-natural set of market “laws” – laws that had been discovered in a two-century-long development of thought by – this bears noting, for reasons to which I’ll return – mostly Western, mostly bourgeois (or if you prefer, upper-middle-and-middle-class), and almost always male, academics whose careers had been spent refining (again the anodine phrasing) “market economic” theory – or more simply, “economics”.

So there’s reason to pause here and ask what has happened because of COVID. I mean that, first, in terms of the self-evidently massive global dislocations3 that a microscopic virus (and now its variants), a virus indifferent to our vocabulary of markets, market rules, and economic theory, has imposed. Secondly, I mean it in terms of the societally-organized responses our little species (one among so very many with whom we share our tiny planet), has so far produced, intentionally and haphazardly, through its state-bordered subdivisions and regnant governance theories.

Let me lay down quickly now how I mean to take up COVID’s impact on “economics” – and then how I’ll tie my views to the charge that Professor Fullbrook set out in his invitation:

There are signs [he wrote me some months ago] that neoliberalism as a dominant ideology is in decline. Given that most of its dogmas are grounded in the axioms of traditional economics and given that those axioms are increasingly and ever more dangerously at odds with reality, it could be that economics is approaching its Copernican moment.

But what, I quizzically asked myself as I sat down to outline this paper, would such a Post-Neoliberal Economics look like? Replying to him initially, I had asserted a certain confidence about what I would answer – but now in honesty I still find questions nagging. This essay is my attempt to puzzle out some answers that still contain what remains for me unanswered.

I’ve taught at Harvard for nearly 30 years, am nearly 75, and have witnessed many once-bold-seeming experiments in our profession’s attempts at theorizing, rise and then fall: input-output, the Phillips Curve (and NAIRU), game theory, supply side, monetarism, New, Neo-, and Post-Keynesianism, random walks, New Classical and New Growth theories (two among the many growth models from Harrod-Domar, the first I learned, to the various current flavors of DSGE), the Real Business Cycle, rational expectations, Taylor rules, MRI-based behavioral economics, the Washington Consensus, shock therapy, the new empiricism, and so far, it

3 Again, a word not robust enough for what needs to be understood.
already appears, a good deal of behavioral economics and large-scale data manipulation. I can still also clearly recall reading the AEA’s scholarly COGEE report on the state of American economics some 30 years ago, the one that found over 60% of graduate-level faculty agreeing that economics “overemphasizes mathematical and statistical tools at the expense of substance” and the report worrying aloud that the profession was producing a generation of “idiot savants”.  

Here at Harvard over the years, I’ve also certainly seen an ascent of what one might well call “neoliberalism” not just in economics but political science and political philosophy – and (this is not unimportant or unrelated), in both the university’s administration and in students’ assumptions about “the real world” they’ll enter after graduation (about which I’ll say more later). Today, after the Great Recession and still in the COVID Crisis, while I’m not sure I’m seeing neoliberalism’s fall, I know I am looking at a far more confused and confusing landscape of fragmented ideas. It’s a fragmentation one of you might argue that’s a mutation or neoliberal variant (COVID inspires thoughts of neoliberalism as a virus) – but it’s also, I think a landscape that nonetheless contains possibilities for real change.

**Contexts (economic and political) we ignore at our peril**

First, context-setting: it’s clear that “neoliberalism” – at best, a very loosely-bounded school of “economic” and “political” thought – is under assault intellectually and institutionally (though there’s much to parse here). This assault is rather new – but “neoliberalism” as a descriptive term (it’s not just an epithet) is itself rather new, at best about 30-40 years old, and seems to have arisen associated with the seeming “death of Keynesianism” in economics during the Reagan-Thatcher years and the subsequent rise of leaders such as Clinton and Blair (and Obama?), so its sudden fall must be set against its sudden rise.  

Second point: worryingly, outside our cloistered universities, right-wing “populism” – a term some critics equate with an equally loosely-defined “neo-authoritarianism” – is on the rise, with figures such as Trump, Modi, Bolsonaro, Orban, Duterte, et al. the representative political indicators of this trend. (Whether Putin and Xi, or Middle East figures like MBS, or any number of African, Latin American and Asian heads of state fit this “neo-authoritarian” definition – or are simply old-fashioned authoritarians – for me adds complexities about the scope and history of “neoliberalism”). What most concerns me, though, about this emergent neo-authoritarianism is captured in two charts I’ve put here.

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4 I wrote about the AEA’s COGEE Report a decade after it appeared in the JEL in 1991 in Parker, “Can Economists Save Economics?”, *American Prospect*, December 19, 2001. For my troubles, Robert Solow wrote the *Prospect*’s editor privately to bitterly complain that I was “washing our dirty laundry in public.”

5 Jamie Peck, *Constructions of Neoliberal Reason*, is a useful introduction; for those so inclined, a more radical reading is David Harvey, *A Brief History of Neoliberalism*. My Harvard colleague Dani Rodrik has a succinct view, worth quoting here: “As even its harshest critics concede, neoliberalism is hard to pin down. In broad terms, it denotes a preference for markets over government, economic incentives over social or cultural norms, and private entrepreneurship over collective or community action...Today it is reviled routinely as a short-hand for the ideas and the practices that have produced growing economic insecurity and inequality, led to the loss of our political values and ideals, and even precipitated our current populist backlash.” Dani Rodrik, “Rescuing Economics from Neoliberalism,” *Boston Review*, November 6, 2017. Also worth reading is Zack Carter on Friedman and neoliberalism, “The End of Friedmanomics”, *The New Republic*, June 17, 2021: [https://newrepublic.com/article/162623/milton-friedman-legacy-biden-government-spending](https://newrepublic.com/article/162623/milton-friedman-legacy-biden-government-spending)
The first aggregates 21st century governance systems (set aside their economic systems for a moment) in the roughly 200 nations of the world. Its message is the reminder that democratic governments are not a majority – and are (we also know) a novelty in human history, one that has become meaningfully extensive only in the last half-century, a flicker of time since the late Neolithic dawn of early states.  

The second chart, slightly more detailed, here tells more about the “democracy trend line” for those past 15 years – for this paper’s purposes roughly what we might think of as the era of neoliberalism’s decline:

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6 James Scott, *Against the Grain*, is especially insightful here, especially when read in conjunction with his *Seeing Like a State*, with its indictments of the sort of top-down planning that development economics and multilateral institutions, long before “neoliberalism”, began celebrating and still view as the necessary path to “modernization”.

I’m concerned, in short, as I set out here about what might socially, culturally and politically be coming next — if this is indeed the start of a “post-neoliberal” era. You and I may have our own dreams about that next world — and certainly should talk about and debate them — but we’re not guaranteed that our dreams will define the future. Democracies and democratic rights are not so well-established that we can presume their ongoing continuity, let alone their inevitable spread or strengthening; in fact, the risks right now are the opposite. What I’ll say next about “neoliberalism” is deeply grounded in that alertness to what I fear could come next.

Conceiving a post-neoliberal economics is for me thus only one part of imagining and then constructing a much larger, more progressive post-neoliberal world — and how to redesign the standard-form “economics” taught in most universities is only one colorful problem thread among many in that tapestry we must reweave.

**A first-order claim**

At the start, let me assert a core to my argument: seeking to repair blackboard economic theory by, for example, somehow re-centralizing and re-legitimizing “the state” and its right to lead markets is simply not enough. This “re-centering” was the essence of the Keynesian Revolution in the mid-20th century, and in complicated ways it seems to be at the heart of the Biden Moment we’re in here in America. It’s also the apparent desire of many of my more-liberal-than-progressive colleagues.

What we need, however, is a much broader vision, not just for a new “textbook economics” but the uses to which we put our intelligence as men and women, and not simply economists. That vision must fit into a much larger and ongoing argument about being human and about living into a truly democratic, much more egalitarian, and environmentally sustainable world. Here I’ll nod to our profession’s jargon but point past it at the same time: it’s a vision that
would seek to grow what I’ll call, borrowing from John Dewey and Richard Rorty, “democratic efficiency”. On that, more to come.

I realize that a good many of our more cautious colleagues think that neoliberal models can be overturned by somehow “rebalancing” mainstream economics’ stylized concepts of “markets” and “states” and their separate spheres. But that, in my view, ignores something obvious: the US and its OECD partners are not accurately describable as “markets first and states second” systems – and haven’t been for quite some time. The average share of government in the developed world’s GDP is over 40%, often closer to 50% – and if one adds the GDP shares of the non-profit sector, the hybridized for-profit “public-private partnership” world, and the increasingly-vast landscape of private contractors and consultants to governments (whether it’s McKinsey, Lockheed, or Blackstone, and whether it’s in defense, health care, IT, toll roads or garbage collection), the percentage is even higher. Here are some percentage comparisons – familiar to most of you – for the narrow, “government-only” share of the mis-named “market economies” we inhabit:

There is nothing today, in short, about “the state” (that haunted “other”, the xenia in our most essential portrayals of “the economy” as an extant thing) that makes it exogenous or ancillary or unimportant to “the real economy”. They are separate spheres in our imaginings, not in the world around us.

Beyond recognizing the collective enormity of these well-established “non-market” sectors in our “market economies”, we can also surely point right now to those states’ massive “economic” responses to The Great Recession a decade ago. More immediately we can also simply note the Great-Recession-dwarfing scale of the work by states, their central banks, and the multilateral institutions to COVID since early last year. For illustration of the scale, these two charts:

Economic-stimulus crisis response, % of GDP

- Germany: 33.0%
- Japan: 21.0%
- France: 14.5%
- United Kingdom: 14.5%
- United States: 12.1%
- Canada: 11.8%
- India: 10.0%
- South Africa: 8.8%
- Brazil: 5.5%

*2019 GDP taken into account for values related to COVID-19 crisis.
*Data published by International Monetary Fund in March 2020 includes discretionary measures announced for 2020.


McKinsey & Company

One can see in these charts just how **powerfully and permanently immanent** governments have become (supremely in the big OECD countries but also in China, the current global growth poster child). No American economist I know would have predicted “the non-market’s”
extraordinary multi-trillion-dollar interventions into “markets” of all kinds – of goods and services, of finance, of construction, health care, housing, income, etc. No American economist would have predicted the trillion-dollar follow-through proposals of the Biden administration – repeat, the Biden, not the Sanders, administration – that are before us today, awaiting Congressional action.

I will leave for another paper detailed discussion of three points these charts raises for me. First, how – and why – the scale of governments, their contractors, and the non-profit sectors grew in terms of GDP to these new quantum levels beginning after World War II. Second, how the citizenry of OECD countries prospered at least during les trente glorieuses despite the fact that nearly half their economies routinely passed through the state and its collateral non-market institutions. These simple facts-on-the-ground seem to be the most embarrassing and comprehensive refutation of neoliberalism’s claims for the desirable (and ever-to-be-desired) supremacy of “markets” in all matters economic (or at least refutation of the “freshwater” Chicago view – and before that, the Austrians’ ur-text “road-to-serfdom” alarums).

Why we feel marginalized by marginalism

But that raises the question why so many self-described “progressive economists” today feel “marginalized” in the world of marginalist economics and its varied offspring, including the “neoliberalism” that I’ve been invited to refute and transcend.

To address that, let me quickly sketch a “longue duree” history: “economics” as most academic economists practice it is a societally-organized way of seeing the world that has long relied, institutionally, on three pillars. The first is the emergence of the modern university. The second is the idea that the university can be divided into departments that proximately represent relatively autonomous modes of thought.

The third pillar, most important here, is the ubiquity, now global, of the products of the first two. By this I mean not goods and services but the hundreds of thousands of men (and finally a growing but still small number of women) across the globe, in touch with one another in ever-denser ways courtesy of the various digital and internet technologies unfolding around us. They’ve been university-trained primarily for occupations that manage and grow the world economy, and with it the economic and political bureaucracies of the world. But among them also are those – many embedded in those bureaucracies, some existing on their margins – who shape the public conversations meant to uphold the society’s definitions of who we are, were, and might become – and not just as representative agents in an elegantly-stylized economic model or as individuals in an equally-stylized (and in recent years mathematicized) political science or sociological model.9

8 I might there mention, no doubt, that in the US, where the GOP has long considered itself “the party of fiscal responsibility” and used marginalist arguments to damn public deficits, that the last Republican President to balance a budget was Dwight Eisenhower; but I digress.)
9 On the many and deep problems of academic disciplines and the central ideas underpinning the social sciences especially – and how in the last quarter of the 20th century, they spilled out to produce the breaks we associate with “neoliberalism”, Daniel Rogers, The Age of Fracture makes a great contribution. “What precipitates breaks and interruptions in social argument are not raw changes in social experience, which never translate automatically into mind”, he notes, “What matters are the processes by which the flux and tensions of experience are shaped into the mental frames and pictures that, in the end, come to seem themselves natural and inevitable: ingrained in the very logic of things.”
Those men and women include you and me. However, those conversations—meant to uphold existing orders of all kinds—are what’s central to my concerns here because they also contain the possibility of conversations that could overturn that order and model what it would mean to become not just better economic agents but full citizens in a richly democratic and sustainable world.10

The modern university, however, depends on two 19th and early 20th century claims that limit such possibilities.

The first is that its then-new “social sciences” would be not just “social” but “scientific”—and hence free not just of the prejudices and passions “science” thought it was escaping by leaving religion behind but also free of “politics” in the disorderly, dishonest and often-violent sense of that word when we talk about how power and power’s rewards are socially arranged. “Social scientists” would henceforth concentrate their coolly reflective intelligence on matters of “theory” and, in contribution to the larger world, on coolly-designed “policy”. The vulgar but necessary quotidian of “politics”—matters of power, of conflict between interests, and the negotiations that would apply useful “policy” to the lived world would remain outside the university.

The second foundational claim was that the university’s modern subdivision into departments would concentrate specialization in each department’s forms of knowing. The promise here was that through such subdivision the university thereby could produce new ways of more general knowing that would vastly improve the world—in brief, would give rise to an equally modern idea called “progress”.11

We too often forget how new—and how weakly tested—these claims were when they midwifed our higher education system. Universities, which are not modern, hadn’t started that way.

The first European universities in the late Middle Ages and early Renaissance had in a sense been backward, not forward, looking. They took root and then thrived on what amounted to their re-discovery of “classical” knowledge—Greek and Roman mainly, albeit with incursions from Egyptian, and later Arab and some Indian, thought (especially, in the case of the latter two, through the ideas of mathematics and the application of mathematics to social-situational

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10 One of the enduring attractions of Keynes to me has always been that his “economic” imagination encompassed that conversation of possibilities: “The master-economist must possess a rare combination of gifts. He must reach a high standard in several different directions and must combine talents not often found together. He must be mathematician, historian, statesman, philosopher—in some degree. He must understand symbols and speak in words. He must contemplate the particular in terms of the general and touch abstract and concrete in the same flight of thought. He must study the present in the light of the past for the purposes of the future.” Zack Carter’s recent The Price of Peace: Money, Democracy, and the Life of John Maynard Keynes, is much worth reading in this regard.

11 One should note that China and India both pioneered what one might call the proto-university system 3000 years before the European university emerged on the back of classical Greek and Roman learning. China’s Shang Yang-era “higher school” training of the empire’s administrators was established during the Yu period (2257-2208 BC) and the Imperial Central School dates from the Zhou Dynasty (1046-249 BC). Because the early Chinese state consciously depended upon literate, educated officials to administer the empire, a meritocratic imperial examination was formally established by the Sui Dynasty (581–618) to identify talent in the general populace regardless of social rank. As for early Indian precedents, Takshashila University was established in present-day Pakistan in the 7th century BC and Nalanda University—of Buddhist scholarship that drew students and scholars from East, Central, and South-East Asia (including China).
realities from art and architecture to hydraulics and sailing.) But to be “scientific” or exist to produce “progress” as we understand that was not consciously part of their agenda.  

The slow invention of “science” over the last five hundred years or so came about as curiosity about “classical” truths (in astronomy and cosmology especially) led to new observations that disagreed with what the universities had taught, relying on Aristotle et al. As an “objectifying” and “empiricizing”, and therefore radically challenging, way of seeing the world that refuted superstition, this was of course huge. (To the Church’s alarm, along with superstition, religiously-validated imaginings about causation and justification also soon came under relentless fire). All this placed on antique and ecclesiastical verities (and hence too on their contemporaries’ derived explanations) of “why” and “how” the duty of consistent replication and perhaps more important, of coherence – and the predecessors increasingly fell away.

Much of this falling away was, curious to most of us today, born out of arguments about “religion” – which seems so very far away from arguments about today’s “economics” but isn’t.  

“Religion” – by which I mean a cobweb of beliefs about ontology, epistemology, and ethics centered on the authority of transcendent extra-human power had for several thousand years, but especially in the last thousand or two thousand years, been the established means by which to “explain reality”.

The struggles of all sorts – some military, some economic and political, some profoundly philosophical about the nature of being, society and humankind – that Europe endured and exported globally through its empires, the sword, and the printed word from the 1500s onward all contributed to the dethroning of religion and the desacralization of the world, without which the “modern world” (and the Industrial Revolution, capitalism and “economics”) would be impossible. These were, I hasten to stress, not just struggles over the consequences of the Scientific Revolution but of the Protestant Reformation, the Enlightenment, and of Europeans’ transatlantic, then global Imperial Conquests.

How the past allows us to imagine – and see the future

Let me now try to connect this little synoptic “longue duree” to the present and to the matter before us: neoliberalism and what might succeed it. We live in the early 21st century and the conventional economics we’ve inherited has now arrived at a moment when once-novel Victorian-era ideas seem not just inadequate but irrelevant.

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12 University studies were organized by the faculty of arts, which taught the seven liberal arts: arithmetic, geometry, astronomy, music theory, grammar, logic, and rhetoric. All this was taught in Latin, in which students had to converse. The curriculum also eventually incorporated Aristotle’s three forms of knowing: physics, metaphysics and moral philosophy.

13 Ben Friedman’s Religion and the Rise of Capitalism (2021) is the latest addition to this important cross-disciplinary literature. Robert Nelson, Economics as Religion: From Samuelson to Chicago and Beyond is a wonderfully polemical, wonderfully challenging (but too often libertarian) jeremiad meant to force economists to confront the nature of their foundational beliefs.

14 Peter Berger, The Sacred and the Profane usefully encapsulates and analyzes the inter-penetration of science, religious reform, enlightenment secularity, empire and de-sacralization. Eugene McCarraher, The Enchantments of Mammon: How Capitalism Became the Religion of Modernity argues from a different strategy: that the modern world has not been de-sacralized at all; instead the logic of capitalism and its economic “invisible hands” forces – omniscient, omnipresent, and omnipotent, in Durkheim’s terms – have displaced our older notions of gods.
A similar moment seemed, to many, to have arrived before, back in the 1930s. But apostles of marginalism such as Lionel Robbins or Mies or Hayek – faced with what they saw as the socialist implications of Rooseveltian politics and Keynesian ideas about states and economies – insisted on the singular “efficiency” purpose of “economics” as theory, and theory’s realization in the modern market world around them. For these men, the matter was supremely “intellectual” and “scientific”, not a story of competing classes in capitalist societies. Robbins’ magisterial dictum that economics was “the science which studies human behavior as a relationship between ends and scarce means which have alternative uses” was in fact by the 1930s already, well, Victorian.

Let me be blunt here: the Marginalist Revolution is still today, just as in the 1930s, what it was first – the best attempt by a group of late-Victorian and Edwardian thinkers, confronting the 19th century’s emerging capitalist system and its “logic”, to “explain” (and thereby, in “scientific” terms, to justify) the emergence of that particular early stage of capitalism through “scientific reason”, mathematics (mostly geometry and simple algebra at first, then the calculus) and specifically-abstracted “models”\(^\text{15}\) mathematically arranged to solve the question of “right price” – first of the transactional exchange of physical goods, then of labor, capital (fixed and financial) and natural resources.\(^\text{16}\) Those thinkers moreover did so in ways they meant to consciously refute their Catholic theological ancestors and their moral basis for “just price” and “just wage” debates\(^\text{17}\), as well as their Protestant social-democratic and their secular-socialist (especially Marxist) contemporaries on the implications – not just economic but moral and political – of this novel capitalism’s societal distribution of “surplus profit”, and with it, the ownership rights to the means of producing goods and organizing a great deal of social life.

From the start, there was disquiet within early academic departments about what they were doing. Alfred Marshall, the law-giving Moses of marginalism, himself warned, In my view every economic fact whether or not it is of such a nature as to be expressed in numbers, stands in relation as cause and effect to many other facts, and since it never happens that all of them can be expressed in numbers, the application of exact mathematical methods to those which can is nearly always a waste of time, while in the large majority of cases it is positively misleading; and the world would have been further on its way forward if the work had never been done at all.\(^\text{18}\)

Then, lest he be misunderstood or gainsaid, Marshall added this prescriptive injunction:

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\(^{15}\) See Keith Thomas, *Religion and the Decline of Magic* and David Wootton, *The Invention of Science*. The fact that one can earn a PhD in economics today without slightest acquaintance with that history goes a long way for me in explaining why too many economists today behave more or less as “idiots” in the classical Greek sense of “idiotes”, as those who fail to understand where they came from, so do not take an active part in the life of the polis, and hence offer little wisdom the polis’s citizens can use.

\(^{16}\) Phillip Mirowski, *More Heat Than Light: Economics as Social Physics, Physics as Nature’s Economics* handily covers economics’ “scientific” ambitions related to pre-Einsteinian physics. For the role of biology – especially the corruptions of Social Darwinism – Dorothy Ross, *The Origins of American Social Science* is a useful starting place, as well as for her handling of the rise of “departmentalism” and economics’ segregation from history, political science, law, philosophy and sociology.


Use mathematics as shorthand language, rather than as an engine of inquiry. (2) Keep to them till you have done. (3) Translate into English. (4) Then illustrate by examples that are important in real life. (5) Burn the mathematics. (6) If you can't succeed in 4, burn 3. This I do often.¹⁹

In America, the founding of the American Economic Association in 1885 launched a battle between Progressive Era reformers, who dominated the early AEA, and their conservative and pro-business, often Social-Darwinian, opponents. The battle would go on continuously—simplified in later retelling as between Institutionalis and Marginalists. What followed were fights over tenure, publication, and funding for research that were relentless—until shortly after World War II, when the Depression-era Keynesianism and New Deal reformism were transformed into the Cold War’s Military Keynesianism and anti-communist liberalism. In short order, academic economists embraced a mathematicised macroeconomics called “the Neoclassical Synthesis” that validated specific ways states could “intervene” in economies but eschewed any questioning of the “military” in “Military Keynesianism”. Paul Samuelson was the dean of that “Neoclassical Synthesis”, which sought to “resolve” the profession’s inherited battles from the 1880s through the 1940s by wedding a mostly Keynesian “macroeconomics” through a shotgun marriage to a Marginalist “microeconomics”. Late in his life, he spoke of just how carefully he had written and repeatedly edited his legendary textbook to meet the Cold War’s anti-communist requirements about the sanctity of capitalism’s essentials: private property and its control through concentrated private ownership, while legitimating government’s role as macromanager of aggregate demand. Meliorative in prescription, academic economics could thereafter be; more than that, it could not and would not be allowed to consider becoming.

Long before “neoliberalism” arose, in other words, the separate and legitimate sphering of “economics” and “politics” – not just by university departments, but in the larger world, in the imaginations of policy makers, politicians, journalists and the talking classes generally, the right and natural hegemony of “markets” over “states” was established. It is a history that critics who consider “neoliberalism” a relatively new problem would do well to revisit and understand.²⁰

Some thoughts on a post-neoliberal project

So then what might a project for a Post-Neoliberal Economics entail? Since I think “neoliberalism” as concept and practice represents one more of an ongoing series of ultimately ad hoc justifications for the hierarchic structuring of human societies, and think that the larger concept of “capitalism” contains already many visibly differentiated stages of its own in that long story of hierarchies, here are several modest ideas I’d propose.

First, to confront what we don’t like about “neoliberalism”, we should start by recognizing what we are facing, which is not just a methodenstreit problem in academic economics.

The World Economic Forum – what a waggish journalist friend, from direct experience, slyly dubbed “neoliberalism’s favorite ski resort” – has for several years now declared climate

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²⁰ Binyamin Appelbaum, *The Economists’ Hour*, offers a readable Cook’s Tour of this postwar history.
Change and economic inequality the two greatest issues facing humankind. This is not the language of neoliberalism, circa 1978-2008, at least in its diagnosis. Davos has then gone on, as prescription, in ways that ignore mainstream economics’ ideas about the centrality to “economic life” based in the logic of competitively efficient choices for individuals and firms, and neoliberals’ “markets-lead-states” conceit, to call for cultivation of “cooperation” and “coordination” across firms, industries, societies, governments and international organizations in order to address the challenges climate change and inequality pose for us all. It talks of moving the world past carbon, of state-assisted redistribution of income and wealth, of globalized tax policies, of the errors made in the name of free trade, and of the primacy of moral and cultural values that undergird community but are rarely taken up by economists directly or frankly. They do so, moreover, in ways that partially erase the border walls between markets and states. One can of course dismiss all this as merely “Davos Talk” – as a calculated rhetorical evolution, not a refutation, of neoliberalism – but its concessions contain what amounts to what I think is a rare epochal opening with opportunities that should be taken up by the rest of us.

It also reminds us of something important: that, like the rest of us, capital-owners and their senior managers form hypotheses and conclusions about our species not just from a narrow definition of self-interest but from their assessment of what they understand signals risks and opportunities of several kinds. A more orthodox economist than I might try (and certainly Chicago economists have tried) to subsume such changes entirely or almost-entirely within “market” economic models but without (and this seems to me to be why neoliberalism is in trouble) real or lasting persuasive success beyond Hyde Park itself.

Climate change, in those sorts of conventional economics terms, even now is still considered an “externalities” problem, to be modeled and solved by “correcting” price signals tied to the production and use of fossil-fuel energy. What that explanation doesn’t do – among its several weaknesses – is forthrightly ask how the market system, whose apex defense is of allocating resources “efficiently”, could have gotten resource extraction costs, goods-producing costs from those resources, and the climate-costs of final consumer prices for those goods so wrong for so long that we now face this crisis.

Explanations are of course offered – but they almost always seem still to turn on the “failure” of institutions and behaviors “outside” the core market-efficiency axioms at the heart of neoclassical thought.

In the matter of “economic inequality”, the issue is somewhat different, and to me is decomposable, nationally and internationally, into three separate but deeply connected subjects that elude useful capture in conventional “economic” terms: the persistence of poverty and the reasons why; the utility for societies as a whole of income and wealth concentration in the 1% – not in any narrow “economic utility” sense but in what I’ve earlier called “democratic efficiency” terms; and finally, the pressing and increasingly politically-charged questions about the future of “the middle majority” (at least in the OECD) who find

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22 I think a critic of Davos might attack along a couple of lines. One would be to compare Davos corporatism to the medieval Catholic Church’s organicism; another would be to sketch the ways German ordo-liberalism lies hidden in the Davos analysis and its prescriptions. I leave that to others.
themselves stretched insecurely between poverty and wealth, questions that are not just about a current membership in the middle quintiles in blackboard terms, but the means – individually and societally – of joining it, the ways of remaining in it, and how to secure its benefits beyond the material.

In all this, there are now two 21st century landmarks, one empirical, one conceptual. The first is recognition of China’s quite extraordinary growth achievements since the Cultural Revolution, the second, the arrival of Thomas Piketty and Capital, his allies, their charts and data and their conceptual focus. Together, they have visibly moved the public conversation (not just in the West) from preoccupation with aggregate growth alone to the challenge of growth’s disaggregated distribution.

What the unexpectedness of “China” and “Piketty” – forgive my shorthand – signal at least to me now given, I’d add, America’s chaotic disarray, is this: that neoliberalism and the larger neoclassical assumptions on which it stands have been overtaken both by the real world and the re-imagined. If true, then our profession’s enduring habit of recasting ontological, epistemic, social-organizational and moral questions into its methodenstreit debates – whether between orthodox marginalists and Keynesians, neo-Keynesians and Rat Exers, Monetarists and Fiscalists, New Classical and New Growth models, etc. – is simply not what’s really before us now.24

Second, since we’re not in a methodenstreit moment, we need what amounts to new academic programs

In the university, we need to open up and reorganize our antiquated departmental structures to recognize what’s been happening outside traditional economics departments. Well before “neoliberalism’s” ascent in the 1970s, mid-century academic economics had largely purged their departmental curriculum of cross-disciplinary topics that it had inherited from 19th and early 20th century “political economy”: for example, the close study of legal systems, social relations and institutions, geography and demography, political systems and ideology, and history. Here or there individual courses might be offered on one or another of these subjects (often by faculty approaching retirement), but in its rush to consolidate the essence of neoclassical assumptions and translate them into a structured “model” that is supposed to be mathematically testable (and in positivist terms, refutable), “economics” after World War II recreated itself into the form we encounter today – impoverished by its lack of attention to those topics and their useful place in economics.

What’s notable today, after the serial disappointments of that postwar economic project, is this: “political economy” is being revived as a legitimate academic discipline, often with its own faculty, research facilities, graduate and undergraduate degrees, and journals. In the US, Princeton, Harvard, Columbia, Berkeley, Stanford, Duke, Georgetown (and even Jerry Falwell’s evangelical Liberty University) – to name just a few of the best-known – now offer undergraduate and/or graduate programs in “political economy”. Most, I’d note, exist outside university economics departments – in government or political science or international relations departments, in public policy, law, and business schools or programs, and sociology.

and history faculties.25 (The sheer number and range of such programs can be glimpsed by typing “political economy” and “syllabus” or “program” in any online search engine.)

The degree to which these modern “political economy” programs diverge from economics departments varies. That said, their brightest faculty and best students are clearly up to something like a nascent Protestant rebellion against an ailing but still-reignant Marginalist Church, itself visibly wedded to not just the ideas but the institutions of capitalist economies and their governing elites and structures. Here for example are Neil Fligstein and Steven Vogel, senior faculty in Berkeley's Political Economy program, writing a month before Donald Trump’s electoral defeat last November, describing what they see as what these new programs offer:

…we are facing a particularly horrifying moment, defined by the triple shock of the Trump presidency, the pandemic, and the economic disasters that followed from it. Perhaps these – if combined with a change in power in the upcoming election – could offer a historic window of opportunity. Perhaps. But seizing the opportunity will require a new kind of political-economic thinking. Instead of starting from a stylized view of how the world ought to work, we should consider what policies have proved effective in different societies experiencing similar challenges. This comparative way of thinking increases the menu of options and may suggest novel solutions to our problems that lie outside the narrow theoretical assumptions of market-fundamentalist neoliberalism.

We know about these possibilities from the work of economic sociologists, who stress the political, cultural, and social embedding of real-world markets. From work in comparative political economy, demonstrating how the relationships between government and industry and among firms, banks, and unions vary from one country to another. From political and economic geographers, who place regional economies in their spatial contexts and natural environments. From economic historians, who explore the transformation of the institutions of capitalism over time. From an emergent Law and Political Economy (LPE) movement that aspires to shift priorities from efficiency to power, from neutrality to equality, and from apolitical governance to democracy. And from economists – often villainized as the agents of neoliberalism – who are exploring novel approaches to the problem of inequality and the slowdown in productivity, and show renewed concern with the economic dominance of a few large firms. The challenge is to bring these insights together.26

What I find refreshing, reading these Berkeley professors, are three clear assumptions. First is the insistence that we approach inescapably-complex “economic” problems by

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25 A colleague in Harvard’s Government department tells me “political economy” is the largest area focus of its doctoral students. Here is a sample listing of their thesis topics: https://dash.harvard.edu/handle/1/4927603/browse?value=Political%20Economy%20and%20Government&type=department. For a listing of some of these programs, one site tailored to students is: https://www.collegehippo.com/graduate-school/programs/top-ranked-masters-degree-political-economy. A list of master's programs in political economy is: https://www.masterstudies.com/Masters-Degree/Political-Economy/

situating them in actual societies embedded in equally-complex histories, with the contingencies of the moment fully on display. Second is the frank willingness to cross the university’s departmental boundaries – boundaries, I’d hasten to add, that are barely a century old – to look for answers. Third is the absence of anxious talk about “heterodoxy” – a term that to my ear too often sounds self-defensive, even self-apologetic, rather than brave. Better at this point, it seems to me – if we truly mean to overcome “neoliberalism” – is to act like Luther rather than Erasmus here, and treat “political economy” as what it could be: a modern-day Protestant rebellion rather than a half-way reform of the One True and Holy Marginalist Church.

My colleagues’ caveats

I realize this may be going too far for some. I have great admiration, for example, for my Harvard colleague Dani Rodrik, whose own deeply-considered views nowadays reflect his meticulously-calibrated evolution intellectually from a once mildly-voiced disquiet about the profession’s ills in the 1990s to quite deep and sharp-edged critique these days of neoliberal policies and much about their uses of neoclassical theory. Nonetheless Dani at times seems anxious to hold on to core features of the marginalist model, which he sees as “evolving” by responding to the current moment. “Economics,” he does ruefully admit, “is still somewhat insular within the social sciences because of its methodological individualism, model-based abstraction, and mathematical and statistical formalism.” He then draws hope from what he sees changing:

But in recent decades, economists have reached out to other disciplines, incorporating many of their insights. Economic history is experiencing a revival, behavioral economics has put homo economicus on the defensive, and the study of culture has become mainstream. At the center of the discipline, distributional considerations are making a comeback. And economists have been playing an important role in studying the growing concentration of wealth, the costs of climate change, the concentration of important markets, the stagnation of income for the working class, and the changing patterns in social mobility.27

What Dani lists is true, in the sense that you or I, counting up the number of papers, books, and theses being produced nowadays, would find that more on all these topics than 30 years ago – but, taken together, does that constitute change?

Although many Americans might call them “justice issues” at this George Floyd-inspired moment of racial reckoning in America, I certainly agree with Dani that “distributional issues” are getting more attention from economists, and that the number of empirically-grounded – rather than purely theoretical – articles published in leading economic journals has increased.28

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28 I commend to readers here “Economics for an Inclusive Prosperity”, the group Rodrik has cofounded with Gabriel Zucman and Suresh Naidu, to be found here: https://econfip.org/
What I find missing from Rodrik’s argument is a persuasive claim for the intellectual integration and ordering of those approaches: there are, here and there, many interesting things going on in economic history, behavioral economics, climate economics, and massive data set manipulation, etc., to be sure – but signs that these individual explorations are being woven into a larger, more unified narrative theory that moves past marginalist paradigms, in my view, is still elusive. Pearls do not a necklace make.

Development economics, for example, is Rodrik’s specialty – so he knows as I do that it has always operated at an oblique, sometimes orthogonal, angle to mainstream economics views. Not least that’s because so many of its projects have been designed, financed and evaluated on a state-to-state basis. Consequently – and not surprisingly – a great deal of attention was paid to institutions and to empirical data that could measure “success” as understood by the bureaucratic administrators and funders involved. But rare were the critiques within the profession (though not outside it, in an ever-growing number of NGOs, major segments of the press, and a few universities and foundations) of the complex and often deeply corrupt bureaucratic and political interests of those same administrators and funders and their designated recipients. That all remained subordinated to, if not invisible in, most mainstream economic evaluations of the projects.

One could, I suppose, ask then why so many development economists embraced the Washington Consensus and its essential “markets-lead-states” models? Although the adoption by multilateral institutions of the Millennium Development Goals at the end of the last century (and since then, the Sustainable Development Goals) represents a turn away from that essentialism (that’s even included a measure of apology for imposing Consensus rules)²⁹, I’d argue that the field has never deeply examined how or why it made the turn toward Consensus essentialism in the first place.

Joseph Stiglitz floated the question succinctly, if a bit backhandedly, in reviewing what he insightfully dubbed “the post Washington Consensus consensus” in 2005:

“If there is a consensus today about what strategies are most likely to promote the development of the poorest countries in the world, it is this: there is no consensus except that the Washington consensus did not provide the answer. Its recipes were neither necessary nor sufficient for successful growth, though each of its policies made sense for particular countries at particular times.”³⁰

But how to get beyond agreement on what didn’t work? To do that requires not just more “empiricism” but well-structured arguments grounded in documentable decisions and changes taken by political and corporate institutions – lenses which have rarely made their way into economists’ models. Let me give an example of what I mean: to explain modern fossil-fuel


I wouldn’t start with the neoclassical economics of energy pricing and matching abstracted supply and demand. Instead I’d begin by explaining the concerns of leading European statesmen, bankers, and big businessmen in the late 19th century about the mining of coal and refining of oil. The questions weren’t just “economic” in a mainstream way; at issue was their unnerving likely impact on the technologies of war. War-making and its proffered and perceived threat are central functions of all states that economists almost never consider.

I’d then trace petroleum’s roles in both world wars, sketch how and why the US emerged a victor after both, and why after the second war (but not the first) it adopted hegemonic roles best described as “imperial”, albeit with lots of comparative qualifiers. I’d go on to describe the postwar petroleum management system of production and import quotas, taxes, and constrained technological innovation – part government, part industry – and how it seemed to offer the industry and the country stable and predictable growth for a time. I’d explain then how America’s multi-faceted crises in the 1960s led to Nixon’s election in 1968 and his destruction of the Bretton Woods system three years later.

I’d argue, for example, that the destruction of Bretton Woods led to OPEC’s massive spike of oil prices in 1973 and then again in 1979, why the West hadn’t then forced those prices back down, how petrodollars were recycled to New York and London banks which then lent them out to Third World governments and companies the banks had ignored for years, how the financing fueled a brief growth spurt in the developing world, how the Volcker Recession crushed that spurt, why the crushing created a crisis in banking, how states responded to that financial crisis by lifting regulations, which ushered in the neo-conservatism of Reagan and Thatcher, which in turn laid the ground for the neoliberalism of Clinton and Blair, their further deregulation of finance and its explosive growth ever since, and then the Great Recession.

One can write such an analytic political-economy history narratively – but I don’t know successful examples of doing it mathematically, using only highly-stylized and abstracted representative agents without names for those agents, individually or in small groups, or their positions or affiliate institutions that might help us understand how their decisions were made, how those decisions intersected others, and how conflicts between decisions were adjudicated and why.

That leaves me to make my third and final point: that we need to boldly take up what we think are the large social, political and moral projects of our time – and use not just our discipline’s conventional “economics toolkit” but our ability to think about, and argue for, human freedom and equality not just within but across borders, and moreover situated in production-consumptions that are cognizant of the planet’s carrying capacities, in a radically more-committed way.

Here Davos is right: “climate change” (shorthand in my mind for the total impact of the Anthropocene on the planet) and “economic inequality” (measured for me not just in income and wealth distribution terms but the legal, institutional and customary means by which property is defined and its rights allocated) are the issues we’re facing. But addressing them in ways beneficial to the many rather than the few requires of us a vast reimagining and rebuilding of what we are doing, for which our economistic toolkits alone are utterly inadequate.
The several challenges of Piketty

A decade ago, Thomas Piketty’s publication of Capital helped ignite not just a professional discussion by economists, nor even just a “public debate” – of which there are too many in this social-media-saturated world of ours – but a sudden and far-reaching mobilization of political energies among millions around issues of wealth and income distribution. What to me is almost breathtakingly remarkable is that it has a good chance of matching the impact that Keynes’ General Theory had long ago on the issues of aggregate growth and macro-intervention by government in the Roosevelt era, an enduring impact that in our own time justified the world’s massive fiscal and monetary response to the Great Recession a decade ago and is doing so again in the COVID crisis now.

Capital exemplifies many of the innovative “stylistic” or “methodological” features that, as I earlier noted, Dani Rodrik sees as recent hopeful signs for economics as a profession: in place of mathematical abstraction, Piketty demonstrates his deep commitment to empiricism, his affinity for the construction and manipulation of large-scale data sets, and his willingness to “do economics” in a narrative prose structure that names many of its actors individually, contextualizes their historical moment, and explains to us their roles and effects institutionally rather than, for the purposes of parsimonious modeling, aggregating those lives into the abstract representative “agents” of high mathematical theory.

More important, Piketty in his more recent Capital and Ideology, has gone beyond the massive empiricism of Capital to sketch out his admittedly-preliminary arguments for not just a new way of “doing economics” but of situating economic thinking in a larger vision of what I at the beginning of this paper chose to call – since I’m writing to fellow economists – “democratic efficiency”.31

For Piketty, this requires economists to consider first the question “what is a just society”? His “necessarily imperfect” answer is that it is

One that allows all of its members access to the widest possible range of fundamental goods. Fundamental goods include education, health, the right to vote, and more generally to participate as fully as possible in the various forms of social, cultural, economic, civic, and political life. A just society organizes socioeconomic relations, property rights, and the distribution of income and wealth in such a way as to all its least advantaged members to enjoy the highest possible life conditions. A just society in no way requires absolute uniformity or equality. To the extent that income and wealth inequalities are the result of different aspirations and distinct life

31 Piketty’s term is “participatory socialism”, which I find possibly understandable in French but too freighted and twisted in the American context. I’m writing this at a moment, after all, when the GOP talks, in echo of their best McCarthyite timbre, about Joe Biden being “a socialist president”.  
32 I would add that concern for “a just society” is not a concern only of progressive economists such as Piketty. Chicago’s Robert Fogel’s The Fourth Great Awakening: the Future of Egalitarianism takes up the issue quite boldly, insists like Piketty on situating economics in a broader historical and ethical context, eschews mathematical models for narrative prose – and, in a way I find fascinating, frames his argument in the successive history of religious struggles that help define the American public landscape. Concerned like Piketty about providing more equal access to education, health care, income security, Fogel (a Nobel laureate for his work in cliometrics) raises the “immaterial” issues of both individual and collective meaning and purpose, which he associates with religion, to the fore.
choices…they may be considered just. But this must be demonstrated, not assumed… That is why deliberation is both an end and a means. 33

In sum, what we need to rediscover about doing economics?

How then to summarize and close here, since I’m keenly aware that I’ve raised questions that I’ve not answered? Let me do that by pointing to the Forgotten Keynes – not Maynard, author of The General Theory (and so much more), but his father, Neville.

Neville Keynes lived a distinguished and useful life as an academic administrator of Cambridge University. He was also an admirer and in a way an apostle of Alfred Marshall, the Moses of Marginalism. Nearing the close of the 19th century, he took up Marshall’s great Principles of Economics in order to carry its theoretical implications into the practical world of Victorian Britain’s global economy.

To do so, he drew what I still count as a valuable distinction. Because “economics” – the sort of new “scientific economics” the Victorians thought they’d discovered (or designed, the difference never entirely clear since it was not clear in their own minds). This new “economics” thus was not meant to be a textbook or blackboard exercise of the academic mind whose lessons could then be translated (albeit with a guaranteed net loss of intellectual qualities) into “policy” – a process by which they imagined (as so many of our colleagues still do) the transformation that yields the great and incontestable good of “Progress”.

Keynes instead proposed a tripartite division he thought should define the work of the “new economics”. The three parts were these:

1. “positive economics” (the study of what is, and the way the economy works),
2. “normative economics” (the study of what the economy should be), and
3. “applied economics” (the art of economics, or economic policy). 34

Read carefully, one can recognize the effects of this trinitarianism on his son in The General Theory, even more (and in some ways more famously) in The Economic Consequences of the Peace, and then scattered throughout the hundreds of articles Maynard Keynes wrote for newspapers and magazines and their popular audiences – perhaps most relevant to us here, “Economic Possibilities for Our Grandchildren”. 35 The key is to grasp the distinction of the second – the study of what the economy should be – and to recognize what the Keynes, father and son, understood: that doing “normative economics” necessarily entails incorporation of values that lie beyond the “positive economics” of blackboard work – not because such “normative” economics is inferior to “positive” economics (a claim Milton Friedman popularized for Cold War colleagues in “The Methodology of Positive Economics”) 36 but because only through the “normative” consolidation can “positive” theorizing hope to exercise purchase on “the art and craft of policy-making” in the real world.

33 Piketty, Capitalism and Ideology, 968.
34 For a thoughtful though slightly forlorn engagement with the three ways of doing economics – and the failures of much of modern economics to heed Neville Keynes’ foresight, David Colander, “Retrospectives: The Lost Art of Economics,” Journal of Economic Perspectives, V6, No. 3 (Summer, 1992).
At a moment in American history when the neo-authoritarian flames ignited by the Trump presidency are still smoldering – and fully capable of reigniting – economists who want to affect "policy" and are willing to embrace the messy necessities of "politics" in order, in the words of Martin Luther King, to "bend the arc of the moral universe toward justice", these are promising times. A post-neoliberal world that could echo far beyond the classroom, textbook, and journal world in which so many of us live is being played out, boldly but awkwardly, in Washington right now. The contribution I think we could make is to open a new chapter in "teaching economics" to cross-disciplinary, empirical, and normative work that places a premium on engaging us and our students in the conversations that will push economies into pursuit of a democratic equality that can be experienced in day-to-day life (and not in our quadrennial visits to the voting booth) and toward a sustainable balance in our encounters with this tiny speck of a planet on which we have been given the gift of existence only briefly.

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Post-economics: Reconnecting reality and morality to escape the Econocene
Richard B. Norgaard  [University of California, Berkeley]

Planet Earth is now experiencing more rapid environmental change and greater extremes, clear indicators that humanity faces a challenging if not grim future. Unfolding in real time before our eyes are the staid forebodings of five assessments by the Intergovernmental Panel on Climate Change and the urgent warnings of natural scientists (Hobbs and Cramer, 2008; Beach and Clark, 2015; Bradford et al., 2018; Vosen, 2020; Ripple et al., 2021). In California, from where I write, the Sierra Nevada Mountains had a historically low snowpack in 2015 that was unprecedented in the last 500 years while 2010-2020 also included some of the largest snowpacks on record. Amidst rising temperatures, the summer of 2020 was unusually hot across California and included the highest temperature reliably recorded on earth: 130°F (54°C) in Death Valley in August. During 2020 California had five of its worst six fires in all of recorded history. This year, 2021, is another drought year, and the residents of the Berkeley hills received their first “Red Flag” prepare-for-evacuation fire warning in early May. Rising temperatures, longer droughts, extremely wet years, and unprecedented wildfires in California are raising public awareness that the future will likely be increasingly difficult. With a rapidly changing and variable climate, the ways in which we think about and manage energy, water, agriculture, and forests are changing significantly, yet old ways of thinking tied to the prior coevolution of understandings of reality and social organization persist and slow our response (Norgaard et al., 2021).

Thirty years ago, the global community of climate scientists was a few thousand. Today the community is orders of magnitude larger and blends into multiple millions more as environmental and energy scientists have restructured their research, engineers design new technologies, architects have adapted their designs, policymakers and planners have reconsidered public options, and managers have rethought how to engage with the realities of climate change. The scenarios of global integrated assessment models help inform national and regional models that guide the patchwork quilt of national, regional, and local climate adaptation plans. At the same time, local and regional phenomena raise questions about the dynamics of the global system. As we try to understand and respond to the diverse, interacting ramifications of climate change, we are beginning to see a dynamic, polycentric process of interactive learning and preparing for likely futures of Planet Earth.

Global environmental change is the greatest challenge humanity has ever faced. It is an existential challenge. Yet economists are notably absent in the mobilization to confront and work with it. William Nordhaus (2019) has encouraged economists to get involved. Andrew Oswald and Nicholas Stern (2019), on the other hand, document that the most cited economics journal, the Quarterly Journal of Economics, had yet to publish an article on climate change and that economics students rarely find the forecasts of global climate change.经济发展 is the greatest challenge humanity has ever faced. It is an existential challenge. Yet economists are notably absent in the mobilization to confront and work with it. William Nordhaus (2019) has encouraged economists to get involved. Andrew Oswald and Nicholas Stern (2019), on the other hand, document that the most cited economics journal, the Quarterly Journal of Economics, had yet to publish an article on climate change and that economics students rarely find the forecasts of global climate change.

1 This article draws on my engagement in the Millennium Ecosystem Assessment and the 5th Assessment of the IPCC as well as a decade assessing the adequacy of environmental science to water policy while serving on the State of California’s Delta Independent Science Board. This article complements and builds on Norgaard (2019) where some of the arguments here are more thoroughly explicated in my coevolutionary framework (Norgaard, 1994). There is some redundancy between this paper and Norgaard (2019) so that this paper can stand alone.
science included in their classes. Stephen Polasky et al. (2019) argue that the economics profession is simply not structured to address the greatest existential crisis of all time. They note that in 2018, the American Economic Review had but two articles that focused on any aspect of energy, environment, or ecology. For earthly matters, there are specialty journals. Though classical economists tried to speak to the material realities of land and agriculture (Schabas, 2007), neoclassical economists work in precise equations of socially constructed abstractions whose complex histories they avoid exploring (Hodgson, 2016). In short, mainstream economists, and many economists in lesser streams, and those stuck in eddies as well, have become detached from the realities of Planet Earth. Steve Keen (2020) argues that the few economists who are trying to address climate change are still doing a dismal job at characterizing and developing responses to the existential threat of climate change. Keen’s assessment echoes those made more than a decade earlier by DeCanio (2003), Baer (2007), Weitzman (2009), and Spash (2010) with respect to the difficulties of incorporating a likely catastrophe for future generations into a tradition of utility optimization within the conceptual guardrails of market thinking. Optimizing dominates prescriptive economic analyses. Resilience thinking to sustain safe operations now dominates non-economic policy discourses, corporate planning, and personal strategy advising. Economies continue, but the economics profession and supporting economistic beliefs are losing their relevance, and in this paper I argue that that is a good thing.

The Covid-19 pandemic has documented how poorly markets alone are prepared to respond to big surprises and uncertain futures. And yet, at the same time, with the help of government research and policy interventions, community ingenuity, and individual resilience and suffering, economies have not collapsed. Furthermore, in spite of viral, insane conservative denialism, debates about reality and morality with respect to the pandemic, black lives, indigenous peoples, immigration, gender equality, and elevated suicide rates among other topics rage in social media and political discourses. In spite of the considerable dysfunction of current modern societies, people have somehow been cooperatively muddling through the Covid-19 pandemic amidst other social issues just well enough. It appears that most societies are likely to come through the pandemic though their economies will also be modified by it.

For a little over a century, a mere blink of the eye in human history, western and westernized leaders, politicians, policymaker, and the public have operated on the belief that there can be a scientific discipline of economics, a field of study separate from moral philosophy and the natural sciences. Never mind that economics coevolved with a political discourse driven by power. Economics seemingly explains how society should be organized and people should live. The modern economic world arose around ideas generated by economists, and this

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2 Detachment from natural realities seems to have become characteristic of social scientists in general, not just economists. The environmental subdisciplines of history, sociology, and political science as well as in Marxist thought arose well after the subdiscipline of environmental economics. One striking example pertinent to this essay, historian Nathaniel Wolloch (2017) in his "Nature in the History of Economic Thought" mentions climate change in the second sentence of his Preface, noting how environment is now much in the news, but he never comes back to this existential crisis and how it might tie into the utilitarian view of nature and the idea of progress he so heartily supports in his history of economic thought.

3 Over the last decade, the term resilience and its variant have increasingly appeared, from advertisements to serious analysis, with respect to making a decision, seemingly regardless of the type of decision presumably due to increased anxieties about how to deal with the uncertainties of the future. Serious academic thinking on resilience can be found in the many good publications of the Stockholm Resilience Centre, [https://www.stockholmresilience.org](https://www.stockholmresilience.org).
world has been supported by corresponding public economistic beliefs that I refer to as “economism”. Economism has been modern capitalism’s myth system, or in computer parlance, capitalism’s operating system. It has stressed utilitarian moral beliefs compatible with economic assumptions that are critical to neoclassical economic theories. These beliefs include the idea that society is simply the sum of its individuals and their desires, that people can be perfectly, or at least sufficiently, informed to act rationally in markets, that markets balance individual greed for the common good, and that nature can be divided up into parts and owned and managed as property without systemic social and environmental consequences (Norgaard, 2019). Especially after World War II when the industrialized nations globally organized around economic beliefs and set out to spread their economic systems among less industrialized nations, these simple beliefs steadily displaced more complex moral discourses of traditional religions (Cobb, Jr, 2001). Economism has facilitated climate change and other anthropogenic drivers of rapid environmental change. Natural scientists are labeling current times the Anthropocene. I advocate using the term Econocene since our economic beliefs, both moral and those with respect to reality, and the econogenic drivers they facilitated have been critical to the rise of rapid environmental change. Furthermore, the term Econocene alludes to the current social and technological structures and human capital that are sustained by economism. Escaping the Econocene will require dynamically, polycentrically, reconnecting reality and morality writ large.

I have invoked the terms “reality” and “morality” several times and will do so many times again as if people, whether individually or collectively, were able to comprehend reality and morality directly. I have no doubt that reality will remain elusive. I do not imagine people comprehending the changing details and dynamics of natural systems, as well as the combined complexities of natural and social systems interacting. Nor do I imagine people mastering the long and diverse discourses on morality, as if there were no limits on human understanding. Of course, there are limits. We need to be continually humbly aware of our limits (see for example DeCanio, 2013). And so I am advocating that morality and reality need to be actively discussed, not things long lost in economic fables. Morality and reality have long been ignored in the vague units of analyses precisely presented in the mathematics of economists. It is time to listen to scientists and moral philosophers and to have more people entering into informed, reasoned debate. A key point of this paper is that we need to remove the constructed narrow conceptions of morality and reality associated with the economics and economism that have brought humanity and the planet to the brink of disaster and into centuries of rapid change.

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4 Other scholars have used this term, all somewhat differently. I add a unique argument to the term economism. It is not simply the beliefs of economists or the beliefs they push on the public. Rather, people have a need for explanations of the economic cosmos in which they live and answers to how to behave that economism fills much like religion in the past.

5 Many social thinkers have found that the term “Anthropocene” blames people in an inappropriately inclusive yet nondescript way that does not inform action. Capitalocene, Technocene, and other alternatives that have been put forward and the swirl of arguments initiated by Malm and Hornborg (2014) are reviewed by Lopez-Coronai and Magallanes-Guijon (2020).

6 Because modern ways of knowing are fractured, I have long advocated methodological pluralism (Norgaard, 1989). My historic concerns have been updated for the Econocene (Goddard, Kallis, and Norgaard, 2019). With the multiple perspectives on reality and morality that we have, reaching shared understanding through expert discussion and public discourse is the only option. I am concerned that such a process will work, let alone work fast enough to reach shared understandings rapidly enough in a future of rapid change.
Such a dynamic environmental and social future raises a key issue stated most effectively by Yuval Noah Harari (2011, p. 30):

“Any large scale human cooperation – whether a modern state, a medieval church, an ancient city or an archaic tribe – is rooted in common myths that exist only in people's collective imagination.”

Neoliberal economics and its supporting economism is simply a specific belief system, albeit one that has sustained unusually viral, imperial claims. Its demise and replacement with another economic belief system, however, will only briefly suffice. Due to historic and ongoing econogenic drivers, our options for acting within natural, social, and moral systems will keep changing, leading us into less known to totally unknown territory in all three systems. Operating in a world of more rapid and unpredictable change will require frequently changing our provisioning system and supporting culture. The democratic challenge is to acquire a widely shared public myth system that connects moral, social, and natural systems while also continually adapting to rapid change.

My argument unfolds as follows. Section I, “connectedness lost”, summarizes how human understanding has historically melded reality and morality, how the fragmented nature of current hegemonic human understanding arose, the consequences of fragmentation, and how fragmentation has been endured. Section II, “economics: a weakly anchored bridge” argues that economics has played an unusual role, as theory and as belief system, in bridging reality and morality, though only weakly anchored in either of them, to facilitate market organization and social decisions in the midst of knowledge fragmentation. Section III makes the hopeful case that society can directly link reality and morality in order to escape the Econocene. This would entail the demise of economics as the dominant way of thinking about public choices, corporate responsibility, and personal behavior. It also raises new questions about how consensual, learning, adapting societies might organize under rapid environmental change. Section IV concludes by noting hopeful signs within the remaining plurality of cultures and new visions that could help humanity through the coming centuries.

I. Connectedness lost

The Econocene arose because of the disconnects in human understanding between reality and morality. It was not always so. Early people learned through experimentation, accidental and purposeful, that they could hunt more successfully when individuals cooperated and coordinated their efforts. Cooperation works best when each has trust in how one’s fellow hunters will behave under different situations, and trust evolved into moral expectations. It also made sense for hunting parties to share their kill with others in their group, for some hunting parties were more successful one day, others the next. Children and elders needed food too. Hence, from the earliest of times, human provisioning and moral behavior have been tightly fused.

Hunting for meat as well as gathering vegetal foods involved working with the intricacies of nature. People became aware of the timing, location, behavior, and co-occurrence of different species. They evolved stories through experience about how to successfully interact with nature. Some stories improved hunting and gathering techniques. Less “true” stories were retold less frequently as they were less likely corroborated in practice, and some were eventually forgotten. Early people’s earthly stories entailed timing, and the timing of natural
events could be tied to the positions of the sun and the constellations. Existential myths evolved into stories connecting the techniques and ethics of people’s earthly existence to the cosmos above. Moral, social, material, and existential stories intertwined in traditional knowledge and facilitated social organization and collective and individual behavior.

The rise of agriculture and early hierarchical societies with kings, priests, and wise men required new ways of civilizing consciousness to rationalize the tedium of planting, weeding, and harvesting and rationalize why a few men were wise while the vast majority of men and women were workers. The religion supporting the provisioning system, then as now, rationalized authority and inequality, yet morality and reality intertwined sufficiently in agricultural societies to sustain human existence for millennia. Now, after only several centuries of corporate industrial capitalism, humanity faces a global existential crisis.

In Europe, Galileo’s findings began to challenge the Catholic Church’s authority to explain the celestial cosmos. Western understanding and consciousness transformed dramatically through the Renaissance, Reformation, and multiple Enlightenments across Europe. Historic Christian hopes for moral progress transformed into expectations for ever-increasing human understanding, technological progress, and control over the vicissitudes of nature (Bury 1920). The unity previously assured by God’s design, creation and management of planet Earth transformed into expectations for the unity of human knowledge. Luther’s argument that everyone was responsible for reading and interpreting the Bible and finding God themselves contributed to the rise of modern ideas about education, individual choice, responsibly learning and thinking for oneself, political authority, and governance, ideas crafted most notably by Hobbes, Locke, and Rousseau (Ryrie, 2017). Also in this period, the Catholic Church had the hubris to claim authority to convert the peoples of Europe’s new world to Catholicism even if it killed them. The Church’s hubris transformed into enlightened hubris and then capitalist and socialist hubris with respect to transforming or killing other cultures in the name of developing them.

Yet until early in the 19th century, merely two hundred years ago, an effort to intertwine reality and morality still existed in natural theology, the project to understand the character, will, and operating manual of God through the study of nature. Isaac Newton was both an accomplished moral philosopher and a path-breaking natural philosopher (Iliffe, 2017). The Physiocrats made moral arguments about who should be taxed based directly on what they understood to be physical realities (Schabas, 2007). Adam Smith wrote a treatise on astronomy to document his knowledge of natural systems before writing moral philosophy (Ross, 2010, chapter 7). Well into the 19th century, both natural and moral philosophy students as well as students of theology, medicine, and law studied William Paley’s “Natural Philosophy, or Evidences of the Existence and Attributes of the Deity collected from the Appearances of Nature” (Paley, 1835 and earlier editions). In 1874, social philosopher and economist John Stuart Mill intertwined the science of natural laws and natural religion (Mill, 1874). Morality and reality intertwined in the minds of European intellectual elites during the rise of disciplines in the latter 19th century. Then, not only reality and morality became separated but they too were broken into multiple disconnected compartments of western understanding. The creation of disciplines, specialized realms of knowledge, implicitly entailed the assumption that the linkages between disciplines were sufficiently weak that, for “practical” purposes, they could be ignored. Pure reason combined with empirical evidence in the style of Newton’s physics was only practical by assuming reality could be divided into parts. It was in this historical context that the 20th century idea arose that economics could be a separate field of human understanding.
The disconnectedness of Eurodescendant understanding has been endured in the faith that, with sufficient scientific progress, the separate disciplines will ultimately merge into a unity of knowledge, a single clear vision of reality, somehow accessible to all people (Millgram, 2018). Equally importantly, the belief arose that values could exist apart from facts, separating morality and reality. Yet western science continued to progress into finer and finer compartments, and the limited evidence of their fitting together into one structure ought to test intellectual faith in an eventual unity. And the directions western learning took, which areas of knowledge were delved into more deeply, has clearly reflected technological possibilities with lucrative private market opportunities rather than the promotion of community, caring, and what made for a meaningful life. As corporate industrial capitalism arose, new technologies were developed and deployed that were based on compartmentalized understanding that transformed society and nature in unexpected ways. These technologies were successful within their particular compartments. Material well-being increased in the short run, but because nature and society are not compartmentalized like the disciplines and technologies and ways of socially organizing they brought forth, social and environmental systems were breaking down in the longer run. In the process of going from an agrarian nation to a corporate industrial one, traditional moral teachings required more and more translation to relate to the world people were trying to understand. This created a need for new, more relevant moral beliefs that was filled by economism.

Fossil fuels provide the most important and clearest example of this process of specialized knowledge and technologies transforming people and the planet. The scientific research and technological developments that facilitated the exploitation, processing, and use of fossil fuels vastly increased people’s ability to move around; heat, cool, and light homes and offices; and power mining and industry. Fossil fuels provided fertilizers and pesticides, pumped water, and fueled farm equipment that intensified farm production and extended agriculture to land of lower fertility. The productivity gains from fossil fuels supported public education, research, and additional technologies, playing a key role in the social and environmental transformations to the world we now have. Though coal miners lived short, brutish lives, faith in human progress surged in the 19th century with the combustion of coal for steam-powered factories, trains, and boats. Contemplating these developments from America, William Bancroft gave a lengthy, enthusiastic oration before the New York Historical Society in 1854 titled: The Necessity, The Reality, and The Promise of the Progress of the Human Race. The initial incredible success of the age of fossil fuels led many to believe—the public, natural scientists and engineers, and especially economists – that technological progress was easy and inevitable (Malm, 2016). Bancroft’s confident progressive bombast was echoed 120 years later in the technologically optimistic and sharp dismissals by economists (Beckerman, 1972; Kaysen, 1972; ul Haq, 1972; Solow, 1973) of The Limits of Growth (Meadows and Meadows, 1972). Economists have had difficulty facing the existential nature of climate change because they tend to have a deep faith in progress and an uncanny ability to characterize bad outcomes as minor costs of progress.

There was only one problem with fossil fuels, a very big one. By combusting fossil fuels, modern economies released carbon back into the atmosphere, reversing the very processes that over millions of years had made Earth habitable for other species and eventually people. Svante Arrhenius warned western civilization of this terrible consequence of fossil fuel

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7 Let me simply acknowledge that a rich interweaving of the history of the European idea of a corporation is needed here but I am already challenged interweaving as much as I have in a single essay.
technology at the beginning of the 20th century, but as knowledge specialized his global understanding and predictions were effectively forgotten for half a century (Weart, 2008). Because Arrhenius’ knowledge was not broadly known among natural scientists and updated given actual greenhouse emissions, industrialized nations emitted vast amounts of carbon dioxide and other greenhouse gases until disaster loomed.\(^8\) Now, the risks and uncertainties of global environmental change present immense scientific, technological, and organizational challenges in times of great social inequities, loss of public trust, and the deliberate generation of misinformation. And these social breakdowns have also been a part of the larger transformations associated with fossil fuels and over-reliance on markets and the economistic beliefs that have supported these.\(^9\)

II. Economics: a weakly-anchored bridge

Through this splintering, yet systemically transformative, history that we now know was leading to the environmental, social, and moral challenges of rapid change and human existence itself, economists managed to portray their discipline as both bridging to reality and bridging to morality. Scholars within other disciplines who have claimed to bridge reality and morality have quickly been dismissed by the academic community as having gone beyond their expertise and moved into populist fantasy. Yet, economists as a whole have been able to play this bridging role. Changing metaphors, I am arguing that economics has been a splint to fractured western understanding, extending the disastrous period of applying disparate knowledge by seemingly holding reality and morality together.\(^10\)

The weak anchor in morality is clear. Economics has operated as an objective science promoting how society should organize around markets and has provided a methodology for choosing between public options derived from market values. Complicated moral issues of how individuals should behave in an increasingly complex provisioning system could be ignored because economics has prophesied how markets balance individual greed for the common good. Existential questions related to the meaning of life have been reduced to consuming more than thy neighbor. Similarly, the purpose of nations has been to promote economic growth. Caring for others and supporting one’s community were fine if they gave one pleasure, but economic morality denies any need for commitments or obligations to sacrifice on behalf of others. Nor has anything been sacred except property, liberty, and the freedom to choose between whatever could be marketed.\(^11\) Economists have periodically documented how trust and truthfulness support markets and other forms of social organization by reducing transactions costs (Arrow, 1974; Sen, 1977; Wade, 1992). Yet virtues like trust and truthfulness, the role of communities and care, or even why corporations exist have rarely been raised in freshman principles or graduate theory courses. Utility maximization and the incentives to choose well provided by market prices have been the whole story.

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\(^8\) The fossil-fuel driven economy and market mythology also facilitated the expansion of markets to full globalization, interconnecting ecosystems and reducing biodiversity and resilience across systems (Norgaard, 1988).

\(^9\) There is a vast literature on capitalism and democracy and arguments in favor of democratic capitalism as an alternative to the corporatocracy that exists.

\(^10\) I have simply touched on another major issue. In an American context, Robert Nelson (2016) touches on the reasons this has come about and the contradictions it presents for thoughtful policy analysts.

\(^11\) These are my own short summaries after five decades in the field and considerable reading. Herman Daly (2016) provides more elaborate and complementary reflections.
How economics has been only weakly anchored in reality is more difficult to document. The anchor has been mostly implicit. Behind every policy prescription have been implicit assumptions or beliefs about reality. In the United States, economists were blinded to the reality that the 2008 financial crisis was a bubble fed by a false belief because they were confident that markets were self-correcting and were not bothered that borrowers and lenders reverberated the belief that housing prices would only go up (Desai, 2015).

While most of the ways economics connects to reality have been implicit, there has been one clear example, the question of long-term resource availability for future generations. For this existential question, economists supposedly determined the nature of reality, indeed all future realities, through pure economic reasoning and market evidence. By looking at the history of capital and labor costs to extract resources, Barnett and Morse (1963) argued that resources were becoming easier to extract and therefore effectively more abundant. They turned Francis Bacon’s hope that science would conquer nature into a supposed fact to support using resources without constraint.

“The scientific age differs in kind, and not only in degree, from the preceding mechanical age. Not only ingenuity, but, increasingly, understanding, not luck, but systematic investigation, are turning the tables on nature, making her subservient to man” (Barnett and Morse, 1963, p. 10).

All humility before the complex interconnections and intricacies of nature were lost. Patriarchy reigned yet unchallenged. There was no possibility for a surprise such as climate change. And, of course, Arrhenius had already warned of this disaster; western science was simply not capable of keeping its own understandings connected in the minds of scientists.

Barnett and Morse spawned a flurry of improved analyses over the following decades that generally reached the same conclusion, resource scarcity had not limited growth and likely never would, though the environmental impacts of resource extraction tempered later analyses (Krautkramer, 1998). These economic analyses of the race between technology and resources stocks contained data on neither technology nor resource stocks. They confused the cost of extracting resources with the stock of resources remaining. In addition, the most sophisticated theoretical model of the cost of resource use over time (Hotelling, 1931) to which later scarcity analysts appealed assumes that resource extractors were perfectly informed of 1) the total stock of resources available on the planet, 2) the technologies yet to be invented to extract them, and 3) all future demands for the resource. But if resource extractors were already perfectly knowledgeable of resource stocks, future technologies, and future demand, it would make more sense simply to ask them whether resources were scarce rather than look at the history of extraction costs. If they were not so informed, the economic indicators would be falsely derived and nonsensical (Norgaard, 1991). Economists have become unhinged from reality.

Economists’ own limited understanding and false portrayal of their discipline corresponds with their efforts to reduce reason to mathematical models, market data, and econometrics. When that is not possible, they pretty much ignore any discrepancies from reality and morality. Two discrepancies are evident.

First, in the 19th and early 20th century, mathematical moral philosophers – from Cournot to Pigou – formalized how supply and demand interact in a multi-market economy and determined that there were multiple efficient market solutions depending on how the rights to
assets – land, capital, and human understanding – were distributed among the population. Which people have rights to how many assets determines who has how much income and thus how shares of the economies provisioning of goods and services are distributed among members of society. This is the central link between economics and morality. In hunting and gathering societies, one’s rights to an appropriate share of the provisioning process is critical to how well the tribe fares. Deprived people are poor provisioners. The connection between efficiency and distribution is still a fact explained to economics students. The relationship, however, is condensed to the first and second theorems of welfare economics, terminology that certainly looks like “pure reason”. In practice, however, the broader implications of the second theorem have almost been completely ignored. As a result of inappropriate policies in real economies, the distribution of who gets what has become increasingly immoral. Yet, until the inequities became really extreme, whenever an economist simply pointed out the possibility of efficient economies based on different asset distributions, they were chided for switching from being an objective scientist to being a political advocate. At the same time, economists advocated policies based on what would improve the efficiency of the current economy which has surely been no less political.

Another way of arguing this is that the logical connections of economics to morality have been lost as economists try to defy the “is-ought fallacy”. They repeatedly deduce what ought to be done using values derived from the societally and environmentally destructive economy that is.

Second, natural scientists in the latter 19th and early 20th century argued that how economists formulate production possibilities and economic growth ignores the first and second laws of thermodynamics (Martinez-Alier and Schlüpmann, 1987; Baumgartner et al., 2001). In addition, as the field of ecology arose, the scientific documentation of the interconnectedness of species, well known to natural philosophers and theologians two centuries ago, was in sharp contrast to the economic assumption of nature’s complete divisibility (Norgaard, 1985). In economic thought, nonmarket interconnections between people or between people and nature are described as externalities, supposed special situations. In fact, the connections to social and natural realities are rampant and only external to the economic mind. Disciplines need assumptions, belief systems need myths, yet reality has ways of intervening. Climate change is one of those and in a big way.

The fragmentation of human knowledge over the last century and a half is the primary cause of the current human predicament and humanity’s greatest obstacle to moving beyond it. We know much about many particular parts of the whole in great detail and little about how the details fit into a system and interrelate let alone connect with morality. The fragmentation of knowledge brought on the breakdown of planetary, social, and moral systems. Fragmentation impedes our ability to understand our global situation. And fragmentated knowledge will be of
little help escaping the Econocene. Within the splintering history, economic thinking lost its
own connections to morality and reality while ironically being able to portray itself as
objectively connecting them.

There has been another very important process going on as well. Economic beliefs, or
economism, held and appealed to by economists, policy analysts, and politicians and held by
the public became syncretic with Christianity. In many ways economism replaced parts of
earlier Christian and other religious traditions. Frank Knight proclaimed nearly a century ago
that economic thinking had to be believed in like a religion and few should question its tenets
(Knight 1932). While few economists ever read this article by Knight, his commandment was
effectively brought to pass. Economism explains the rise of the Econocene and rationalizes
the economic cosmos in which people live. Economism promotes individual greed over care
for others, and equates a meaningful life with energy use and material accumulation greater
than thy neighbor (Norgaard, Goddard, and Sager, 2017). Economism fills the need in Euro-
descendant psyches for moral and material understanding that traditional knowledges have
filled in hunting and gathering societies and formal religion has played until the rise of
science, fossil fuel technologies, and corporate industrial capitalism in the 19th century.

The problem is that the Eurodescendant evolving economistic myth system has contributed
to a disaster for people and the planet. To escape the unfolding misfortunes of the
Econocene, at whatever stage we can, we need to abandon our past myths and the
economic structures it supported. This will entail great costs for those who have benefitted
the most from the past myths: especially capitalists invested in fossil fuel resources,
technologies, and infrastructures. At the same time, the poor who are dependent on the
current system but without the wealth needed for a secure transition will also be severely hit
unless very significant redistribution policies are put in place.

That bad western economics has brought all of humanity and nature to the brink of disaster is
a core argument of ecological economics. The argument presented here is an elaboration on
this core, one that emphasizes the role economics and the economistic beliefs that support it
appear to have played in providing a bridge between reality and morality amidst
fragmented knowledge. In this weakly anchored bridging role, economics and economic myths justified
and extended the unfolding disaster of fragmented knowledge and its associated
technologies and ways of socially organizing.

III. Provisioning during rapid, uncertain change

Given this explanation of how the human predicament arose, what does it suggest for
responding to a rapidly changing and uncertain future? Many environmental scientists

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14 I struggle here as to how to characterize scientific understanding of the future. In my way of
understanding, all systems – ecosystems, hydrological systems, climate systems, weather systems, etc.
– are scientific constructs that have helped us think and understand, yet they do not exist in nature.
Conceptual systems have boundaries that we have put on nature that do not actually exist in the
continua we mostly find. There are also different ways of hypothesizing how things interact within a
system, for example species interacting in a food web or species interacting and coevolving in a food
web in response to external disturbances. While systems thinking is more systematic than thinking, for
example, about the characteristics of an individual species, systems thinking necessarily still has
artificial boundaries. The areal boundaries of ecosystems are constructs of the mind and need to be
chosen strategically with respect to organisms and processes that are central to the analysis (Wiens,
1989). The question in my mind is whether the ways in which we have learned through seeing nature as
predict total environmental systems breakdown as multiple thresholds or tipping points are crossed (Rockström et al., 2009; Barnosky et al., 2012; Wunderling et al., 2021) and planet Earth goes into a hot phase that will be uninhabitable (Steffen et al., 2018). Such tipping point perspectives are difficult to work with because the science of detecting thresholds in environmental systems, let alone socio-environmental systems, before they are crossed is weak (Biggs, Carpenter, and Brock, 2009). The warning from this scientific understanding and its inherent uncertainties are clear: humanity needs to back off from likely brinks as soon and quickly as possible.\(^{15}\) This is the state of scientific understanding. As when a nation is attacked and war is declared, the appropriate defense policy is not fine-tuned by values derived from the current consumptive economy. Rather, societies in war rapidly alter their economy to serve immediate war needs. Markets and economists play a subsidiary role in war, as they will in rapid environmental change. And if total catastrophe unfolds, economies and economic belief systems will collapse as well. In the catastrophe scenario, there is little role for economics.\(^{16}\)

The catastrophe may, however, be slow enough for us to have sufficient glimpses of the possibilities to come in the future that we may be able to be proactively adaptive. This may better describe the reality we are beginning to experience. I contend that this future will also necessitate abandoning economics as we have known it and reconnecting directly to reality and morality writ large.

Rapid, uncertain environmental change will instigate continual new challenges that can only be met by social changes determined by new and foreseeable realities and moral considerations. Modern fossil-fuel driven economies created a new environmental determinism. Economies must now and for several centuries in the future constantly proactively prepare for the changing environment. But the economics profession will dwindle in importance. The profession has thrived on “the economy tells us so” stories passing as serious analysis that will no longer be possible with the economy rapidly adapting to new and foreseeable environmental conditions.\(^{17}\) The economics profession has also thrived through stories of progress as economic growth that will no longer be relevant. In the hopeful vision of the future that I am presenting here, policy debates will be about reality and morality writ large.

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\(^{15}\) There were scientists in the early days of climate science who doubted the basic arguments and evidence of the science and expressed optimistic progressive views of the future. Physicists S. Fred Singer, Fred Seitz, and William Nierenberg led the skeptics movement, but these scientists have not been replaced by comparably reputable skeptics in recent decades. I should also note that the scenarios of the IPCC have included less dire futures, but the accumulation of evidence keeps showing the less dire scenarios less likely while more dire scenarios have become more likely.

\(^{16}\) My argument in this paper and elsewhere is that economic beliefs held by economists and the public are central to the disaster we are in. I acknowledge that scientists who have joined warnings of catastrophe have also joined with economists in articles that have argued for only extensions of economics, staying within the dominant paradigm, as if economics were not central to the creation of the problem in the first place (see for example Polasky et al., 2019 and their references to earlier efforts). Similarly, Kinzig et al. (2013) and Dasgupta (2021) argue for selecting future investments using correct social values that are favorable to conserving environmental systems while only peripherally noting the role of economics in having promoted and continuing to promote inappropriate values for environmental conservation.

\(^{17}\) Let me be clear, I am not suggesting that “economy-tells-us-so” empirical analyses and public stories were ever appropriate for understanding and reaching the kind of economy we want to have. I am merely pointing out that with the economy changing even more rapidly, the analyses and stories will be wrong even more quickly than in the past (Mishan, 1986:83).
With rapid, uncertain environmental change, possible foreseeable conditions will typically be different than they have ever been in the past. There will be no normal. Yet to some extent, future conditions will be somewhat foreseeable. Far more scientific talent will need to be dedicated to trying to understand global to local environmental change. More scientists will be needed to follow the numerous changes at smaller scales and their implications to what we conceive to be planetary subsystems, and the feedbacks between phenomena at smaller scales for emergent phenomena at larger scales. Emergent phenomena at smaller scales, or within particular global systems, will provide clues to larger global developments that will, in turn, feedback on other regional or subsystem processes. The natural science community will be spending far more time looking forward, and interacting and learning across scales, in order to inform how the provisioning process might respond. I can foresee a process of dynamically, polycentrically learning and adapting. Environmental scientists will be spending far less time documenting past details that no longer matter.

Economists advocate free markets over central planning because markets are said to automatically respond to new demand and supply conditions well before central planning bureaucrats even notice them let alone actually do anything. Markets adjust systemwide automatically without complicated economic planning models. Entrepreneurs and investors have an interest in adjusting to changing times, central economic planners do not. Yet during the rapidly changing uncertainties and high risks of war, pandemics, and plagues, nations have consistently moved toward more centralized economic planning to provide overriding guidance to markets. Morality and reality, not markets, must be the primary signaling system as to what should be done.

IV. Hopeful signs

The Covid-19 pandemic provides lessons for the Econocene. The pandemic could have been handled better had more scientists undertaken more research in anticipation of such a global public health threat, if hospitals and other parts of the medical system had not optimized their profit-maximizing capabilities for historically normal times, if pharmaceutical companies had maintained excess and more diverse production capacities, if national and international health agencies had also been better staffed to handle surprises, if businesses, schools, and other organizations had been able to switch to online operation more effectively, and most of all, if people had connected the scientific and moral issues truthfully. Yet the “could have” followed by the many “ifs” of this statement presumes considerably better insight into a changing and uncertain future and a significant transformation toward mindfulness and preparedness for the public good. Great costs have been borne by the poor during the pandemic, especially women and children, and mothers generally bore a greater share of the home-schooling burden. Great costs could have been avoided if reality and morality had been more squarely faced more quickly. Yet thus far, economies, with the help of government interventions, have also been more resilient than they might have been.

In the future, as in the Covid-19 pandemic, provisioning of food, housing, and health will be primary goals through the next two centuries of rapid, uncertain environmental change. As

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18 When I took my first economics course six decades ago, the professor explained that the common notion that there are primary, secondary, and tertiary sectors was nonsense. Every sector is interdependent with every other, and he noted how farming requires industry to provide tractors and fertilizers. And, of course, a dollar spent on fine jewelry by the rich was the same as a dollar spent on food by the poor.
in the pandemic, provisioning workers will be deemed essential and a policy emphasis will be on assuring their success. The pandemic demonstrated that the economist’s myth that additional income to billionaires trickles down has lost its charm. Because droughts, floods, and pestilence will be more common, yet their exact locations not easily predicted, there will be much greater need for redundancy in the provisioning system. More land will need to be allocated to food production, for example, given that under rapid, uncertain change there will be a lower likelihood that any particular area will have the environmental, agricultural, and social conditions needed to be productive. Similarly, specialization in tasks will be less pronounced as experts and laborers will broaden their skills to meet emergency and newly emerging needs. As in the pandemic, the right to food and health care has been debated quite directly on real and moral terms and less using economic arguments. As in the pandemic, people and businesses will be more flexible with respect to how and where work gets done. Long term contracts will be few to assure flexibility. Medical care systems, including hospitals, will be less fine-tuned to optimally handle the conditions of the past. Perhaps the mix of corporations will shift toward smaller adaptive businesses. Public policies will seek to maintain a functional economy, but whether GDP is growing will be of much less interest.

The new challenges of rapid environmental change can only be met by looking forward into the reality that is likely coming and addressing it on moral considerations. The economics profession has relied on analyses of the past and current economy to derive policy recommendations to guide the economy going forward. “The economy tells us so stories” were never justified in economic theory. With rapid change, looking back at an economy that has whizzed past will be harder to justify as a basis for saying what should be. Policy analysts will have to look ahead, weigh real-world driving forces, and morally respond to them. Policy debates will be about reality and morality, not whether GDP is rising fast enough to keep capitalists happy.

With more rapid global change, the multiple environmental sciences currently working at different locales and issues with their own regional scales will need to connect to global environmental dynamics to determine how to work with potential events and implement action. This is occurring in climate science and adaptation now. The Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services is another working experiment in dynamic, polycentric science and preparation. Dynamic polycentricity has been evident in how societies are learning about and responding to the Covid-19 pandemic too. Globally, societies will need to learn from, improve on, expand, and democratize the use of dynamic polycentric science to inform societal preparation. Significantly more societal effort will have to go into forward-looking science, updating collective understanding, and preparing for new conditions. To this end, citizen science will likely also become a normal part of life.

There will be major problems. Even before the consequences of climate change fully hit, it was difficult to address global environmental problems (Koetz, Farrell, and Bridgewater, 2011). The whole point of legislation and of regulations within agencies is to document and solidify public understanding and enable collective action in the future. Past social structures impede new understanding and action in turbulent times. Old ways of understanding are embedded in legislation that will get in the way of acting effectively unless legislation is constantly updated and/or written in a manner that is broad enough to admit change. Yet the only purpose of legislation and regulations are to provide legal structure and moral guidance, to set bounds within which agencies, corporations, and individuals can make decisions. More
frequently changed or broadly worded legislation and agency regulations will also necessitate more public trust which will also be more difficult to secure during rapid change.

Just finding words for new phenomena and processes and adapting the meanings of existing words is a major social challenge today (Norgaard, 2016). Scientists and the public will need to become much more sophisticated, to be constructively inquisitive, about words. This would entail a significant transition in political discourse, news reporting, and the exchanges on social media.

In spite of all of these challenges, this is still my hopeful vision of humanity’s survival and escape from the Econocene. There will be considerable human tragedy and biodiversity loss before humanity and the biosphere return to less rapidly changing times. It is easy to imagine old myths from modernity getting in the way of the new shared understandings we will need for collective effectiveness in times of change. I do not know whether humanity’s muddling through the Covid-19 pandemic with little reliance on economism is evidence that there is a deeper system of common myths in the collective imagination still available to sustain life through continued change and surprise. Reducing current economic drivers of environmental change will help in the present and relieve delayed drivers in the future.

I remain hopeful in the possibilities of transitioning to a patchwork quilt of polycentric, adaptive provisioning systems driven by a sense of community and ethic of care, individual joy in gratitude for life, and from local to global preparative socio-biospherical wisdom (Norgaard, 1994). I find hope in the ethos of “Buen Viver” and arguments for a new emphasis on culture (Schafer 2008). I am pleased with the rise of alternative feminist social thought and the new respect for indigenous knowledges. I find hope in the degrowth discourse (Kallis et al., 2020). I revel in the prospects for designing human futures around existing plural provisioning cultures that richly span morality and reality (Arturo Escobar, 2018; Kothari, Salleh and Escobar, 2019; and Speth and Courier, 2021). While we will need to better understand biospheric dynamics, we will probably succeed by individually accepting the joy of limits on our own lives (Kallis, 2019). These are simply my favorites among an expanding literature envisioning possible futures beyond economics. My hopes for surviving the considerable challenges of rapid change through the next few centuries and escaping the Econocene leave economics as the dominant belief system in the past.

Acknowledgments

This paper benefitted immensely from thoughtful readings and inquisitive and constructive comments on earlier drafts provided by William R. Burnside, Katharine N. Farrell, Jessica J. Goddard, Giorgos Kallis, Laurel R. Prevetti, Nancy A. Rader, Nicholas Surber, John A. Wiens, and Peter Worley (Columbus, Ohio). All remaining shortcomings are mine.

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19 I am not implying that the human cooperation we have observed is in any way morally respectable. I am simply inverse reasoning from the fact that human interactions have not totally broken out in war indicates that at least a barely sufficient level of cooperation is at work.


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SUGGESTED CITATION:

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What is economics? A policy discipline for the real world

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Abstract
Economics is a policy discipline. It is engaged with the problems, large and small, of social organization and the general good. As such it co-evolves with circumstances. It is historically contingent. The application of economic ideas to specific problems under specific circumstances may succeed or fail, and in the latter case, people with different ideas normally rise to prominence.

Capitalism is an economic system whose characteristics and problems have preoccupied economists since the 18th century. It is not the only such system; there were economists before capitalism going back to Aristotle. And there have been economists under competing systems: socialism and communism had economists of their own. Today it is common to speak of “varieties of capitalism”; these too foster economists of differing views and perspectives. Economists and economic theories are a byproduct of the social order that spawns them.

The world to which economic policies are ultimately addressed is a complex system. Yet economists seeking to develop appropriate policies are necessarily guided by simplifications and heuristics. The question before the discipline is to decide what sort of simplification is best suited to the task. In the spirit of modern science, this paper argues that appropriate generalizations, simplifications, heuristics and principles are to be derived from a study of the actual world. While these may deploy mathematical tools and draw on insights from the behavior of mathematical systems, the latter by themselves are inadequate, especially where they start from the dead dogmas of the neoclassical mainstream: \textit{ex nihilo nihil fit}.

“Kepler undertook to draw a curve through the places of Mars, and his greatest service to science was in impressing on men’s minds that this was the thing to be done if they wished to improve astronomy; that they were not to content themselves with inquiring whether one system of epicycles was better than another, but that they were to sit down to the figures and find out what the curve, in truth was” (Charles Sanders Peirce, 1877).

Introduction
Economics is a policy discipline. It is engaged with the problems, large and small, of social organization and the general good. As such it co-evolves with circumstances. It is historically contingent. The application of economic ideas to specific problems under specific circumstances may succeed or fail, and in the latter case, people with different ideas normally rise to prominence.

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Capitalism is an economic system whose characteristics and problems have preoccupied economists since the 18th century. It is not the only such system; there were economists before capitalism going back to Aristotle. And there have been economists under competing systems: socialism and communism had economists of their own. Today it is common to speak of “varieties of capitalism” (Hall and Soskice, 2001) these too foster economists of differing views and perspectives. Economists and economic theories are a byproduct of the social order that spawns them.

The world to which economic policies are ultimately addressed is a complex system. Yet economists seeking to develop appropriate policies are necessarily guided by simplifications and heuristics. The question before the discipline – and the challenge of this volume – is to decide what sort of simplification is best suited to the task. In the spirit of C.S. Peirce and of modern science, this paper argues that appropriate generalizations, simplifications, heuristics and principles are to be derived from a study of the actual world. While these may deploy mathematical tools and draw on insights from the behavior of mathematical systems, the latter by themselves are inadequate, especially where they start from the dead dogmas of the neoclassical mainstream: ex nihilo nihil fit. Later in this paper, we will sketch out elements of research strategies that seem suited to a complex economic world. Before reaching that point, we must first draw the critical distinction between the practice of economics in the sense meant here, and the academic discipline that presently describes itself as economics.

**Neoclassical dogma**

Contemporary academic economics – orthodox, mainstream, neoclassical – was born in reaction to a panoply of radical turns in the second half of the 19th century. These included: a) the left turn of classical political economy from David Ricardo to Karl Marx in the logical extension of the labor theory of value; b) Henry George’s application of Ricardo’s single-tax doctrine to American land, naturally opposed by American landowners; and c) the easy-credit, bimetallist, free-silver campaigns of the Populist movement in the 1880s and 1890s, naturally opposed by bankers (Frank, 2020). Behind all of these economic and political movements lay an even more profound shift in the nature of thought, namely the emergence of evolutionary materialism and the frightening realization that the entire majestic and terrible apparatus of Nature is the product of self-organizing complex systems governed by a small number of indefeasible physical and biological laws, including most notably natural selection and the second law of thermodynamics (Georgescu-Roegen, 1971).

Against this horror of incessant change, irreversible time and potential upheaval, against the awful thought that human institutions are man-made, mutable and subject in principle to democratic control, neoclassical economics created a temple to Nature’s God, conveniently domesticated in the guise of an all-knowing, self-regulating and benign market. In this happy mirage, the ancient Chinese notions of celestial harmony, appropriated to economics by François Quesnay (Davis, 1983), morphed into Alfred Marshall’s scissors of supply-and-demand, and were generalized by Léon Walras to the case of n commodities in perfectly competitive markets, each equilibrated by flexible prices through the workings of an invisible auctioneer. Eventually Paul Samuelson (1947) cast the pall of J. Willard Gibbs over economic formalization, and misappropriated Adam Smith’s metaphor of the Invisible Hand, which was
altogether too apt to be left to the partly-prosaic use Smith actually made of it. With the Arrow-Debreu (1954) model of general equilibrium the system was nearly complete, give or take the introduction of rational expectations and the representative agent, leading ultimately to computable general equilibrium (Scarf, 1973) and the Dynamic Stochastic General Equilibrium model.

The appeal of the neoclassical system was two-fold. First, it resonated with the urge of all societies to justify themselves in terms of some higher purpose: the Will of God, la mission civilisatrice, Manifest Destiny, and so on. Such a need becomes acute when the actual organizing principle of a commercial culture is as crass as money-making for its own sake, or the pleasures of material consumption. Second, the dogma provided a robust ideological response first to Georgism (Gaffney, 2007) and later to Marxism in the fetid intellectual climate of the Cold War. And so, it became the entry portal to a host of academic sinecures from which deviants were rigorously barred – even though the practical work of making economic policy continued to be done, in most Western countries, by a relative handful of non-neoclassical non-Marxists, mostly the otherwise-ostracized followers of John Maynard Keynes.

From the standpoint of intellectual hegemony, what was most important was the framework. In defiance of Joseph Schumpeter’s (1942) dictum that capitalism is an evolutionary system, neoclassical economics fixed the taxonomic structures and concepts of the field once and for all: rational self-interest, representative agents, firms and households, capital and labor, prices and quantities, profits and wages, neutral money, natural rates of interest and unemployment, general equilibrium. Any deviation from this framework simply stepped out of bounds; it was by definition not economics. The theory was pure, and as the pure theory applied to nothing, it could not evolve.

Mainstream orthodox economics was thus hitched to Professor Pangloss and his timeless dogma of everything for the best in the best of all possible worlds, except when there are distortions such as interdependent preferences, Giffen goods, Veblen goods, monopoly, externalities, public goods, public spending or taxation, let alone any form of uncertainty not reducible to a probability distribution with finite variance. In short, modern academic economics adopted the “model of a modern Major General” in Gilbert and Sullivan’s Pirates of Penzance. Its range extends to all conceivable situations, except those that matter in the real world.

In the real world, with the disappearance of state socialist systems in the USSR and Eastern Europe – though not in China – neoclassical doctrines enjoyed a brief period of actual hegemony, famously captured in the phrase “the end of history” (Fukuyama, 1992). In policy, efforts to make social realities appear to correspond to the underlying suppositions of the ideal type had been underway already for a decade, and these accelerated in an atmosphere of triumphalism. Deregulation, privatization, low taxes, small government, free trade and

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1 “By preferring the support of domestic to that of foreign industry, he intends only his own security; and by directing that industry in such a manner as its produce may be of the greatest value, he intends only his own gain, and he is in this, as in many other cases, led by an invisible hand to promote an end which was no part of his intention...” (Smith, 1776). Roncaglia (2019, p. 177) notes that there are two other references to the phrase in Smith’s work, neither of which support the meaning commonly attributed to the expression.

2 “For my military knowledge, though I’m plucky and Adventury/ Has only been brought down to the beginning of the Century/ But still, in matters vegetable, animal, and mineral/ I am the very model of a modern Major-General...”
sound money were the watchwords of this era, denoted as neoliberalism. In a remarkably short time they brought on deindustrialization, stagnation, inequality, and precarity (Azmanova, 2020) With the Great Financial Crisis of 2007-09 the dogmas stood exposed and embarrassed: how could a theory that took no account of money or credit, that indeed had no banking sector and lacked any concept of fraud (Black, 2005), explain the greatest financial catastrophe of all time? But inertia and tenure carried neoclassical economics forward to the pandemic of 2020, at which moment a – possibly definitive – further collapse occurred (Galbraith, 2020).

Behavioral economics and complexity economics

What is to take the place of neoclassical economics and its neoliberal policy offshoot? There is no shortage of candidates, grouped under the broad banner of economic heterodoxy. Some of these successor doctrines – behavioral economics and complexity economics are examples of note – take the neoclassical orthodoxies as a point of departure. They therefore continue to define themselves in relation to those orthodoxies. Others avoided the gravitational pull altogether – or, as in the exceptional case of Keynes, made a “long struggle to escape”.

The behaviorists depart from neoclassicism by giving up strict assumptions of rational and maximizing behavior. Complexity theorists explore the dynamics of interacting agents and recursive functions. Both achieve a measure of academic reputability by remaining in close dialog with the orthodox mainstream. Neither pays more than a glancing tribute to earlier generations or other canons (Reinert, Ghosh and Kattel, 2016) of economic thought. The model is that of neoclassical offshoots – New Institutionalism, New Classical Economics, New Keynesianism – that make a vampire practice of colonizing older words and draining them of their previous meaning.

The dilemma of these offshoots lies in having accepted the false premise of the orthodoxy to which it proposes to serve as the alternative. The conceit is of a dispassionate search for timeless truth, once again pursued by “relaxing restrictive assumptions” in the interest of “greater realism”. Thus, for example, in complexity theories agents follow simple rules and end up generating intricate and unpredictable patterns, nonlinear recursive functions give the same result, the variance of returns turns out to be non-normal, and so forth. But once the starting point is taken to be the neoclassical competitive general equilibrium model, these exercises are largely drained of insight and relevance. The behaviorists can tell us that real people do not appear to fit well into the portrait of autonomous, selfish, commodity-obsessed pleasure-seekers that is “economic man”. The complexity theorists can tell us, as Arthur (2021) does, is that a system constructed from confections of interacting agents may be unstable. These things, even the dimmest observer of real-existing capitalism already knew.3

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3 It is true enough that the application of statistical physics to finance (Yakovenko and Rosser, 2021) reduces orthodox finance theory to rubble. But what does that really add to the experience of Long Term Capital Management (Galbraith, 2000), the Asian crisis, the NASDAQ bust, the Great Financial Crisis or even The Great Crash, 1929 (Galbraith, 2009)? What, in particular, do these new theories suggest that we do? An economist concerned with the effective regulation of a banking system gains little from mathematical statements of commonplace experience.
Evolutionary and biophysical economics

The evolutionary and biophysical approach to economic phenomena is not a new thing, and actually long predates the neoclassical orthodoxy from which some believe it now springs. It began with the intellectual interplay of Malthus and Darwin, developed through Marx and Henry Carey and (to a degree) in the work of the German Historical School, brewed and fermented in the pragmatic and pluralist effervescence of late 19th century American philosophy, and achieved a first full articulation in the hands of Thorstein Veblen (1898). It thereafter developed in the Institutionalist tradition of John R. Commons (1934) and Clarence E. Ayres (1944), among many others, and emerged as the dominant intellectual force in American economics under the New Deal.

The Keynesian and Institutionalist traditions then merged again in North America in the hands of John Kenneth Galbraith (Carter, 2020), and the line of work known as Post Keynesian was pursued by Robert Eisner, Hyman Minsky, Paul Davidson and Wynne Godley; it has now been popularized by William Mitchell, Randall Wray (2006), Stephanie Kelton (2020), Pavlina Tcherneva (2020) and others as Modern Monetary Theory. In Britain the Keynesian cause was carried forward by Richard Kahn, Nicholas Kaldor (1985), Joan Robinson, and others, with close ties to an Italian strain led by Luigi Pasinetti, Pierangelo Garegnani, Mario Nuti and others. The calamity of the great financial crisis is treated in many books and articles, a notable example being Varoufakis, Halevi and Theocarakis (2011). Specific attention to the problem of resource quality originates with Jevons, was developed in the modern era by Meadows et al. (1972) and is advanced today by the biophysical school (Hall and Klitgaard, 2018), (Chen and Galbraith, 2009). A further branch of the Institutionalist approach, with roots in Marx and Keynes, occurred in Development Economics, epitomized by such figures as Albert Hirschman, Raoul Prebisch, Samir Amin and many others, and carried forward still today by (among others) Ha-Joon Chang and Ilene Grabel (2014), Jayati Ghosh, and Luiz Carlos Bresser Pereira (2010). One might further identify a branch of transition-economy and China studies, in which the New Pragmatism of Grzegorz Kolodko (2020) figures, along with Isabella Weber’s (2021) path-breaking history of Chinese policy-making. There are many more; applications will vary according to problems.

The useful economist

The common characteristic of almost all of this work, excepting a few who preoccupied themselves with logical skirmishes with the neoclassical orthodoxy – e.g., the Cambridge-Cambridge controversies over the theory of capital (Robinson, 1956; Sraffa, 1960; Harcourt, 1972), or in microeconomics (Keen, 2011) – is that the protagonists were concerned, in the first place, with the practical questions of policy facing their governments or the international community of which they were a part. Whether reformist or revolutionary, their economics was (and still is) the elucidation of problems and the means of dealing with them. The purpose of economic reasoning is to inform and buttress political and social choices. It is not merely to create a simulation that kinda-sorta emulates some run of economic data.

The useful economist is one who engages in the quest for solutions. A truly useful economist does so in an open-minded, informed way, aware of underlying principles but not hypnotized by them, and independent of financial gain and personal ambitions, whether political or for status and celebrity among economists. The behavior of bankers and speculators, the emissions of factories and transport networks, the withdrawal of critical resources from a finite
reserve in the crust of the earth, the level and distribution of wages, profits and rents, fair and effective taxation, how to achieve the willing cooperation of free citizens in pursuit of the common good — all these are part of what a useful economist may study. The person who stands outside and aloof from such questions, who purports merely to “model the system” is, for most purposes, an idler, not so much a scientist as a hobbyist.

Thus: Adam Smith’s objective was to promote the interests and welfare of the trading community of which he was part, by expounding the virtues of large markets and the division of labor. David Ricardo sought to shift the burden of taxation from profits to rent, and Henry George sought to shift them from wages to rent, in both cases so that taxes would fall on the idle and unproductive landholding classes. Karl Marx wrote Capital as a theoretical foundation for the expropriation of capitalists. John Maynard Keynes sought to save and reform Britain and the bourgeois democratic order by advancing a practical cure for mass unemployment. John Kenneth Galbraith (1958, 1967) turned the attention of his readers to the economic problems of abundance: public squalor, pollution, residual poverty, the cultural and aesthetic wasteland, and corporate power. Hyman Minsky described the phase transitions of financial instability — hedge, speculative, Ponzi — and the need for Big Government and a Big Central Bank as stabilizing devices. Milton Friedman, an engaged conservative, co-wrote a monetary history to support a case for monetary rules (Friedman and Schwartz, 1963). In brief, the notion that any significant economist of any century has stood aside from the policy questions of their time is purest pretense.

**Economic research**

Economic research as it should be, is therefore a matter of trying to understand how the particular complex system in which we happen to live functions — or malfunctions — at any particular time, and to what sort of forces, pressures and policies it responds. Here one illuminating example is P. Chen’s (2021) demonstration, from real data, that exchange-rate crises “can only be caused by financial oligarchs”. Another was Mandelbrot’s (1999) showing that the movement of capital asset prices is well-modeled by a multifractal generator, hence open to intrinsically unpredictable crashes. Such findings have the property that they are drawn from, or compared directly to, the phenomena of the real-existing economy in such a way as to motivate political and social choices. They do not consist in deriving policy from first principles, nor in exploring the properties of mathematical systems that – however interesting in themselves – map poorly or not at all to the complex economy in which we live. Again, examples of good work can be multiplied; the problem is not that research on the real world is lacking among economists and (especially) physical scientists turning their attention to economic questions. It is rather that such research lacks the standing it deserves, because it cannot be integrated into the dominant theory.

The next section of the paper argues that for further progress, an economics for the post-neoliberal era needs to develop empirical research methods adapted to the evolutionary perspective, thus permitting the worlds of the academy and those of practical policy to again be associated in a useful way. As Peirce wrote of Kepler, this is what is to be done if economics is to be improved. The paper presents some approaches drawn from projects carried out by this author over five decades. They are presented here partly in a spirit of apologia pro vita sua, but also in the hope that they may usefully illuminate a methodological argument.
The problem of economic taxonomy

A characteristic problem in the analysis of complex systems is the construction of an efficient taxonomy. Here the example of botany is instructive. In the hands of Linnaeus, a beautiful system was crafted, truly a work of art, but not science in the modern sense. Today the Linnaean classification is no longer in use. Instead, biological taxonomy is rooted in consanguinity at the molecular level, and reflects the divergences of an evolutionary process over time. Similar principles apply to classification in any complex system, including chemistry, engineering, and anthropology, and have been applied to the history of technology (Basalla, 1989). Such evolutionary trees are fundamental to scientific inquiry in respect of any complex field.

Economics in both its academic incarnation and in its practical work remains largely innocent of this prerequisite to understanding. “Purely theoretical” economics is characterized by taxonomies of only the most primitive and ideological kind, largely reflecting the recognized class divisions in Europe several centuries back (landlords, capitalists, workers) or their denatured replacements (capital and labor, households and firms). Practical macroeconomics relies on the taxonomic structure of the national income and product accounts, which is behavioral only insofar as Keynes (1936), Simon Kuznets, Richard Stone and other architects of the system saw fit to distinguish household consumption, business investment and government spending, as well as exports and imports, as behaviorally distinct categories. Nearly a century later it is by no means clear that the distinctions remain valid. For example, household consumption is comprised of non-durables, durables, and services. But while non-durables consumption closely tracks services (up until the pandemic), durables and business investment share characteristics. A model of behavior might therefore usefully reclassify household durables as a form of investment. More generally, a parsimonious and efficient analysis of aggregate expenditure should be preceded by a reclassification exercise, so that the taxonomic categories are not blurred by massively overlapping behavioral patterns, nor kept distinct artificially by force of habit. But such preliminary and behavioral reclassifications of given category schemes are rare, if not absent, in the literature.

Microeconomic analysis per contra tends to rely on survey data, usually that undertaken by a national government in pursuit of some ancillary obligation, such as a decennial census or the Current Population Survey in the United States. Such surveys are rarely identical or coordinated across countries (with limited exceptions in modern Europe) and so making them compatible for the purpose of transnational comparison is a major scientific task, undertaken in recent years over a limited range of mostly rich countries by the Luxembourg Income Study. But there is a deeper difficulty, which is that the information collected is limited by the mandate of the survey taker, and this typically runs to such personal characteristics as gender, age, ethnicity (as legally defined in the country), years of schooling and so forth. The result is a vast literature on the economics of race, gender, and education, but far less attention to issues (such as industrial change) that do not so easily fit the template or register as characteristics of individuals and households.

In a similar vein, Thomas Piketty and his colleagues (Alverado et al., 2017) have mined income tax records to construct historical accounts of the income distribution in a range of countries over periods extending to more than a century in a few cases. The approach has advantages over surveys insofar as tax records cover a large number of individuals and households and ostensibly capture better information from the upper tail of the distribution. But, as with survey questions or even more so, the information reported is nationally-specific,
since taxable income is a legal fact of the national tax code, and tax codes vary widely from one nation to the next. And the overall reach is limited by sparse record-keeping, tax avoidance, and the fact that many countries do not collect income taxes (Galbraith, 2019b). Even in the case of the United States, care is essential; tax filers and households are not synonymous categories (Rose, 2018), and changes in tax law and in filing incentives may have serious adverse effects on data comparability over time.

Another type of economic statistic relates to employers, establishments, industries and sectors, often collated by geographical subdivisions, such as states, provinces, counties, townships and so forth. Such data are a reservoir of information about what P. Chen (2021) following Walt Rostow, terms the meso-economy, otherwise known as the industrial structure or level of economic development. However, these measures are characteristically bibliographic and Linnaean; industries and sectors are grouped according to a wide and confused variety of criteria, including product type, process type, stage of the production process and others. From time to time new industries emerge and new categories are added or old ones subdivided. The classification scheme is typically hierarchical, in the manner of geographic subdivisions categories are divided and subdivided in layers of decreasing group size and increasing detail. But the industries and sectors so specified are intrinsically arbitrary to a degree; underlying similarities of genealogy or behavior do not rule, and so any given group structure will contain units whose organic similarity to, or difference from, each other will vary widely. As with almost every other source of data, economists working on policy issues rarely trouble to acknowledge the reification of category structure, which accepting a prior taxonomy constructed by non-economists for unrelated purposes necessarily implies. A similar story holds for budget categories in the analysis of public spending; expenditure categories constructed for legal and political reasons are not necessarily informative for social and policy analysis.

Efficient evolutionary classification

An evolutionary approach to taxonomy was worked out for the federal budget of the United States by this author in a PhD dissertation (Galbraith, 1981), later developed by Berner (2005). A parallel approach was developed and applied to US industries in Galbraith (1998), Ferguson and Galbraith (1999) and various papers in Galbraith and Berner (2001). The essence in all cases is to find a suitable, unit-free criterion variable to measure the behavioral similarities across and between taxonomic categories. In the case of budget categories, the variable is simply the percentage change in nominal expenditure from one period (usually a year) to the next. Each category therefore has a vector of characteristics of length T-1 where T is the total number of time periods in the data set. A simple Euclidean distance in (T-1) space then gives a measure of the behavioral similarity, from which clusters minimizing within group variance can be constructed, with the number of clusters determined by a criterion of information loss as stepwise agglomeration proceeds.

In the case of industrial data, the concept of industry-specific labor rents (Katz and Summers, 1989) establishes a case to use changes in annual average wages (technically, payroll per employee) as the criterion variable. Underlying categories can be a single hierarchical data set by industry or region, or a hybrid of categories, including sector, region, gender and others, provided the categories are mutually exclusive (non-overlapping). The resulting classification tree provides an efficient summary of divergences through time, as entities within clusters do not diverge (or diverge less) than entities separated at the different
branching levels of the tree. The cluster tree is thus a map of the evolution of elements within a complex system. A suitable group structure is then chosen by means of a stopping rule: groups are preserved as distinct entities, rather than being added together at later stages in the clustering, when the information lost by agglomeration exceeds a previously-specified threshold.

**Extracting information from evolutionary group structures**

Once a suitable clustering is achieved, a further step is the calculation of discriminant functions that account for the largest proportion of variation between groups. These functions are a vector of weighting coefficients (eigenvectors) of the matrix of time-series vectors underpinning the now-constructed evolutionary category scheme. The resulting eigenvectors are themselves synthetic time-series variables, capturing forces that move the variation between groups. The corresponding eigenvalues give the relative weight or importance of each force in accounting for between-group variations. Plots of the resulting cross-products illustrate the closeness and distance of the underlying elements along the various dimensions. As a final step, each eigenvector can be matched to historical time-series so as to identify the economic, political and social forces at play. For a full presentation of the technique, see Galbraith and Lu (1999).

In this way, Ferguson and Galbraith (1999) demonstrated that relative wage changes in the years 1920 to 1946 in the United States were driven by changes in (a) effective demand, (b) labor organization and strike activity, and (c) exchange rate movements, in that order of importance, together accounting for 90 percent of the significant differential effects. This analysis thus obviated the hypothetical effects of education levels, demand for skills, new technologies and so forth, that were commonly advanced in the mainstream literature, largely on *a priori* grounds (Goldin and Katz, 2010). Galbraith (1998) performed a similar analysis on the United States for the years 1958 to 1992, which identified variations in business investment, consumption spending, trade protections and war as four forces accounting for about 59 percent of inter-industry variation in wages.

The technique is thus non-parametric and atheoretic, yet capable of tracking changing conditions in a complex economic system with high precision and in a fashion that elucidates the impact of policies, mass mobilizations, external markets and environmental conditions on distributive outcomes.

**Exploiting complexity for policy-relevant patterns: the case of inequalities**

Real-existing economic systems have properties that are illuminated by the behavior of simple recursive non-linear functions; in particular they exhibit phase transitions – Minsky’s trichotomy of hedge, speculative and Ponzi financial positions being an example (Minsky 2008) – and the characteristics of systems produced by multifractal generators, in particular distributions of asset price changes with infinite variance and a tendency to sudden and unforeseen collapse. These are useful heuristics, pointing in particular to the utility of trading limits, circuit breakers, price controls (Galbraith, 1952) and storage-release systems (Graham, 1997) for key commodities. Such policies have since ancient times been deployed to stabilize unstable economies (Weber, 2021).
The fractal and self-similar properties of actual economies present another opportunity for policy-relevant research. That is to exploit what is visible and recorded to measure what is partly invisible and unrecorded. It is characteristic of administrative data sets – again by sector, industry or region – that they are collected routinely, in stable format, on a regular basis, compiling a consistent record over time and space. They are of course biased in their coverage – informal work is not covered; services and agriculture are often covered poorly. But self-similarity suggests, and in many instances even dictates, that fluctuations observed between the categories and groups whose size and mean incomes are measured in the data will bear a normally-consistent relationship to unobserved sectors of the complex economy.

Thus, the evolution of a between-groups measure of inequality, typically the between-groups component of Theil’s T-statistic (Theil 1972, Galbraith, 2014), will capture the principal movements of inequality in the economy as a whole. For a full discussion of the theory, see Conçeicão et al. (2001). And a compilation of such measures permits the creation of dense, consistent measures of inequality across countries and regions covering extended historical periods, along with precise detail as to which groups (regions, sectors, industries) are driving change in the overall measures (Galbraith and Kum, 2005). In this way a new accounting for complex structural change becomes possible. For further details on global inequality data sets, their quality and uses, see Galbraith, Halbach et al. (2016) and Galbraith, Choi et al. (2016).

Once an appropriately dense and consistent panel of inequality measures has been created, the simple application of a two-way fixed-effects regression to the panel permits a bi-dimensional decomposition, yielding both a consistent ranking of inequalities across countries (or other geographic units) and the mapping of a common pattern of change through time (Galbraith and Choi, 2020). Thus, there emerges a macroeconomics of inequalities at the global level (Galbraith 2007; 2019). The patterns of change in these data for the period since the early 1960s reveal clear turning points that correspond to the global financial crisis of the early 1980s, and to the peak of the credit boom in 2000/2001, thus bringing out forcefully the roles of debt, interest rates and financial crises as drivers of economic inequalities in the world economy. This in turn, once again, points directly toward relevant policies at global scale.

The integration of distributive outcomes with forces affecting the economy as a whole illuminate the need to break yet another bad but deeply-entrenched taxonomic habit: the distinction between “macro” and “micro” economics. This distinction arose as a political compromise in American economics departments after World War II, between temporarily-ascendant Keynesians and the large strata of “determined little-thinkers” (Solow, 1967) trained in Marshallian supply-and-demand analytics and neither capable of nor willing to make the leap from neoclassical Newtonian mechanics to Keynes’ invocation of Einstein’s relativity as the basis for an integrated theory of economics-as-a-whole (Galbraith, 1996). But a showing that as an empirical matter changes in distribution – the major ostensible object of microeconomic analysis – are driven by a small number of large forces acting on the whole economy through time is dispositive in favor of a change of theory.

Similarly, the demonstration as an empirical matter that national economies are closely linked – and not merely in Europe where de facto political integration is well-advanced – makes the case for an integrated global economic analysis as the point of departure for economic thought. The fact that statistical services operate mainly at other levels is an inconvenience but not an excuse.
Regulation as the general policy challenge for real economies

That complexity arises in open, dissipative systems (P. Chen, 2021) as part of the development of the life process is not itself economics. It is a universal insight drawing on physics, and illuminating biological, mechanical and social systems alike. A common feature of all such systems is regulation; the mechanics of survival require that the forces passing through the system be contained – in terms of temperature, pressure, volume – within the capacity of the materials from which the system is built to withstand them (J. Chen and Galbraith, 2011; 2012a; 2012b). A proper post-neoliberal economics is the art of applying this principle to the workings of economic life. Sometimes this involves lifting restrictions that are no longer necessary; sometimes it involves creating and imposing regulations and standards so as to foster stability, sustainability, and resilience.

In particular, financial instability, underpinned by a strong tendency of free financial markets to degenerate into waves of financial fraud, is a key driving force behind crisis, collapse and rising inequalities, and at the global level. The problem for the policy economist is therefore defined: how to stabilize the worldwide financial sector? The problem is not new; it was most forcefully addressed in the United States in the early 1930s through the Emergency Banking Act, the creation of the Securities and Exchange Commission, the separation of investment and commercial banking and the introduction of federal deposit insurance. Further it becomes apparent that the deregulation of the financial sector, pursued in the United States from the late 1970s and emulated around the world, has been the enabler of the resurgence of instability and ultimate crisis. Attention therefore focuses on how to achieve an appropriate re-regulation and a reassertion of stabilizing control, without at the same time extinguishing the legitimate functions of credit and debt.

The problem of appropriate, effective and autonomous financial regulation at global scale is one of the most difficult facing the policy economist at the present time, but its purpose here is to illustrate one case of the general policy problem: how best to regulate the economic system. In their need for regulation, economic systems are no different from biological or mechanical systems; without regulation and maintenance and rules-of-the-road they invariably fail in a short period of time. In understanding the nature and purpose of regulation, we come to a very basic difference between real economists and their mainstream, orthodox, model-driven academic simulacra.

In the mainstream view, the pure economy is a self-regulating world; the only requirement for equilibrium at the maximum of social welfare is that all property rights be allocated and that the price system be allowed full freedom to adjust. Any impediments to the optimal result are due to externalities, distortions and interventions, and the function of the economist is to try to remove these so far as possible. This frame of mind helps to account, for example, for the enthusiasm of some economists for small business, for their hostility to unions and to taxes, and for the recurrent references to competition as a device to ensure better economic performance. Regulation is therefore a second-best approach, to be treated as having costs as well as benefits, and to be imposed only to the minimum degree necessary to offset such impediments to optimality as cannot be removed.

To the economist operating on policy in the real world, regulation is not an add-on. It is rather a necessary condition for the emergence of complex structures in the first place. Regulation is the complex of laws, rules, norms and habits that make the sustained functioning of complex systems possible. Only the Robinson Crusoe economy, lacking any actual society, can do...
without it, and then only in the absence of resource or environmental constraints, affecting the sustainability of even Robinson Crusoe on his island over time. In the real world, without economic regulation there would be no long production chains, no stable lines of credit, no trust in supermarkets or electric appliances or medicine, no air travel, no mass market for automobiles or any other complex device. Indeed, one can reasonably define the process of economic development as the achievement of regulatory standards that permit complex economic activities to emerge and to be carried out on a large scale and to be sustained over time. Rich countries have these standards and – if they wish to remain rich – they enforce them.

Conclusion

That the world economy is a complex system is beyond doubt. The issue for economists is how best to come to grips with this reality. One popular approach is to begin from the premodern simplicities of the neoclassical model, showing that fundamental differences in the behavior of the model occur when the most elementary assumptions are relaxed. This is progress of a most limited sort, providing some sense of intellectual achievement but no real guidance to the economist, whose task is to assist society in moving from the present into the future.

The alternative, advocated and described in this paper, is to exploit the methods of evolutionary science and some properties of complex systems to classify, measure, analyze and understand the forces driving significant economic change at the global, continental, national and local levels. This is the sort of knowledge that can then be turned to the practical work of economic governance, in the pursuit of common values for society as a whole: security, sustainability, prosperity and freedom. While methods will evolve with circumstance, this is broadly the approach taken by every economist in history whose name is likely to be remembered.

References


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Beyond indifference: An economics for the future
Lukas Bäuerle [Cusanus University for Social Transformation, Germany]

Introduction

Pressing arguments for a paradigm shift in economics – based on an assessment of mainstream economics and its shortcomings – are out there for quite a while now. The emperor has been declared long dead in intellectual terms (Keen, 2001), but it is still firmly alive institutionally. This is the only reason why we still have to talk about it at all. Having said this, it goes without saying that the “intellectual monoculture” (Graupe, 2015) in economics as documented in bibliometric (Glötzl and Aigner, 2019) or network analyses (Ötsch, Pühringer, and Hirte, 2018) is not a matter of intellectual superiority (Fourcade, Ollion and Algan, 2015), but one of institutional power (Maeßè et al., 2021). And this is one of the most important points, where neoliberalism firmly intersects with the discipline of economics. For the neoliberal thought collective (Mirowski and Plehwe, 2009) has contributed in significant terms to the institutional stabilization of a specific kind of economic thinking, regardless of its adequacy to empirical phenomena and the needs of all stakeholders involved in economies around the globe. But economics has never developed into a synonym for neoliberalism. Over the course of the second half of the 20th century up to today, there has been an ongoing struggle against the discipline’s occupation. This struggle is possibly getting closer to a moment of decision. A “Great Mindshift” (Göpel, 2016), overcoming a fundamentally unsustainable paradigm, could be imminent: both in economics as in society. From the discipline’s historical genesis of the last 100 years, we can learn that any paradigm shift in economics will not just have to outline a different way of thinking, but the practical and institutional conditions of possibility to provide these innovations academic as well as extra-academic air to come and stay alive. The quest for a post-neoliberal economics is not just an intellectual, but a fundamentally institutional one.

If this is the challenge, I propose to use the spaces critical economists have been able to gain or maintain for a pragmatic and transformative discourse on the (economic) challenges the global society is facing in the 21st century. Let us turn the page and switch from critiques of the soon-to-be-past to the intellectual and practical co-creation of economic futures worth living in. Let us overcome the discipline’s fundamental indifference towards an ever-changing world full of pressing issues and start caring for them. In this vein it proves to be a promising sign that there is a growing network in societies around the globe eager for concrete proposals aiming at a fundamental reconfiguration of economic processes (Fridays for Future 2021; Together for Future 2021). Both aspects of the specific historic moment we are living through – escalating socio-ecological crises and a public increasingly understanding the need for fundamental economic transformation – should encourage us to foster a new self-confident economic discourse and its institutionalization; a discourse that invites all sorts of players with all kinds of academic and extra-academic backgrounds and affiliations willing to join the actual game to come along. Having contributed in building a new university from scratch along with fellow colleagues, I have strong reason to believe that there will be a path for new academic and economic realities – if we just walk it.
The following pages are a proposal meant to participate in this discussion – it is not intended as a last word to end all theoretical, epistemological or institutional discussions once and for all. Actually, the illusion of last words in economic reasoning is the first thing to overcome on the way to a new economic paradigm.

The epistemological meaning of “There is no planet B”

The most powerful and at the same time dangerous aspect of neoliberal thought is its conception of economic reality as governed by a separate sphere of absolute truths. In aligning with a long-standing tradition of perennial philosophies (lat. perennis: constant, lasting), neoliberalism has set out to reconfigure our world according to an image that was dead from the very outset. The myth neoliberalism is operating on philosophically is the idea of a world of hidden truths and principles behind the ambiguous and chaotic phenomena we are experiencing in daily life. There is a logic behind the chaos, reigning independently of time and space. This proposition is not just “talk” – it is a deep-seated ontological frame of contemporary economic thought that has found its way into the discipline's textbooks and, hence, has to be learnt by millions of students around the globe semester after semester (i.e. in Mankiw, 2021, 2ff.). “Stop engaging with reality and start thinking about economic laws working behind the curtains” is what students face but a lot of them intuitively reject (Pühringer and Bäuerle, 2019).

The power of neoliberal thought, then, lies with conquering the public imagination through institutionalized impact and installing the fixed imagery of a narrowly interpreted “Market Mechanism” working miraculously backstage in the theatre of social reality. For the talk of “The Market” is the specific figure, neoliberals have chosen to install on the speculative second stage. This figure – though invisible for the lay spectator – is nevertheless said to subliminally determine the play on the frontstage of reality just as natural laws do. Against the manifold claims of economic thought to finally have reached a “scientific” stage, we have witnessed a deep mystification of social reality emanating from its partial marriage with neoliberalism (Ötsch, 2019; Herrmann-Pillath, 2021). The political imperative going along with this development is the subordination of the lifeworld under the reign of this central mythical
image. At its core, neoliberalism is a political program aiming at the constant realization of a social imagery that at the same time it propagates to already exist on a second stage behind the curtains (Bröckling, Krasmann and Lemke, 2011). This is why neoliberal narratives, presumably lacking any alternatives, can wrap themselves in a glow of unpoliticalness. And this is why neoliberal policies never find a point of rest – there will always be a difference between the front stage and the backstage.

**Figure 2.** The Neoliberal Theater, my depiction

<table>
<thead>
<tr>
<th>The Neoliberal Theater</th>
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<tbody>
<tr>
<td><strong>Backstage (Planet B)</strong></td>
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<tr>
<td>Models, images, semantics of ‘The Market’</td>
</tr>
<tr>
<td><strong>Frontstage (Planet A)</strong></td>
</tr>
<tr>
<td>Loge</td>
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Photo courtesy portrait Milton Friedman: The Friedman Foundation for Educational Choice.

The corresponding image of science and the scientist is that of a distanced expert, retreating into safe and comfortable loges. Having abandoned a chaotic and contradictory real world in intellectual terms, the hope is that it becomes possible to gain a cooled-down, objective view of reality’s backstage. Looking right beyond reality demands a dissociation from it. In alignment with objectivist and positivist philosophies of science, economics has become enthralled with the hope of seeing ever further when retreating ever farther. Loges as materialized in academic chairs provide a tranquil spot in contemporary society to meditate and speculate about all sorts of background workings and eventually tell students and the public about it.

Now, the simple turn being proposed here is the abandonment of the illusionary second ontic sphere behind the experienceable lifeworld. “There is no planet B” behind planet A. It is about time that economic science, freed from its neoliberal occupations, regains a plurality of serious relationships with planet A and the historical processes running on it – understanding relationships at least, caring relationships at best. That is why an economics of the future should seize to be paradigmatic in nature (at least in Kuhnian terms): for it will not help to replace a collectively unconscious planet B with a new and shiny planet C equally subliminal. Putting a serious relationship with a crisis-laden economic reality center stage will require an
ever plural, empirical (lat. empiricus: following the experience) and fundamentally pragmatic 
economics. The time for retreats into tranquil refuges of the mind is over. Paradigm shifts 
should not be historical exceptions happening once a century but rather the reflexive modus 
operandi of a science in constant and conscious adaption to its surroundings. The dissociated 
economist should give way for the engaged and therefore ever attentive economist – both in 
intellectual and practical terms.

The normative meaning of “There is no planet B”

The one question any quest for shifting paradigms in economics or elsewhere has to answer 
and firmly hold alive is the question of why to shift at all – or, more generally speaking – why 
to set out for any economic-scientific endeavor in the first place. All too often, this 
fundamental question is being addressed on an anecdotal level at the most or relegated to 
the collective unconscious at worst. It is highly normative in nature for its (explicit or implicit) 
answering leads to all sorts of different styles of economic reasoning to be justified. To be 
clear: the valuation of these different variants of economics, stemming from different 
motivations to engage in it in the first place, cannot be answered from “nowhere” (Nagel 
1986). At the motivational starting point of science, scientists necessarily have to legitimize 
themselves in connection to the non-scientific, the public. To put it differently: to legitimize 
science scientifically is a circular undertaking leading to the ever-refined reproduction of 
intellectual sameness. Science is necessarily motivated by non-scientific means, as it is 
always fundamentally rooted in non-scientific realms, just as the scientist is always first and 
also human, citizen, child, before assuming his:her profession. This is the reason why any 
scientific endeavor bears normative traits. So: why fight for a paradigm shift in economics?

In relation to the specific historical setting I am situated in, I propose to fundamentally change 
the outset of economics as a science out of two reasons: The first reason relates to the 
performativity or power of predominant economic thought, whose deep-seated frames are 
overwhelmingly inspired (mostly implicitly) by neoliberal narratives. Besides other factors, the 
performatve and increasingly institutionalized subordination of socio-ecological realms under 
the reign of a fixed set of beliefs, under the central eidos of a narrowly defined superpower 
called “The Market”, has contributed to an increasingly fatal deformation of the former. These 
processes have been termed “economic imperialism” (Becker, 1993; Fine and Milonakis, 
2009), “economizations” (Çalışkan and Callon, 2009; 2010) or “financializations” (Polanyi 
Levitt, 2019) before. They have, for instance, led to a vulnerable institutional homogenization 
instead of institutional diversity (Schimank and Volkmann, 2012; Christensen, 2017), short-
termism instead of long-term sustainability, efficiency-orientation instead of the orientation on 
equity, sufficiency or other values (Goodwin, 2009; Hoeschele, 2016), the focus on individual 
evolvement rather than that of groups or societies, obscuration of socio-ecological 
embeddedness of economic action (Raworth, 2017), the reframing of nature and humans as 
means rather than ends (Adaman and Madra, 2014; Spring, 2015) etc.

The integration and reorganization of all sorts of economic, social and natural spheres by 
neoliberal means has undeniably led to an enormous expansion of monetarized value and, 
therefore, of wealth. But it was deliberatively not secured for its socially just sharing in spatial, 
ethnic, gender, generational etc. terms, contributing to fractured and highly polarized societies 
(United Nations and Department of Economic and Social Affairs, 2020; Alvaredo et al., 2017; 
Institute for Policy Studies, 2021). Furthermore, the program of economic imperialism 
deliberatively contributed to the enclosure if not destruction of all sorts of lived institutional
and practical arrangements, of a diverse economic knowledge around the globe (i.e. Hilton, 2021; Shiva, 2005; Khan, 1994). Finally and most seriously: the gains in monetarized value came at the invaluable and in many cases irretrievable prize of natural destruction on and of Planet A (IPCC, 2018, chap. 3; 2015, sec. 2.2-2.4; IPBES and IPCC, 2021, 6ff.). The intellectual or practical contribution of significant parts of the economics discipline to this development alone is reason enough to engage in its transformation.

The second reason highlights the other reality of the economics discipline. For while economics has contributed to impoverishments of socio-ecological realms at its worst, it has contributed to their protection, reconstruction and transformation at its best (i.e. Ostrom, 1990; Storper and Salais, 1997; Unger 1998; Ghosh and Chandrasekhar, 2009; Drèze, 2017; Riahi et al., 2017; Kemfert, 2020). When actually opening up for a dialogical, interested interaction with real-world economic processes and all stakeholders involved in their realization, economics can help them to better realize their ends by their means. At least it can set out to understand economic reality as realized by living people, businesses and states in everyday practices – as opposed to reigned by timeless principles and laws. At best, and out of this anchoring in real-world evidence, it can describe pathways to different economic futures, informing public debates in search for pathways to cope with problems at hand.

Both of these reasons are combined in an unavoidable contextualization of the economics discipline in a historical setting it can help both understand and transform. Instead of clinging to long-dead sophistries of objectivity and value-neutrality, economists should be able to reflect and justify their specific associations towards extra-academic realms they are inescapably bound to. They do not just nurture scientists financially but allow them to be meaningful in existential terms. There has to be a planet A on which to imagine planets X, Y and Z, not the other way around. Hence, for economics, “There is no planet B” means that it should organize its institutional and intellectual existence around a fundamental care for planet A. It is no flaw of the scientist to care for the world and her/his specific subject (Pulcini, 2009; Roos and Hoffart, 2021; Howard-Grenville, 2021). Just as biologists advocate for species conversation based on their findings or virologists advocate for mask protection based on empirical evidence of their usefulness, economists can point to desirable actions to be taken. But stripped of the illusions of a Planet B, these actions will always have to relate to living people and the planet. It is ultimately their wellbeing that should be cared for as opposed to the wellbeing of abstract ideals or indicators. Thus, to check on the suitability of all sorts of interpretative means helping to grasp or measure the (economic) wellbeing of living people and the planet will remain an everlasting task of the discipline. Instead of dissociating from reality in order to gain and emit misleading unambiguousness, it should develop knowledge and proposals in direct association with an ever-ambiguous reality. The times for methodically or outright ideologically induced reliance on simplistic indicators of economic success emerging from Planet B’s have to come to an end.

In order to do so, economics will have to invigorate two senses long lost in its modern and postmodern tradition: a sense of reality on the one hand and an imaginative sense on the other.
Regaining a sense of reality: the interpretative turn

Diving deeply into the mythical worlds of Planet B and reproducing them every new semester, we economists have unlearnt to perceive the obvious and self-evident. Certainly, the marginalist revolution and its successors with their hope to find certainty in abstraction had a paramount impact on this widening “real-word gap”. Ever since the 1870s, scientificity in economics has increasingly been connected with a formal dissociation from first-hand experiences and common knowledge (Düppe, 2009; Milonakis and Fine, 2009). As economists we deliberately lost our connection and empathy with our surrounding environment, we train future economists to learn this dissociation and we have inspired public debates to follow suit, thereby contributing to heated and dividing discourses, centering around ideological camps.

Any significant paradigm shift in economics will have to re-center around an *experiencable signified* in order to bring about orientation and meaningful debate. This shift will be both normative and epistemological in nature for it enables a new epistemic and moral relationship – an attitude – towards a world that in spite of its aggressive neglect in economics obviously never seized to exist. Traditions such as phenomenology (Husserl, 1996; Schütz, 1972), pragmatism (Dewey, 1922; Unger, 2007), critical realism (Archer 1995; Lawson 1997) and social theories of praxis (Giddens, 1984; Taylor, 1989; Reckwitz, 2002) among others can be of great help in this quest. One possibility to frame this scientific association with the world could be its denomination as *interpretative turn* in economics. Where does “the economy” take place? Which phenomena in space and time are we talking about? How are they being interpreted? Which actors are being involved in the realization and interpretation of the economic phenomenon at hand? What do they do, how do they do it and most importantly: why do they do it? “Real-world economics” should not wander on perennial paths itself, but always relate itself to a specific field, to specific actors to a specific economic phenomenon in time and space. What it will find is people relating themselves intellectually and performatively to their surroundings. In doing so they constantly (re-)produce social institutions in social resonance and conflict, some of them labelled “economic”. There is no Planet B, but uncounted interpretations of, handlings of and relationships towards Planet A. Economists can set out to reconstruct them, to provide public knowledge about these public economic institutions.

Being motivated to actually learn what is going on “out there”, this quest and the questions originating from it have to be posed openly. Instead of escaping reality from the outset or override it with the methodical equipment at hand, we can enter a serious and honest dialogue with the economic phenomena we are interested in. Ignorance is not a deficit, but a necessary component and a strong motivation of any scientific inquiry interested in worldly phenomena. Regaining a sense of reality starts with this humble confession.
It resumes by adopting methodologies suitable and open for the addressed phenomena to show itself. Not method or theory but an engagement with reality sets the starting point for scientific inquiry. It is not our convictions or traditions to whom real-world economic phenomena have to bend, but their specificity and diversity to which our methodical tools and choices have to learn bending. This will only be possible when there is a knowledge of the plurality of methods at our disposal (Farrell, Luzzati, and Hove 2013). Luckily, we can rely on the work of social scientists (among them some economists) having resisted perennial temptations and developed a wide scope of methods to approach real-world social (and therefore also economic) phenomena. Reconstructive and ethnographic methodologies (Flick, Kardorff, and Steinke 2004; Flick 2014) are the ones, where economists will have to catch up dramatically. Certainly, quantitative methods as developed throughout the 20th century will have to remain at our disposal. But they should never become an end in itself again: measuring and counting historically embedded economic phenomena shall remain one possible interpretation of them besides countless others. The knowledge about the boundaries and the neglected insights of this specific epistemic approach will hold crucial in the training of future economists. This is a strong argument against any sort of “model platonism” (Albert, 1963) and for the humble assertion that quantitative interpretations of real-world economic processes are but one possible road to be taken. In this vein, mixed methodologies may prove to be a promising compromise to maintain traditional strengths of the discipline, combining and thereby limiting them in their potential danger to run astray.
Gaining an imaginative sense: the imaginative turn

While a sense of reality had been cultivated in classical Political Economy until the marginalist revolution, a second sense has never entered the discipline’s center stage before. Still, what could be called an imaginative sense is more needed than ever in order to not just understand but gradually and fundamentally help transform economic realities. With it, economics could at least partially turn into a “science of possibilities” (Hochmann et al., 2019). At the core of this imaginative sense lies the simple fact, that social reality does not have to be as it is – that it could be otherwise. This is what we can learn from history. Social reality and “the economy” along with it, is being perceived as made and constantly altered by living people. As a fundamentally (re-)produced world by human actions, it can certainly be (re-)produced otherwise. There is not a hidden masterplan, law or necessity that runs the show, as methodological individualists and structuralists alike make us believe. There is one Planet A but uncountable possible interpretations and futures of it. This is the insight that could set off an imaginative turn in economics.

To illustrate this point on a discursive level, it just means that a term like “the economy” – like any other term – is arbitrary. It is empty to frame it negatively; it is open to frame it positively. The economy is not something, but it becomes something by the actions of living people attributing specific meanings to it. “The economy” is what we connect to it, what we refer to when we talk about it. The crucial question then becomes: What kind of practices and institutions do we mean when we talk about “the economy” and what other terms do we (want to) link to it? Questions on the institutional level arising from there are those of different practices, different social structures to be developed, invented and connected to respective signification processes (i.e. in discourse, images and so on).

The described emptiness of “the economy” is not a deficit of a segregated or even unscientific debate – it is just the display of the fundamental openness of economic relationships, practices, and institutions. Yes, the economy is an endless “discovery procedure” (Hayek, 1993, 67) – but this procedure also applies to what living people mean by the term “the economy”. Its predominant link to “The Market” or “competition” is not the end of the debate, but one possibility next to endless different possibilities to frame the economy – and to be most clear – to frame what we mean by the term “market”. The place, where this transformed understanding of new economies, where the imaginative sense, originates is the future (Beckert, 2016). Instead of surrendering to a “dictatorship of no alternatives” (Unger, 2015, 237), we can choose to engage in a democratic, scientifically informed debate about all sorts of economic futures. The tradition of economics itself (www.exploring-economics.org) but also public culture (Lash and Urry, 1994) referring to “the economy” has brought about a deep plurality of possible economic meanings. When working with these potentials constructively, it can lead to all sorts of economic practices and institutions – to all sorts of real-world economies. The contribution to and fostering of a public and scientifically informed debate about economic possibilities, their dangers and advantages, will be an important task for professional economists having revitalized this imaginative sense.

Of all possible scholars providing a starting point for this quest it is Adam Smith (in close resemblance with his friend Hume) from whom we can take at least the first steps to reimagine the economy (Matson and Doran, 2017; Ötsch and Graupe, 2020, 9 ff.). For he outlines a road, subsequently not taken, of human practice as well as scholarship concerned with these practices that centers around the human capability to imagine “otherness”; “otherness” of worldly phenomena and arrangements but also “otherness” of our fellow
human beings and, crucially, “otherness” of ourselves when reframed from a different angle. Combined with the capacity of sympathy, that allows us to assess social reality from different physical, emotional, intellectual and moral standpoints we gain a path of economic imagination rooted not in identity but in difference, preoccupied not with the actual but with the possible.

Around a quarter of a millennium on, this imaginative capability is ever more needed in a world suffering under the established social practices and institutions, ever reproducing the past within the present. The need for a fundamental transformation of our societies and, above all, our economies is self-evident in the light of interconnected economic, social, political and ecological crises. Addressing these crises by means of an imaginative sense demands of us to think in terms of their potential futures and the practices that most likely lead to democratically ruled desirable futures. Again, as with the sense of reality, the vitalization of the imagination will require methodical as well as didactical innovations in economics. The quantitative extrapolations of the past into an uncertain future in forecasting techniques should be extended by the wide range of qualitative, quantitative and mixed-methods techniques as developed, for instance, in future studies (Glenn and Gordon 2009; Saleh et al., 2008). With regard to the reform of educational contexts economics, to provide for a “futures literacy” (Miller, 2018) will be of central importance.

Learning how to combine both senses here and now: the transformative turn

As already illustrated, economics will only be able to regain meaningfulness when humbly, consciously and imaginatively relating itself to real-world issues. The synthesizing rather than a rigorous specialization of our renewed capabilities will prove to be important in this challenge. Neither should a sense of reality engage in endless data collection or description, nor should an imaginative sense loose itself in a postmodern *laissez-faire* of potential meanings. The challenge lies in the balanced interplay of both senses with reference to experienceable phenomena, that is, to real-world issues. “What is actually going on out there?” and “How could it be otherwise?” and “How could we possibly get there?” will be guiding flashlights in an economics with both explorative as well as transformative ambitions – an economics haven taken the *transformative turn*.

This synthetic capability requires both senses as outlined before and, above that, the ability to identify the respective bridgeheads connecting actuality with possibility. Where do transformative possibilities already exist in the present? Or where are the weak points of the present, possibly allowing for cracking them further towards an imagined future? Will we have to *perceive* and think about this specific economic setting anew or just allow for the already *silently done* to be scaled and institutionalized? There will not be any blueprint in answering these questions but rather an experiential, tentative progression. At least in these processes, future economists will closely work together with practitioners, policymakers and citizen scientists, learning from and with them, reshaping the discipline’s profile as not only inter- but also as a transdisciplinary science (Irwin, 2002; Moulaert, 2013; Backhaus et al., 2018; Waddock 2020).
It is especially in economic education where, besides enabling the dissemination of useful knowledge as well as its deconstruction or critique, we could set out this experiential task (Bäuerle, 2020). In the 21st century, economic education, especially higher education, can advance to the single most transformational hotspot. If we free ourselves from the endless reproduction of the ever same and senseless, it is these societal spaces and times where and when economic futures as related to actual fields of transformations can be developed. Yes, it will require a change of relationships both towards students as well as towards economic actors “out there” coping with and ever transforming reality in everyday life. But the presumed “loss” in hierarchical power of those formerly monopolizing knowledge will possibly return in public appreciation and a sense of meaningfulness or purpose when we transform ourselves into engaged economists. Let us use economic education to get out, enter into a reflexive dialogue with economic realities, discovering their potentials, searching jointly for future-fit ways forward.

Institutions matter (most)

Now, if we take this sketch of an “economics for the future” seriously, we have to think about the pathways to its realization. The discipline itself will have to undergo processes as outlined in the section above. As numerous cases in the history of economics have shown, potentially promising ideas alone will never do the trick. This is where the neoliberal thought collective has demonstrated remarkable anticipatory insight and strength. Future economists will have to step up to this institutional heritage in order to develop a full responsibility towards their intellectual work. Whether paradigm shifts as outlined here or elsewhere actually materialize will depend on the active engagement of scholars in the transformation of the production process of science as such. Besides developing alternatives what to do next, we have to practically realize alternatives how to do it (always keeping alive the why to do it).
In order to become reality, paradigm shifts need to be institutionalized. It is study programs, chairs, departments, associations, lasting bonds with extra-academic partners and a solidly funded network of caretakers that can bring about long-lasting institutional change. In this process, the economics student movement has taken the lead role in the last decade. It is the young generation, the generation of future economists that has chosen to organize the education it wants and to build the stages for the research it considers promising (ISIPE, 2014; Rethinking Economics, 2021; Netzwerk Plurale Ökonomik, 2021). And it is overwhelmingly them that have contributed to a public signification of the economics discipline – doubting its usefulness in its current shape and picturing a discipline in the service of people and the planet (Economists for Future International, 2019; Economists for Future DE, 2020). It is their (mostly unpaid) engagement and their strong will to actually cope both intellectually and practically with economies in dire need of transformation that should provide a strong basis for at least two groups of actors to highly engage in the institutionalization of alternatives.

The first group is an international community of critical scholars in economics (still) holding institutional power positions at their respective universities, public or private institutions or research labs. These spaces have to be used in order to widen and secure them. To this end, the concentration on common interests rather than on differences will be important. Intellectual homogenization is not a prerequisite for this effort. What suffices is a strong commitment to the first two senses outlined above: the least common denominator of a shared (economic) reality to be investigated and a never-ending dialogue about the possibilities of its alteration. To be most clear: today, too much potential is lost in scholarly vanities. This is a luxury we just cannot afford to continue any more.

This group needs to be joined by a second group of political and societal actors who partake in the funding of projects, institutions, initiatives and political guidelines. Together they need to engage in a democratic debate about the significance of academic economics for the wider public. For too long, in economics, the freedom of scientific endeavor as granted by national policies or even constitutions has been denied to scholars seeking new paths to understand the economy. The “intellectual monoculture” resulting from the overwhelming homogenization process in the discipline has contributed to the vulnerability of societies to handle (economic) crises or even prevent them from happening. Hence, it is in their best interest (or even their constitutional responsibility) to provide for a pluralist and transformative economics.

Certainly, the cooperation of both groups will be of paramount importance. Forums for dialogue between economists for the future and a public in search for future-fit solutions in economic matters are essential in this regard. Here, a democratic discourse about societal needs and possible economic and other scientific contributions to their solution can provide for a common ground so urgently needed in dangerously fractured societies of the 21st century. To go down this road in democratically representative ways, it will have to be an inclusive dialogue that integrates individuals and groups from all spectrums of the global society. Institutionally diversifying economics and public economic discourse is not a matter of postmodern fashion but of social justice and human respect (D-ECON, 2021). Besides addressing the questions of why, how and what economists should be thinking, talking and acting, the question of who actually forms the discipline and gets a chance to sit at present and future roundtables on future economies will have to be kept alive. The quest for pluralism does not stop with methods, theories and disciplines, but expands into the social production process of economic knowledge as such. As empirical assessments show, a lot remains to be done in this regard (Bayer and Rouse, 2016).
Conclusion

“Beyond indifference”: this is not a signpost proposing to replace indifference curves with behavioral experiments. It is an invitation to rearrange the relationships of economics and economists with society and nature. An economics of the future will not retreat into loges, commanding the workings on the frontstage with a presumed knowledge about a presumed backstage. It will not get trapped again in timeless conceptions, methodologies, and theorems. Rather, it will humbly and out of an open epistemic engagement with economic realities contribute to a public debate about how to interpret and transform economic practices and institutions. It will set out to understand the manifold differences and ambiguities that make up our economic lifeworld. It will not emit last words again, but always invite and provoke debate and alteration. The sentence “I don’t know” will not be a sign of weakness, but a commonplace of scientific honesty and a denominator of public reliability. For economics will have learned from its very own past that last words running astray may have grave impact. Crucially, it will place institutional safeguards that do not undermine but enable the discipline’s own, never-ending re-assessment and transformation, for instance, by anchoring the training of historical as well as philosophical capabilities at its study programmes’ core. In this vein, the self-critical reflection of its uncritical participation in a political project disguised in a discursive glow of unpoliticalness will mark the starting point.

Taking all these aspects together, economics ceases to resemble a paradigmatic, normal or textbook science in the Kuhnian sense. It will become an art of pluralist economic sensemaking in relation to lived reality providing for future-fit economies to emerge out of democratic debate and decision-making.

History has shown that economics can be a powerful science. Let us now subsume this potential under the quests to understand and care for Planet A.

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Growth through contraction: Conceiving an eco-economy
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Introducing the human predicament

We are cursed to live in interesting times. The human enterprise is in a precarious state of “ecological overshoot” propelled by excessive economic activity and growing populations. Eco-overshoot (hereafter, “EO”) exists when the human demand for renewable (self-producing) resources exceeds ecosystems’ regenerative capacities and waste discharges from people and their economies exceed ecosystems’ assimilative/recycling capacities. This is the archetypal definition of biophysical unsustainability.

“Overshoot Day” for 2021 occurs on 29 July. This is the date by which humanity’s collective bio-resource consumption and waste production\(^1\) will have “exhausted nature’s budget for the year” (GFN, 2021). From July 29 on, we will be maintaining ourselves and our cumulative manufactured capital assets, and growing “the economy” by further eroding remaining stocks of so-called natural capital (fish stocks, forests, arable soils, biodiversity, ground water, etc.) and over-filling nature’s failing waste sinks. Think “climate change”, society’s current environmental obsession: industrial society currently emits annually about 37 billion tonnes of carbon dioxide – the principal anthropogenic driver of climate change – of which about half is accumulating in the atmospheric (NOAA, 2021a). In 2021, carbon dioxide will average over 416 parts per million (ppm), up 48% from the preindustrial concentration of 280 ppm (and still growing at almost 3 ppm/yr) (NOAA, 2021b).

EO is a recent phenomenon. Anatomically modern \(H.\ sapiens\) have been around for over 300,000 years (Callaway, 2017) but took nearly the whole of that period to reach a population of just one billion in the early 19\(^{th}\) century. Then in only 200 years, < \(1/1500\)\(^{th}\) as much time, human numbers ballooned by a factor of seven and will top 7.9 billion in 2021 (Figure 1). At the same time, real gross world product increased >100-fold and per capita incomes (consumption) increased by a factor of 13 (25 in rich countries) (Roser, 2013). Of course, Earth didn’t get any larger.

We can extract two important lessons directly from the sudden, exponential expansion of the human enterprise. First, the entire phenomenon was made possible by fossil fuels. Gross world product and fossil energy consumption (along with carbon emissions) have increased in lock-step; a similar relationship holds within individual industrial nations with readily explicable variations (e.g., Chima and Freed, 2005). Obviously other products of the scientific revolution – e.g., improving public health – contributed to the boom, but fossil fuels (FFs) were essential. FFs power the global industrial machine; they were (and remain) the principal means by which humans acquired access to all the food and other material resources needed to expand the human enterprise at virtually full biological potential. In population ecology terms, rapidly evolving technology and abundant cheap energy eliminated many of the “negative feedbacks” (e.g., disease, food and other resource shortages, etc.) that historically held our populations in check. Human numbers and virtually all material flows associated with \(H.\ sapiens\)

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\(^1\) Particularly carbon dioxide, the greatest waste by weight of industrial economies.
responded with exponential exuberance in what some authors have termed the “great acceleration” (Steffen, Crutzen and McNeill, 2007).

Figure 1. The super-exponential expansion of the human enterprise enabled by the scientific revolution really took off with the extensive use of fossil fuels in the 19th century.


Second, of perhaps 15,000 generations of humans, only the most recent 10 or so have experienced sufficient population/economic growth (and technological change) in their lifetimes to notice. For 99.9% of human evolutionary history, human numbers everywhere fluctuated in the vicinity of local carrying capacities as the latter varied with shifting climate and other ecological variables (including bouts of plague which in the 14th century wiped out a third to half of the Eurasian population in just a few years). In short, while the present generation and other recent cohorts of *H. sapiens* take continuous growth to be the norm – most economists get nervous if growth falls much below a “healthy” 2-3%/year which means GDP doubles every 23 to 35 years – the past few decades of explosive growth comprise the single most anomalous period in human history.

Concern for EO *per se* has yet to penetrate economic and developmental policy circles; few politicians have even heard of it. Nevertheless, EO arguably constitutes a crisis of unprecedented proportions. EO is the meta-problem: issues like climate change; plunging biodiversity; tropical deforestation; acidifying oceans; expanding deserts; soil/landscape degradation; air, water and land pollution; resource scarcity and completion; etc., (even the CoViD-19 pandemic), while serious in themselves, are all are mere symptoms of this greater malaise.

Consider that the present relationship between modern techno-industrial (hereafter, “MTI”) society and the living ecosphere is analogous (almost homologous) to the relationship of a malignant parasite to its host. A parasite is an organism that lives on a host organism and
gains its own vitality at the expense of the vitality of its host. In ecologists’ jargon, humans are naturally “macro-consumers”, organisms that necessarily live by consuming other macroscopic organisms. However, when in EO, the maintenance and growth of the human enterprise is achieved in part, through the over-consumption of plant and animal biomass and the degradation of the ecosphere. Here is malignancy. Plants, non-human animals, and countless species of bacteria and fungi living in community, effectively constitute the living tissues of the ecosphere (some would say “Gaia”); the symptoms of EO – biodiversity loss, fisheries collapses, eroding soils, shrinking forests, pollution, etc., and the loss of associated life-support functions – are ample evidence of tissue destruction and failing eco-vitality. Like any other ill-adapted parasite, MTI culture is systematically – even enthusiastically – consuming the biophysical basis of its own existence. There is clearly something fundamentally dysfunctional about the world’s dominant socio-economic system.

The remainder of this chapter unfolds in two parts. The following section describes how humanity, that self-proclaimed most intelligent of species, got into this potentially terminal predicament. I argue that EO is not a technical problem amenable to technological fixes but rather a meta-problem with deep roots in both biology and culture. The final section outlines key elements of one form of bio-cultural adaptation. We must re-conceive the economy and society as cultural components of a regenerative human ecological niche, one that contributes to the functional integrity of supportive ecosystems. Is there any other way to rescue human civilization from itself and restore vitality to the ecosphere?

How we got here from there

“Tool-wielding monkeys push local shellfish to edge of extinction” (Woodward, 2017).

In one respect, humans came into EO honestly – population outbreaks are a common temporary phenomenon in among wild species “enjoying” unusually abundant resources. Indeed, human EO is the predictable outcome of contemporary cultural nurture combined with ancient human nature.

Some people, uncomfortable acknowledging their animal selves, may dispute the genetic component. However, the fact is that we humans are animals, large energy-demanding mammals to be precise. And, like all extant species, H. sapiens has evolved over time. Like it or not, we owe much to our evolutionary heritage and are still subject to the forces of natural selection. It should be no surprise, therefore, that we share various adaptive characteristics, including fundamental behavioral predispositions, with other living creatures.

H. sapiens: unsustainable by nature

Two such evolved predispositions are particularly relevant to EO. Unless or until constrained by negative feedback, populations of H. sapiens will tend to: 1) expand to occupy all accessible habitats and; 2) use all available resources. Excelling at these traits would obviously be adaptive and help ensure the survival of any species in the competitive struggle for existence. Indeed, this fact highlights one important factor that distinguishes humans from the rest of the pack: in the case of H. sapiens – and much to our competitive advantage – “accessible” and “available” are constantly being upgraded by technology.
There is no shortage of empirical evidence to support these assertions. Consider that with the possible exception of various rodents that ride our coattails, humans have expanded to occupy the most extensive geographic range of any vertebrate organism. Not only do we occupy all habitable land-masses and ecosystems on Earth, but we are capable of existing in some of the ostensibly least hospitable habitats on this planet and contemplate establishing colonies on such dead rocks as the moon and Mars. Does anyone imagine that if a new resource-rich continent were to be discovered that we would leave it in pristine condition in acknowledgement that we have messed up everywhere else?

On the resource-use side, many of the symptoms of EO from fisheries collapses to landscape degradation are the direct result of systematic over-exploitation facilitated by ever-improving fossil-powered technology. Factory-freezer trawlers scour the ocean floor destroying whole benthic and sea-bed ecosystems while 18-tonne 600 horse-power combines harvest food-grains from over-fertilized fields and behemoth earth-movers rearrange the face of the planet in scrounging for ever-diminishing deposits of essential mineral resources. *H. sapiens* may not be the only tool-using primate that tends to deplete essential resources (Luncz et al., 2017) but we are undeniably better at it than any other species. Fowler & Hobbs (2003) demonstrated that in terms of energy use (and carbon-dioxide emissions), biomass consumption, and several additional ecologically significant indicators, human demands on their supportive ecosystems dwarf those of similar species by ten to a hundredfold. Competitive superiority has clearly served our species well but the consequences for other species have been devastating (see Box 1).

**BOX 1**

*H. sapiens: champions of competitive displacement*

Humans comprise a mere 0.01 % of total Earthly biomass but the relentless expansion of human populations has eliminated 83% of wild animal and 50 % of natural plant biomass. From a fraction of one percent ten millennia ago, humans now constitute 36 %, and our domestic livestock another 60%, of an expanded mammalian biomass compared to <4 % for all wild species combined. Similarly, domestic poultry now comprise 70 % of Earth’s remaining avian biomass (data from Bar-On et al., 2018; see also Smil, 2011). Meanwhile, with rapidly developing technologies that plunge deeper and can “see” individual fish, commercial fishing deplete the oceans at the expense of rapidly declining marine mammals and birds. Seabirds are the most threatened bird group, with a 70 % community-level population decline between 1950 and 2010 (Gremillet et al., 2018). Overall, the World Wildlife Fund reports an “astonishing” 60 % decline in the populations of mammals, birds, fish, reptiles, and amphibians in just over 40 years (WWF, 2018). Arthropods (e.g., insects) and even gastropods (e.g., snails and clams) are also in precipitous decline (Hallmann et al., 2017, Neubauer et al., 2021).

These data show that *H. sapiens* has become, directly or indirectly, the dominant macro-consumer in all major terrestrial and accessible marine ecosystems on the planet and certainly the major polluter. Meanwhile international organizations and mainstream economists posit from ecologically empty monetary analysis and mineral flows that the economy is “dematerializing” or “decoupling” from nature (e.g., UNEP 2011, Scheel et al., 2020). The fact is that our species is actually the most voraciously successful predatory and herbivorous vertebrate ever to walk the Earth. The resultant human “competitive displacement” of non-human organisms from their habitats and food sources is now the greatest contributing factor to plunging biodiversity (Pimm and Raven, 2000; Smil, 2011, 2013).
The social construction of “reality”

Innate behaviors are by no means the only factor responsible for EO; maladaptive cultural norms play at least an equivalent role. But there’s an interesting twist – we humans uniquely “socially construct” our lived realities. More accurately, humans socially construct conceptual frameworks through which we interpret reality. Everything from simple ideas to whole cognitive frameworks (tribal myths, religious doctrines, economic models, political ideologies, academic paradigms, cultural narratives, scientific theories) are products of the human mind, birthed in language – including mathematics – massaged through social discourse, and finally accepted as truth or “received wisdom” by agreement among members of the social group who have created the construct.²

There are several important corollaries: first, the conceptual frames through which we perceive reality determine the quality and characteristics of the reality we perceive; second, we are compelled to live “out of” our constructed realities as if they were real; third, if people do not understand this process – and most do not – then they will live out their lives taking their experience of reality to be the only possible right and true reality. They will be utterly unaware that many of their most important behaviors and choices are determined, largely unconsciously, by myths, models and narratives that our culture has essentially made up. The problem is that many of these constructs are little more than shared illusions, i.e., gross errors about, rather than insights into, the nature of reality.

When social constructs are fundamentally flawed

“We cannot regulate our interaction with any aspect of reality that our model of reality does not include” (Beer, 1981).

Any construct pertaining to the natural world (e.g., an economic or resource management model) is more likely to succeed the closer it “maps” to any facet of biophysical reality it purports to represent. This principle has been formally stated as “Ashby’s Law of Requisite Variety” (Ashby, 1957, 1958) often called “The First law of Cybernetics.” In simple terms, the “variety” (i.e., internal complexity, number of possible states) of a control system must be at least as great as the variety of the system it is designed to control. More generally, a system has requisite variety only if its number of adaptive responses is a least equivalent to the number of challenging conditions it may encounter in its environment.

In the present context, the converse statement may be more relevant: Ashby recognized that if the variety/complexity of a particular environment exceeds the capacity of its regulatory system the environment will dominate and ultimately destroy that system. Consider that MTI culture – increasingly the entire global community – is in thrall of a (socially constructed) neoliberal economic paradigm based on an exceedingly bad map of reality. EO is perhaps the major negative consequence, one certainly capable of destroying the human system.

At its core, the modern world’s entrenched economic narrative is simplistically mechanistic and reductionist. This was intentional. The work of neo-classical economists reflected “the late 19th Century faith in progress and the benevolence of its consequences” (Barber 1967, p.

² There is another layer of nature-nurture here. The content of our social constructs is culturally determined but social construction itself is an innate species-specific idiosyncrasy.
164). The founders of neoclassical economics, impressed with the successes of the physical sciences (particularly Newtonian analytic mechanics) sought to create an analogue in economic theory. Stanley Jevons, one of those founders, characterized his theory of political economy not as “a branch of the science of a statesman or legislator, [but as] the mechanics of utility and self-interest [Jevons’s emphasis]” (Schrader, 2015, p. 135).

Neoclassical writers assumed that individual actors have rationally defensible preferences and that they seek to maximize benefits to themselves (utility) in market exchanges. They asked how markets might best function as an effective mechanism for social organization. This narrowed neoclassicists’ analytic focus from larger questions (e.g., economic justice, distributional equity) to understanding how market mechanics influenced the choices and behaviors of major economic actors, from individuals to industries. In this context, they elevated the theory of prices pertaining to both inputs and outputs as essential to understanding how market forces might optimize the allocation of society’s resources to the most socially beneficial uses. In this way, “micro-economics — i.e., the study of the [efficient] behavior of households firms and industries — was brought to the centre of the stage” (Barber 1967, p. 165). These concepts remain central to MTI society’s understanding of human economic behavior and related aspects of reality.

Indeed, neoclassical framing embodied several implicit and explicit assumptions of particular relevance to contemporary EO. For example:

1. the economy is separate from and can essentially function independently of the biophysical “environment”;
2. analytic models are mostly linear, deterministic, and single equilibrium-oriented;
3. important relationships exhibit smooth change and reversibility;
4. factors of production (finance capital, natural capital, manufactured capital, human capital) are near-perfect substitutes. I.e., human ingenuity — technology — can make up for any potentially limiting natural resource;³
5. damage to ecosystems or human communities (i.e., intangible factors not reflected in market prices) become mere “externalities;”
6. ethical and moral considerations that cannot be resolved in the marketplace are political considerations irrelevant to economic analysis.

It is a small step from acceptance of these assumptions to conviction that economic growth can continue indefinitely, unimpeded by “the environment” and propelled by boundless technological progress. By the mid-20ᵗʰ century, growth and accumulation — the material essence of modern capitalism — had become a major preoccupation of governments and the perceived solution to society’s ills, especially persistent poverty. Rather than tame humanity’s ancient survival instincts, seeing the world through the conceptual frame of neoclassical economics served to reinforce natural propensities to expand.

And it didn’t end there. To this basic framework, the rise of neoliberal thinking in the post WW-II period added support for globalization, free trade, lower taxes, deregulation and minimalist government generally. This served to super-charge the growth model and capital’s grip on the

³ This assumption is particularly relevant. As Nobel Laureate Robert Solow has observed: “If it is very easy to substitute other factors for natural resources, then... The world can, in effect, get along without natural resources...” (Solow, 1974, 11). It follows that “Exhaustible resources do not pose a fundamental problem” (Dasgupta and Heal, 1979, 205).
economic process. Globalization ensured corporations’ low-cost access to the world’s remaining pockets of resources and to its cheapest sources of labor. Profits rose. Competition, reduced taxes and friendly regulatory regimes further increased profits and salaries/wages, even as they helped lower prices. With more and more money chasing ever-cheaper goods and services, and a buying public spurred on by a burgeoning advertising sector, the human enterprise experienced an unprecedented seven decades of rapid material growth, albeit punctuated periodically by minor recessions and other setbacks. The United States’ single longest economic expansion in history – 126 months – was broken only by the onset of the CoViD-19 pandemic in early 2020.

But there remains a fundamental problem. Neoliberal economic models are crude abstractions that omit crucial aspects of reality. Far from exhibiting “requisite variety”, the world’s dominant economic paradigm contains no useful information about the structure or function of the biophysical systems – or even the social systems – with which the economy interacts in the real world. It defies logic that MTI societies have come to rely so much on the surreal simplicity of market mechanics to “regulate our interaction” with an ecosphere of truly unfathomable complexity. EO is evidence that the complexity of the ecosphere and society vastly exceeds the capacity of our political/economic regulatory system to assert control. Wealth accumulates and the ecosphere is in disarray yet poverty persists and income gaps are widening. The world is beginning to acknowledge that continuous growth is delusional (e.g., Dhara and Singh, 2021). The remaining question is whether the human enterprise can adapt before “the environment” assumes dominance and destroys it.

Now what? Getting real about ecological overshoot

EO exists when total energy and material flows through the economy exceed the productive and assimilative capacities of the ecosphere. The only way global society can address EO and regain effective “control” is through absolute reductions in energy and material throughput. Since total throughput is the sum of individual consumer demands, EO implies that Earth cannot sustain even current average per capita consumption. Thus EO is not merely a technical issue; it is a bio-cultural phenomenon that must be addressed through significantly dematerialized lifestyles combined with greater equity and significantly reduced populations. How significant? By one conservative estimate, the human ecological footprint (EF), the area of bioproductive land and water ecosystems required to support the human enterprise sustainably, is about 20.9 billion ha compared to total available biocapacity of 12.1 billion ha (GFN, 2021b) – we have overshot global carrying capacity by ~73% (the difference is made up through natural capital depletion and gross pollution). In short, achieving sustainability would require reducing human demands on the ecosphere by at least 42%.

Any planned contraction would not be “across the board.” For sustainability with justice, moral and ethical considerations demand that wealthy consumers, those mainly responsible for EO, bear the brunt of material cutbacks. As early as 1993, analysts recognized that “Industrialised world reductions in material throughput, energy use, and environmental degradation of over 90% will be required by 2040 to meet the needs of a growing world population fairly within the planet’s ecological means” (BCSD, 1993, p. 10, italics added).

4 EF estimates are actually conservative for several reasons. In particular, while the method can estimate the area of ecosystems “appropriated” by humans (the human EF) and compare this with available productive land and water area (biocapacity), it cannot account for of erosion, other forms of depletion or lost productivity through pollution.
Some will object that such seemingly extreme intentional “adjustments” to consumer lifestyles are simply not in the cards. Perhaps so, but we may have no choice. First, (over)expansion by the human enterprise was catalyzed by the unprecedented abundance of food and other resources made possible by fossil fuels (FF). Continued resource abundance will be necessary to maintain growth or even current average consumption levels. This may not be possible because of increasing mineral resource scarcity (Clugston, 2012; Michaux, 2021), land degradation, failing water supplies (NASA, 2015; UNDRR, 2021); growing energy uncertainty and the sheer scale of ongoing ecosystems destruction (Bradshaw et al., 2021).

Second, the IPCCs’ demonstration that we need virtually 100% decarbonization by 2050 to avoid greater than 1.5°C mean global warming and the possibility of catastrophic climate change, has spurred the global community to attempt a transition from fossil fuels to so-called green renewable energy sources (RE). Many sources claim that such transition is not only technically feasible but can be achieved with a minimum of disruption while stimulating investment and high-quality employment in virtually every jurisdiction (e.g., Jacobson et al., 2018; Ram et al., 2018). Citizens are being urged to believe that “…every region on Earth can replace fossil fuels with renewable energy to keep warming below 1.5°C and provide reliable energy access to all” (FFES, 2021). However, despite promotional hype about wind turbines and solar PV (where most RE investment is going), and now hydrogen, and despite significant progress in electricity generation in some favored locations, there are myriad theoretical and practical reasons why modern REs cannot quantitatively substitute for fossil fuels (e.g., Berman, 2021; Jensen et al., 2021; Alexander and Floyd, 2018; Clack et al., 2017; Bossel, 2006). Several extended life-cycle studies suggest that the energy returned on energy invested (EROEI) in wind and solar is insufficient to power modern society (e.g., de Castro and Capellán-Pérez, 2020). Worse, Ferroni and Hopkirk (2016, 2017) demonstrate that in mid-latitudes, solar PV is actually a net energy sink – its manufacture, installation and maintenance consume more energy than the system produces. In a commentary on the now considerable series of dubious technological “fairy tales” for reaching net zero carbon emissions by 2050, three climate scientists agree with the present analysis that “The only way to keep humanity safe is the immediate and sustained radical cuts to greenhouse gas emissions in a socially just way” (Dyke et al., 2021).

All of which means that the RE-will-save-us strategy is a dead end. Absent a more comprehensive “exit plan,” humanity will soon confront a chaotic combination of significantly

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5 Note that such analyses and solutions are entirely self-referencing. Acceptable solutions to eco-crisis (wind and solar generation, electric vehicles, hydrogen technologies, as yet unproved carbon capture and storage technologies, etc.) involve massive capital investment, job creation and other economic stimuli, i.e., anything that will ensure business-as-usual-by-alternative-means. As Spash (2016) has argued, the problem becomes the solution!

6 Many analysts ignore the sheer scale of the required transition. The IPCC emissions reduction schedule requires reductions of ~7% year assuming we began in 2021. In the absence of carbon capture and storage, this would mean substituting for 7% of fossil fuel use. Consider that in 2019 fossil fuels contributed 492.34 EJ (136,761.11 Twh) to global primary energy production (84%). Seven percent of this is 34.46 EJ or 9573.3 Twh. If we assume a conversion ratio of 2.47:1 for wind and solar (W&S) energy (i.e., 1 unit of wind/solar energy = 2.47 units of fossil energy when converted to electricity), we would need 3875.8 Twh of new W&S electricity in just the first year. However, the total amount of W&S electricity generated in 2019 was 2153.7 Twh (equivalent to <4% of supply). In short, to meet the IPCC Paris target (~7% emissions per year) we need to build 1.80 (3875.8/2153.7) times the entire multi-decade cumulative global stock of wind and solar installations in the first year alone. Repeat the process in subsequent years. This is impossible. In any event, building out RE infrastructure at this pace would itself blow emissions limits; and even if it could be done (coupled with 100% carbon capture) the world would still have an overshoot crisis (Energy data from BP Statistical Review of World Energy 2020).
reduced energy supplies, economic contraction, food and other resource shortages, increasing civil unrest, and geopolitical conflict, i.e., the collapse of civilized order. Of course, should MTI society decide simply to “party on” while economic fossil energy supplies last – which seems increasingly to be the default position of governments – we will face more disastrous climate impacts and economic contraction accompanied by widespread famine, mass migration, domestic turmoil, international chaos and systems collapse. Either way, it is past time for the world community to acknowledge and authentically internalize reality – plan for a cooperative, dignified contraction of our eco-footprint or face the prospect that the ecosphere unleashed will indeed come to “dominate and destroy” the human system.

What goes up will come down

If this seems over-the-top consider that, as matters stand, the ballooning human enterprise resembles the boom or “plague” phase of a one-off population boom-bust cycle (Rees 2020). Boom-bust cycles are common in nature during periods of unusual resource abundance – think fossil fuel – or when some species population is introduced to a new, resource-rich but previously unexploited habitat (see Scheffer, 1951 for a classic example). Booms invariably generate busts.

Figure 2 illustrates the dilemma and shows what must occur for civilization to have a reasonable chance of surviving more or less intact. The solid red curve traces humanity’s present overshoot trajectory – note the similarity of the first half of this curve to the plot of real-world population growth in Figure 1. Sometime in the mid- to late 20th century, the human eco-footprint blew past Earth’s long-term human carrying capacity (CC) (the dotted horizontal black line). Beyond this point, the depletion of renewable natural capital has resulted in an accelerating erosion of future carrying capacity (dotted red line).

Figure 2. Global humanity’s one-off boom-bust cycle

A more sophisticated species, aware of its dependence on ecosystems and tuned to changing ecological conditions might have socially-engineered a sigmoid slowing of exponential growth. Its eco-footprint would have converged asymptotically toward, and fluctuated moderately thereafter, in the vicinity of mean global CC (solid green line). This is
the essence of one-planet living – the balancing of population and material well-being within the regenerative and assimilative capacities of Nature (Moore and Rees, 2013).

This option is no longer fully available. The best we can do to avoid full systems collapse – the common fate of many earlier complex societies (Tainter, 1988) – is to manage the contraction of the human enterprise so that it detours on the way down to run more or less parallel to the dotted red line. The subsequent scale of the population and economy will be considerably less than the optimal “one planet living” (green) curve because of greatly depleted natural capital. EO causes a loss of CC that will take decades to recover.

**Framing adaptation: the biophysical dimensions**

Since the growth-based neoliberal capitalist economy is failing in biophysical terms, a first step toward a viable alternative must be to revisit the ecologically-relevant assumptions of the prevailing paradigm.

First, we must abandon thoughts of human exceptionalism. Far from being independent of nature, all human societies and economies are open, fully contained dependent subsystems of the materially-closed ecosphere (Daly, 1999; 1991). Like other species, humans are subject to the laws of physics, chemistry and biology, the most important of which are the first and second laws of thermodynamics and the law of conservation of mass.

The second law – the entropy law – recognizes that all real processes, including all economic processes, are “dissipative”, i.e., production and consumption permanently (irreversibly) dissipate all of the energy and a significant proportion of the material involved. Moreover, the laws of energy conservation (first law of thermodynamics) and mass conservation together dictate that 100% of the energy and material assimilated by the economy – including once useful products – eventually return to the “environment” as useless degraded waste (pollution). There are no exemptions. Both the ecosphere and the human subsystem are self-producing dissipative structures. However, while the ecosphere “feeds” on high-grade solar energy through photosynthesis and ejects low grade waste heat into space, the economy both feeds on the ecosphere and treats it as a waste dump (hence our parasite analogy).

Beyond a certain scale, the economy can only increase the entropic disordering of the ecosphere. The more important flows in the economy, therefore, are not economists’ circular flows of abstract money value but rather the irreversible one-way flows of energy and matter (Figure 3).

Second, societies, their economies and particularly the ecosystems within which they are embedded are complex adaptive systems. This means that their behavior under stress is often non-linear, characterized by lags, thresholds and other discontinuities; it may be chaotically unpredictable if pressed beyond certain thresholds. Such “catastrophic behavior” by the host ecosphere might well be fatal to human society. Biophysical systems have multiple equilibrium states which are unknowable before the fact. If pressed beyond some heretofore invisible “tipping point” – a major concern of climate scientists and systems ecologists – the earth system may collapse irreversibly into a new stable state hostile to

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7 Nicholas Georgescu-Roegan (1971) and later his student, Herman Daly (1991), were the first to argue the relevance of thermodynamic laws to economics but have been ignored by mainstream analysts.

8 This seems to invalidate recycling and, in part, it does. Energy cannot be recycled; material recycling always falls short of 100% and requires the use/dissipation of additional energy and materials.
civilization (Steffen et al., 2018). Obviously, any economic sub-system must conform to the operational dynamics of the ecosphere if it is to survive. The operational dynamics of the ecosphere exemplify a dynamic steady-state (Daly, 1991).

Figure 3. The potentially parasitic economy

Third, there are limits to factor substitution. Herman Daly has championed the fact that manufactured capital and natural capital are generally complements not substitutes – more fish boats or fishers do not compensate for the collapse of the fish stock (e.g., Daly, 1991, Ch.13; Daly, 1994). Indeed, some form of natural capital is a prerequisite for all forms of manufactured capital. Moreover, because self-producing “natural capital” maintains the life-support functions of the ecosphere, the risks associated with its depletion are unacceptable, and there may be no possibility for technological substitution “conserving what there is could be a sound risk-averse strategy” (Pearce et al., 1990, p. 7, emphasis added).

Fourth, it is implicit from the above that the notion of “externalities” – ecological and social costs of production not reflected in market prices – is a pernicious holdover from linear, reductionist thinking. There is no separate “environment” and no true “externalities.” Faulty accounting has helped propel humanity into EO; the climate and many ecosystems are approaching tipping points unremarked by economic analyses. If we could now impose a full social-cost accounting framework, we would no doubt find that the heretofore externalized costs of growth at the margin already exceed the marginal economic benefits, i.e., we have exceeded optimal economic scale. It seems that eco-overshoot also entails economic or civilizational overshoot.
As long as this is true, further growth is uneconomic growth that makes humanity poorer rather than richer (Daly, 1999). Thus, if intelligence and logic are to be major determinants of future economic policy, a primary objective should be to manage the economy with “steady-state” material throughput in the vicinity of optimal scale. Note that if so-called externalities could suddenly be included in market prices, many frivolous and even perceived “essential” items would be beyond the reach of perhaps a majority of consumers. Consumption – or at least material throughput – would plummet; producers and consumers would have to adapt to biophysical reality (to the ultimate benefit of people, communities and the ecosphere).

The economy as adaptive (eco)niche

Ecologists who study the material and social relationships of non-human species say they are mapping those species’ ecological niches. An organism’s “niche” describes its food, habitat and related resource demands and the role that the species plays in maintaining the function and structure of its ecosystem. Well-adapted niches are non-disruptive; they define the relevant species “economic” relationships within, while contributing to the structural integrity of, relevant ecosystems.

MTI cultures understand the economy to comprise that set of activities central to the production, allocation, distribution and consumption of goods and services. Certainly material flows and relationships are a good starting point to define the human ecological niche – such relationships exist in all societies – but we should keep in mind that indigenous cultures have no concept of a separate entity called "the economy."

Indeed, problems begin when people formalize the economy in ways that abstract it from community and ecosystems and give it an identity of its own. Contemporary capital-serving neoliberal economies have gone rogue; they are now the independent variable in the equation of human societies everywhere. Ordinary people and their supportive ecosystems are now dependent variables expected to bend to every efficiency-based demand of the economy that might be required for continuous growth, growth that mostly serves the already wealthy as inequality increases. Eco-social crisis is inevitable. If humans are to reintegrate with nature and themselves in community, mere reform is not enough. We need to reconstruct the global and local economies, literally from the ground up, as adaptive eco-niches.

The once and future economy

The aggregate symptoms of EO leave little doubt that the continuity of civilization requires that the world community socially construct a new way of being on Earth that transcends MTI sensibilities. We need a personal-to-civilizational metamorphosis from contemporary growth-obsessed juvenility to adult maturity. We must create a world in which people can enjoy emotionally satisfying, materially sufficient lives in community without wrecking the planet.

The most adaptive form of this new civilization might be a network of cooperation-based eco-regional economies supporting many fewer people thriving more equitably within the regenerative capacity of their local ecosystems. The more spiritual among us might argue that a true eco-economy can emerge only through an ascension of consciousness whereby people recognize and honor the inextricable interconnectivity of all forms of life. Others will agree that confronting EO demands at least a conscious transformational paradigm shift, i.e.,
the abandonment of the foundational beliefs, values and assumptions of neoliberal capitalism and their replacement with a framework that better reflects biophysical reality. Either option may seem impossibly daunting, but if humanity does not attempt a preemptive correction to EO, an overstressed ecosphere will impose its own solution.

To begin the process, the world community would have to agree that each national government:

- Accept the conceptual limitations of neoliberal economic thinking outlined above;
- Formally recognize the end of material growth and the need to reduce the human ecological footprint;
- Acknowledge that while humanity remains in eco-overshoot, sustainable production/consumption means absolutely less production/consumption;
- Concede the theoretical and practical difficulties/impossibility of an all-green quantitatively equivalent energy transition;
- Recognize that equitable sustainability requires an economic leveling; i.e., fiscal and other regulatory mechanisms to ensure income/wealth/opportunity redistribution between and within countries – greater equality is better for everyone (Wilkinson and Pickett, 2009);
- Participate in a global population strategy to enable a managed, non-terrifying descent to the one to two billion that could live comfortably indefinitely within the biophysical means of nature.

Clearly, for the transition to succeed, the denizens of MTI cultures must consciously abandon and evolve beyond the core paradigms which define their present way of being in the world. We can hardly fully define a whole new culture in this space but can suggest some pertinent characteristics: Contemporary worship of material-growth-through-efficiency must give way to other values that have been sacrificed to market capitalism. The cult of individualism must concede to the need for cooperative collective solutions. A sense of unity with – or at least respect for – nature, recognition of material limits, loyalty to place, greater social equality, community cohesion, regional self-reliance and local economic diversity are all prerequisites for, long-term economic security, social well-being and ecological stability. Above all, the new human eco-niche must be regenerative, i.e., the emerging “consciousness” must ensure that the economy is re-embedded in community and that this (re)union develops as a fully integrated mutualistic component of its sustaining ecosystems. (In many respects, this vision represents a reversal of Karl Polanyi’s Great Transformation, capitalism’s severing of the economy from local community and governance structures in the name of growth, efficiency and profit maximization.)

Dubious of the benefits of relocalization? There is also a push factor. Globalization and unfettered trade – i.e., dependence on distant “elsewheres” for food and many other resources – will no longer be possible in the emerging energy-constrained world.9 Hence, adaptive eco-economies must be more eco-centric local economies. Agriculture and essential light manufacturing – e.g., food processing, textiles, clothing, furniture, tools – will all be relocalized providing ample meaningful employment. There will be a resurgence of personal skills and pride in workmanship. As an immediate additional benefit, when citizens become acutely aware of their dependence on local ecosystems they become more actively

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9 This is a good thing. Globalization is a driver of overshoot – globalized “free” trade in the late 20th century greatly accelerated resource (over)exploitation and pollution and facilitated population growth.
concerned about the state of those systems. A sense of conscious participation in one’s eco-
niche is not possible if the relevant ecosystems are half a planet away.

Implications of eco-economics for settlement and spatial planning

Most people are unaware that the “ecological footprints” of modern cities – the ecologically
productive land and water area required to support urbanites’ contemporary lifestyles – are
typically several hundred times larger than the cities’ physical or political areas (Rees, 2012).
The products of these distant hinterlands are conveyed to cities by fossil-powered ships,
planes and trucks. In the US, for example, more than 80% of towns and cities are provisioned
only by trucks; heavy duty diesel-powered Class 8 trucks haul 70% of the nation’s freight.
Even if 100% electrification were possible, the extreme demands of heavy-duty haulage
ensure that “all-electric or hydrogen fuel cells for propulsion is not an option” (USDE, 2011;
Friedemann, 2016).

In the absence of abundant cheap energy, it will not be possible to provision large cities and
megacities. Many urban populations will have to be dispersed and redistributed. Consistent
with the relocation imperative, the following policies/objectives would reconfigure present
settlement patterns into more functionally self-contained human econo-ecosystems. Senior
governments should cooperate with regional and local officials to, for example:10

- Create national sub-systems of self-reliant bioregions or eco-regions centered on
  existing smaller cities with boundaries based on ecologically meaningful land-forms
  and biophysical features (e.g., watersheds, heights of land);
- Size each urban-centred eco-region initially to contain, where possible, a productive
  ecosystem area equivalent to its population’s currently globally dispersed supportive
  hinterland; i.e., internalize their de facto “eco-footprints.” (There will be insufficient
  domestic land/water in many countries forcing recognition of the need for much lower
  levels of material consumption and a gradual reduction in population.);
- Re-localize government services and decision-making authority, i.e., devolve
  sufficient governance and taxation powers to the new urban eco-regions to enable
  effective management of their internal resource- and ecosystems;
- Organize the regional economy and commerce to sustain the population as much as
  possible on domestic bio-resources and ecosystems, thus reducing reliance on trade.
  There will still be some trade but:
- Imports should be restricted to true necessities that cannot be produced locally;
  exports should be limited to bio-resources in true eco-surplus, i.e., harvest rates must
  be less than regeneration rates to prevent natural capital depletion;
- Facilitate the organization of producer and consumer co-ops – every working person
  should have a genuine stake in the eco-economy. The ratio of highest paid
  management to average worker wages should be no greater than 5:1 (the average for
  Spain’s well-known Mondragon cooperatives);

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10 No one really knows how to create the conditions which nurture and support the shifts we need.
Cultural evolution means that the many components of society must evolve in parallel lines but not
necessarily at the same pace. Nor should the process be identical from place to place; there is no
grand set template. Fortunately, the network of eco-regions proposed here provides ample opportunity
for small-scale planning experiments – learning exercises – so that the successes/failures of differing
initiatives can be widely shared as the overall initiative is gradually scaled up.
- Reintegrate animal husbandry with food-cropping in keeping with sound soils management and to reduce the need for artificial fertilizer with its associated ground- and surface-water pollution;
- Re-design urban waste management to convert settlements from resource-depleting throughput systems into self-sustaining circular-flow ecosystems. E.g., collect, treat and recycle animal and domestic nutrient-containing wastes onto the eco-region’s farm-and forest lands whence it came. (Circularity in nutrient flows is structurally and functionally necessary for any ecosystem’s continuity.);
- Invest in natural capital restoration; regenerate depleted soils, degraded landscapes, wooded areas and other wildlife habitats to promote biodiversity, enhance regional productivity, increase carbon sink capacity and mitigate climate change. (Human overuse has already dissipated half the world’s topsoil but soil still contains several times as much carbon as the atmosphere.);
- Recognize that governance of regional ecosystems and landscapes for the common good will sometimes require stinting customary private property rights. Importantly, citizens who realize that their security depends on maintaining the integrity of local ecosystems have an incentive to support such measures.

Clearly, it would have been advantageous to have begun such a process 50 years ago.

**Truly renewable energy**

It should by now be obvious that the post-carbon economy must adapt in myriad ways to greatly reduced energy supplies. (In 2019, fossil fuels accounted for 84% of the world’s primary energy [BP 2020].) Any remaining fossil fuel budget must be dedicated to essential uses such as food production; less important and frivolous FF technologies should be banned (leaf blowers, recreational ATVs, jet-skis, motorized pleasure craft, private automobiles – including EVs – non-essential air travel, and most military uses come to mind). The eco-economy will be powered by truly renewable benign energy sources such as biomass (especially wood), simple mechanical wind and water power, passive solar, and animal and human labor.

On this last point, citizens of the MTI world forget that industrial energy now does the work that people and animals use to perform. North Americans each have the energy equivalent of hundreds of human slaves in continuous employment to provide them with the goods and services they have come to take for granted. If we ignore nuclear- and hydro-electricity, “99.5% of ‘labor’ in human economies is done by oil, coal and natural gas” (Hagens and White, 2017). On the draft animal side, the population of working horses and mules in the US peaked at 26 million in about 1915 – when the human population was about 100 million – only to be gradually replaced by fossil-powered farm and industrial equipment (Kilby, 2007). The post-carbon US economy may once again need this many work-horses (and about 50 million acres of dedicated fodder-producing land) even if the population shrinks back from 331 to 100 million. By comparison there are only five to 10 million horses in the U.S. today, of which just 15% are working farm or ranch animals (Kilby, 2007). Again, rebuilding the herd should have begun decades ago.

However things unfold, a drop of 50% or more in energy availability need not be catastrophic - there are even several silver linings. Sixty percent of the energy flow through the modern
The paper proposes radical changes to society and the economy… will be adopted in time [to avoid catastrophe]” (Dilworth, 2010).

“Leaked UN draft report warns of accelerating climate devastation – species extinction, more widespread disease, unliveable heat, ecosystem collapse, cities menaced by rising seas” (Aljazeera, 2021).

The adaptations to EO proposed in the paper run 180 degrees from the capital-intensive growth-oriented “solutions” supported by governments, corporations and international organizations anxious for the economy to come “roaring back” from the CoViD-19 pandemic. As argued above, the mainstream model generating these cancerous solutions is fatally flawed – it is narrowly focused on climate change (a solitary symptom of EO), ignorant of energy realities and emerges from an economic vision that is devoid of biophysical insight. It neither acknowledges EO nor modern humanity’s quasi-parasitic relationship with an increasingly turbulent ecosphere. In short, our prevailing econo-governance framework fails the test of requisite variety and puts global society in ecological peril.

By contrast, the present analysis acknowledges EO and advances adaptive approaches to human ecological dysfunction that are wholly consistent with biophysical evidence and trends. The downsizing and re-localization of economic activities and their reintegration with communities and supportive ecosystems disaggregates the human enterprise into manageable spatial and eco-economic units more consistent with Ashby’s law; these proposals reflect values that other researchers increasingly accept as essential for the survival of civilization (e.g., Wiedmann et al., 2020); they are also consistent with the view that the required transformation cuts much deeper that those assumed even by the emergent degrowth movement (Trainer, 2021). Assuming that our best science is valid, which approach has the higher probability of success: staying our growth-obsessed trajectory or diverting to an eco-sensitive, socially just downsizing?

Evidence-based logic points to the latter but there is scant evidence that the world community or any individual nation is preparing voluntarily to embark on a deliberate long descent. Rather than taking falling birthrates as a hopeful trend, most governments lament their
supposed negative implications for pension schemes, national competitiveness and economic growth. Even today’s narrow focus on reversing climate change is doomed to fail. National governments, spurred on by their corporate sponsors have placed their bets on faulty or non-existent capital-intensive technologies to reduce carbon emissions. Meanwhile, they avoid taking the really hard decisions needed to wean society from fossil fuels while pumping hundreds of billions annually into direct and indirect FF subsidies. True to humanity’s innate tendency for temporal discounting, it seems that the world community’s default position is to stick with fossil fuels. Governments and monied elites would much rather tempt the uncertain risk of potentially catastrophic climate change some time in the future than the certain risk of social upheaval, economic disruption and threats to their privileged status that would accompany rapid (unplanned) contraction today. Most ordinary people – for now – seem content to go along for the ride.

But the tide may be turning. The seemingly impossible socioeconomic reset proposed in this paper may yet be within reach. Increasing numbers of thoughtful citizens, activist organizations, and NGOs are taking to the streets. They recognize that the most effective stimulus for rapid social progress has always been popular resistance—peaceful protests, civil disobedience and even revolution—often in that order. As the human eco-predicament worsens, there is (shrinking) room for hope that along this spectrum there will yet be a popular awakening, one sufficient to catalyze the greater transformation needed to conserve prospects for global civilization while there is yet time.

Acknowledgements

I am grateful to Alison Aloisio, Megan Seibert and Ruben Nelson for insightful comments on an earlier draft of this paper.

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SUGGESTED CITATION:

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Interrogating the holy grail of productivity growth
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One thing that most economists seem to agree on, regardless of their ideological persuasion or varying theoretical frameworks, is the importance of productivity increases. This “holy grail” is embraced by mainstream economists, heterodox, pluralist and dissident economists, policy makers and the general public as an obviously desirable goal that all economies must strive for. Yet of all the economic concepts widely in use, that of aggregate productivity in an economy may be the most problematic and full of conceptual and measurement holes.

This article is a critique of both the concept of productivity – especially labour productivity – as generally used in economic analysis, as well as the attempts to measure it to compare across countries and within a single country over time. It is essentially exploratory in nature: I will raise more questions than I can answer, and offer more criticism than solutions. Yet I hope to indicate that the widespread use of this concept is analytically and empirically flawed, and that a post-neoliberal economics that captures the true spirit of political economy must move beyond that to better, more relevant and “true” measures of human progress, even when progress is measured only in material terms.

At one level, the privileging of productivity appears to be so obvious that it requires no further elaboration. After all, productivity simply represents the amount of output per unit of input, and obviously it would be more “efficient”, less costly, and therefore presumably more desirable, to produce more output with the same or less inputs. But the first problem emerges immediately, in the very choice of variables. GDP, or national value added measured through national accounts data, is usually taken as the numerator. For international comparisons, there is the further choice of exchange rates for comparison, that is, whether to use Market Exchange Rates (those actually prevailing in any period) or Purchasing Power Parity (PPP) exchange rates. There are several concerns about GDP measures in themselves, and the extent to which estimated incomes represent even economic conditions.

The problems of using national income expressed in Gross Domestic Product are now widely recognised, in terms of the blindness to distributional issues and the inability to measure either the quality of life or the sustainability of any particular system of production, distribution and consumption. Despite these obvious limitations, however, it remains the most widely used indicator on any economy, and is generally the one that is tracked to determine both perceptions of national economic performance and policy orientations of most governments. This is unfortunate, because this obsession with GDP in itself, and independent of other markers of well-being, makes for problematic assessments of the actual performance of economies and, even more tellingly, for poor policy decisions and outcomes. Because GDP in most countries captures only marketed transactions, it excludes a significant amount of production of goods and services for self or household consumption. It makes market pricing the chief determinant of value, irrespective of the social value of any activity, which leads to massive undervaluation of what are now (especially post-pandemic) recognised as essential

¹ This paper is exploratory in nature, without providing very clear-cut answers and solutions to the problems identified. Comments, suggestions and further ideas will be greatly welcome.
social services relating to the care economy. It correspondingly overvalues those activities, goods and services that are priced higher because of the oligopolistic structure of markets. Because it does not estimate ecological and environmental costs in the inputs, it overestimates value added.

For example, a chaotic, polluting and unpleasant system of privatised urban transport involving a multiplicity of private and polluting vehicles on over-congested roads (as is common in many developing countries) typically generates more GDP than a safe, efficient and affordable system of public transport with lower vehicular congestion and a more pleasant living and working environment. In turn, where health services are commercialised, the consequent increase in morbidity from pollution and mortality from vehicular accidents also raises GDP, because of the resulting (largely private) expenditure on health services, etc. The deprivations caused by climate change and other evidence of ecological damage are the result of unsustainable patterns of economic activity that are simply not factored into estimated of national income, despite various attempts to incorporate them.

Services GDP is particularly hard to evaluate, because of the wrong valuation (from a human and social welfare standpoint) of different types of services. Financial services, for example, are hugely overvalued and over-rewarded, at least partly because of the political and lobbying power of financial interests in contemporary societies – and financial asset booms that reflect asset price changes then get reflected in increasing shares of financial services in national income, without any underlying real economic changes. Meanwhile, as the Covid-19 pandemic has shown, care services that are crucially important for human welfare, for the survival of societies and the resilience of economies, are routinely undervalued, with much of this activity performed unpaid (largely by women) within households or in extremely underpaid form. So GDP expansion as the desirable goal or indicator contains all sorts of concerns and contradictions.

Then there is the question of whether, even if GDP is accepted as the appropriate numerator, it is better to estimate “total factor productivity”, which is supposed to take account of all input use, or per worker productivity. While the former makes more logical sense, it is replete with concerns. Incorporating the role of other inputs like land, capital and intermediate inputs would make sense, but the valuation problems in each of these are immense, especially for assets like land and capital (and there is of course the inherent contradiction identified by Piero Sraffa of the self-referential nature of the measurement of capital and the rate of profit). All “total factor productivity” calculations are therefore suspect. Nevertheless, the “Solow residuals” emerging from such decomposition exercises, which are thereby supposed to represent the productivity improvement, are widely discussed and analysed, and have been variously ascribed to “social infrastructure” like institutions and government policies (Hall and Jones, 1999) and human capital and incentives for investment (Acemoglu, 2001).

Because of problems in estimating total factor productivity, it has been more common to indulge in productivity comparisons across countries on the basis of per worker productivity or output per unit of labour, calculated in terms of hours worked. This is seen to indicate many other features of an economy: the per capita income; the extent of capital in use; the level of skill of the workforce; the potential of the economy to provide for the basic needs of the population; and so on. Consider the ILO’s definition of labour productivity: “Labour productivity measures the efficiency of a country with which inputs are used in an economy to produce goods and services and it offers a measure of economic growth, competitiveness, and living standards within a country.” Similarly, the World Bank claims that “labour productivity is used
to assess a country’s economic ability to create and sustain decent employment opportunities with fair and equitable remuneration.”

Once again, there is no shortage of economists offering explanations for variations in output per worker across countries, as well as of changes in productivity over time within any country. Figure 1, for example, produced by the World Economic Forum, seeks to relate per capita incomes with changes in per worker productivity across the world. It suggests that lower-income countries display more rapid labour productivity growth, in accordance with a catching-up or convergence hypothesis.

Figure 1

[Map image showing global productivity and GDP per capita, with various shades indicating different levels of productivity and income.]

Source: https://www.weforum.org/agenda/2016/07/what-is-productivity-and-how-do-you-measure-it/, accessed on 15 July 2021

Obviously, per capita income in a country would be positively related with levels of productivity per worker (though not the rate of change) unless the worker population ratio changes over the period. But somehow this indicator of GDP per workers is taken to suggest something beyond this: the extent of technological advance of a country, its overall macroeconomic “efficiency”. Is this valid?

As already noted, the problem arises at two levels: in terms of the numerator and the denominator. With regard to the numerator, GDP, or aggregate value added in the economy, some concerns have already been expressed. The denominator, labour input, can be defined in terms of total hours worked or number of workers. Figure 2 provides some estimates of global differences of productivity per hour worked. It is immediately evident that data simply do not exist for a large part of the world. Even for countries where such estimates can be made, there are significant concerns about how accurate the estimates of hours worked are, especially in economies with a high degree of informality of the workforce and the presence of significant numbers of self-employed workers, where it is hard to gauge the actual hours of work.
That is why productivity per worker has emerged as the most popular basis for cross-country productivity comparisons, as well as for assessments of changes in technology use and spread within economies over time. Figure 3 presents the World Bank’s estimates of per worker productivity (GDP per person employed) based on national income calculated in terms of PPP exchange rates for 2017. Once again this appears to broadly track per capita GDP measures (in PPP exchange rates) which is not so surprising. But there are some anomalies and some outstanding issues, which become even more apparent when changes over time are tracked.
Table 1, which provides data on an arbitrarily chosen set of high, middle and low income countries, highlights some of the obvious anomalies, which in turn point to concerns with the very conceptualisation of this measure. Consider, to begin with, the absolute levels of per worker productivity in 2019 (taken as the latest year before the Covid-19 pandemic would have messed with the estimates). According to this set of estimates, in that year, economies like Armenia, Kazakhstan, Mexico and South Africa all had absolute productivity levels significantly higher than China. Other countries like Sri Lanka, Thailand, Colombia and Georgia also showed higher per worker productivity, which also flies in the face of evidence on external competitiveness, and other similar indicators. Meanwhile, Saudi Arabia shows extremely high per worker productivity – the second highest (after the US) in this list, and well above Australia, Canada, France or even Germany. The level of per worker productivity in Bahrain appears to be not so much lower than that in the United Kingdom.
Table 1. GDP per person employed (in constant 2017 PPP dollars)

<table>
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<tr>
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<tbody>
<tr>
<td>Argentina</td>
<td>49,516</td>
<td>52,695</td>
<td>6.4</td>
</tr>
<tr>
<td>Armenia</td>
<td>11,575</td>
<td>39,786</td>
<td>246.4</td>
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<tr>
<td>Australia</td>
<td>81,602</td>
<td>99,569</td>
<td>20.1</td>
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<tr>
<td>Azerbaijan</td>
<td>8,673</td>
<td>30,271</td>
<td>243.7</td>
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<td>1,08,537</td>
<td>71,898</td>
<td>-29.5</td>
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<td>Bolivia</td>
<td>12,652</td>
<td>18,061</td>
<td>42.8</td>
</tr>
<tr>
<td>Cambodia</td>
<td>3,254</td>
<td>7,671</td>
<td>138.9</td>
</tr>
<tr>
<td>Canada</td>
<td>75,665</td>
<td>94,099</td>
<td>24.4</td>
</tr>
<tr>
<td>Chile</td>
<td>42,664</td>
<td>56,874</td>
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</tr>
<tr>
<td>China</td>
<td>6,134</td>
<td>31,416</td>
<td>390.3</td>
</tr>
<tr>
<td>Colombia</td>
<td>24,882</td>
<td>32,610</td>
<td>24.1</td>
</tr>
<tr>
<td>France</td>
<td>98,524</td>
<td>1,03,185</td>
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</tr>
<tr>
<td>Germany</td>
<td>95,083</td>
<td>1,02,107</td>
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<tr>
<td>Ethiopia</td>
<td>1,754</td>
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<tr>
<td>United Kingdom</td>
<td>81,474</td>
<td>84,206</td>
<td>14.2</td>
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<tr>
<td>Georgia</td>
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<td>31,441</td>
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<td>Ghana</td>
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<tr>
<td>India</td>
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<tr>
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<tr>
<td>Mexico</td>
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<tr>
<td>Mozambique</td>
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<td>Myanmar</td>
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<tr>
<td>Nigeria</td>
<td>9,136</td>
<td>17,898</td>
<td>95.3</td>
</tr>
<tr>
<td>Saudi Arabia</td>
<td>1,42,881</td>
<td>1,16,313</td>
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<tr>
<td>South Africa</td>
<td>39,296</td>
<td>43,893</td>
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<tr>
<td>Sri Lanka</td>
<td>15,467</td>
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<td>Tajikistan</td>
<td>6,006</td>
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<td>155.8</td>
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<tr>
<td>Tanzania</td>
<td>2,935</td>
<td>5,569</td>
<td>91.6</td>
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<tr>
<td>Thailand</td>
<td>18,065</td>
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</tr>
<tr>
<td>United Kingdom</td>
<td>81,474</td>
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</tr>
<tr>
<td>United States</td>
<td>1,00,390</td>
<td>1,31,047</td>
<td>27.1</td>
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Rates of change are equally startling in some cases. The rapid increase in per worker productivity in China since the turn of the century may come as no surprise, given what we know about China’s rapid rise and technological progress. But it also more than doubled in Georgia, went up by nearly two and a half times in Azerbaijan and more than four times in Myanmar! Meanwhile, per worker productivity showed an absolute decline of nearly 30 per cent in Bahrain over this same period.

Clearly, these figures are significantly affected by the numerator – GDP – which can change sharply for countries that depend excessively on certain mineral or raw material exports such as oil, as global prices change. This obviously plays a role in creating the dramatic increases and some declines in particular countries. These cannot be construed as saying anything about productivity as generally understood. Changes in per worker productivity in Saudi Arabia, Bahrain and even Myanmar could be at least partly understood in that light.

Another reason for these peculiar results is the use of PPP exchange rates to form the basis of comparison across countries. As I have written elsewhere (Ghosh, 2018) while PPP exchange rates appear to control for differences in price levels and standards of living in different countries, they are riddled with conceptual, methodological and empirical problems. They assume that the structure of each country’s economy is similar to that of the benchmark country (the US) and changes in the same way over time beyond the reference year, which is clearly wrong across advanced and developing economies. The absence of weights within basic headings of goods and services, including the lack of representative weights, can result in these basic headings being priced using high-priced unrepresentative goods that are rarely consumed in some countries (Angus Deaton has provided the example of packaged corn flakes, which are available in poor countries, but only accessed by a relatively small minority of rich people). Country PPP rates are constructed from the prices of basic headings using expenditure weights from the national accounts – but these do not reflect the consumption patterns of people who are poor by global standards. While the current PPP measure does try to differentiate across regions, the different regions are linked using the region-wide ‘super’ PPP rates, which generate, for example, a price level for all of (say) Asia relative to the OECD countries—far too aggregative in a very disparate region to be at all accurate. There are additional concerns about the nature and coverage of the surveys that are conducted to establish the price levels in each country.

There is a further, and possibly even more damning, conceptual issue. In general, countries that have high PPP (that is where the actual purchasing power of the currency is deemed to be much higher than the nominal value) are typically low-income countries with low average wages. This occurs precisely because there is a significant section of the workforce that receives very low remuneration, which then means that goods and services are available more cheaply than in countries where the majority of workers receive higher wages. When even these activities are further subsidised by the widespread incidence of unpaid labour, as is typically the case in poor households in low income countries, then it is clear that the greater purchasing power of that currency reflects conditions of indigence and low or no remuneration for what could even be the majority of workers. Therefore, using PPP-modified GDP data may actually miss the point, by seeing as an ‘advantage’ (of greater purchasing power of a given monetary income) the very feature that reflects the greater absolute poverty of the majority of workers in an economy. This means that PPP income estimates effectively overstate incomes of poorer countries when it comes to comparing incomes across rich and poor countries. As countries move up the per capita income ladder, the difference between PPP and MER would reduce – not necessarily over time, but with increasing incomes of the
As aggregate incomes increase, wages and prices in that economy also increase, typically relatively faster than in richer countries, thereby reducing the so-called ‘PPP advantage’. This is strongly evident in the case of China, for example, where the ratio of per capita income measured in PPP terms to that measured in MER declined from 3.1 in 2000 to 1.7 in 2015 as the Chinese economy became richer.

All these factors inevitably make the use of PPP exchange rates in inter-country income comparisons extremely problematic. Certainly, they would not provide accurate estimates in comparisons of per worker productivity across countries.

But the denominator – the number of “workers” – is also a contentious issue. This is because it excludes the entire range of unpaid work that underwrites and typically subsidises the “paid” economy. Such work is largely (but not only) in subsistence provision and care activities within households and communities, and performed largely (but not only) by women and girls. The 19th International Conference of Labour Statisticians (ILO 2013) finally recognised this, by distinguishing between “work” and “employment” and expanding the concept of work: ‘Work comprises any activity performed by persons of any sex and age to produce goods or to provide services for use by others or for own use’. Employment – defined as ‘work for pay or profit’ – is therefore a subset of work.

This lack of recognition of a significant part of the work (dominantly provided by women) has several important economic and social implications. The unpaid-paid continuum of work serves to devalue both those who do it and the work they do. Thus for example, when women do enter labour markets, their wages tend to be lower than those of men – not only because they are willing to work for lower wages but because so much of their work is available for free. Related to this, the occupations in which women dominate tend to be lower paid – and the wage penalty extends even to men doing similar work, such as in the low paid care sector. Third, all this unpaid work provides a huge subsidy to the recognised economy and to the “formal sector”, which rely both directly and indirectly on the goods and services produced by these unsung and unrewarded workers. Because this contribution is not recognised, it could lead to measures suggesting rising aggregate labour productivity in the economy, which may be quite misplaced.

In other words, current estimates of per workers productivity across countries are poor indicators of the reality, because the conceptualisation and empirical estimation of both numerator and denominator are riddled with problems. How do we solve this? It’s not clear what can be done within existing national accounts and statistical systems to make these problems go away: maybe the point is to search for a more reliable and valid indicator of human progress.

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Changing role of neoliberalism across the stages of economic development1
Richard C. Koo2 [Nomura Research Institute, Japan]

Abstract
Neoliberal tenets will produce positive outcomes when the private sector has cool heads and maximizing profits, but not when 1) the economy is in an asset bubble, 2) the private sector is in balance sheet repair mode, or 3) investments in emerging economies offer higher returns than those made at home. All of the advanced economies are currently experiencing at least one of the last two conditions, which often cause the private sector to become a net saver in spite of extremely low interest rates. In such circumstances, the government must act as borrower and spender of last resort to keep the economy running at the macro level, even though neoliberal supply-side reforms may be still required at the micro level to encourage more investment to take place at home.

Keywords: neoliberalism, stages of economic development, pursued economies, small government, debt minimization, balance sheet recession, monetary and fiscal policy

The collapse of the housing bubble on both sides of the Atlantic in 2008 has led to prolonged economic stagnation despite zero or negative interest rates and astronomical amounts of quantitative easing, indicating that monetary easing and market forces are not sufficient to turn the economies around. The onslaught of the pandemic recession of 2020 also showed that government intervention is indispensable to maintaining public health and economic wellbeing. The advanced countries have consequently lost much of their enthusiasm for the free markets, small government, and monetary policy championed by neoliberal economists. This paper attempts to identify the conditions under which neoliberal ideas produce positive outcomes along with those that lead to unfavorable results.

Neoliberalism, a philosophy that prefers small government and free markets over big, interventionist government, had a pervasive influence on the discipline of economics for several decades leading up to 2008. Milton Friedman, a Nobel laureate and one of neoliberalism’s most famous proponents, argued forcefully in favor of free and open markets. He also favored the use of central bank-led monetary policy to deal with economic fluctuations instead of state-led fiscal policy, which he equated with big, intrusive government. The trend toward neoliberalism and a greater reliance on monetary policy gained tremendous momentum in the 1970s as inflation became a serious problem across most of the developed world.

Neoliberalism inseparable from assumption of profit maximization
This paper argues that the relevance of neoliberal tenets is closely tied to at least two assumptions. The first is that the private sector is always seeking to maximize profits, an

1 This paper draws heavily from Chapters 2, 3, 4 and 7 of the author’s The Other Half of Macroeconomics and the Fate of Globalization (John Wiley, 2018), but has been reorganized with a focus on neoliberalism.
2 Richard C. Koo is the chief economist of Nomura Research Institute in Tokyo, and a senior advisor to Center of Strategic and International Studies in Washington, D.C.
assumption that also lies at the foundation of modern economics. The second is that the economy never experiences an asset bubble, that is, most people continue to maintain cool heads. If these two conditions are satisfied, neoliberal policies are likely to produce positive results, but if not, they are likely to result in highly unfortunate consequences.

For the private sector to be maximizing profits, two other conditions must also be fulfilled. The first is that it has a clean balance sheet with no debt overhang. The second is that there is a wealth of attractive investment opportunities.

The first condition is required because if a company’s balance sheet is underwater and its liabilities exceed its assets, it must deleverage as quickly as possible if it hopes to survive. This is because suppliers will demand payment in cash, refusing to extend trade credit to a borrower who might seek bankruptcy protection at any time. Banks are also not allowed to lend money to – or even roll over existing loans to – bankrupt borrowers. A business in such a predicament must therefore place first priority on eliminating the debt overhang as quickly as possible. Such companies are thus forced to focus on minimizing debt instead of maximizing profits regardless of the level of interest rates or the existence of other business opportunities.

The iron law of macroeconomics, however, is that one person’s expenditure is another’s income. If someone is paying down debt or increasing savings, someone else must borrow and spend those funds to keep the national economy running. If everyone is saving and no one is borrowing, the economy will fall into a deflationary spiral.

In a textbook economy, it is assumed that the financial sector will ensure that all saved funds, including money used to repay debt, are borrowed and spent. It does so using the mechanism of interest rates, which move higher when there are too many borrowers and lower when there are too many savers. When market-driven interest rate adjustments are not enough, the central bank is expected to adjust its policy rate to help stabilize the economy by equating savings and borrowings.

The borrowed money that matters here is that which goes into the real economy and not that which is used to finance purchases of existing assets. This is because the acquisition of an existing asset represents just a change in ownership and does not add to GDP. A bank loan officer may not care whether the money it lends is spent on real investments or on purchases of existing assets as long as it is repaid in full at the end, but the distinction (for which, unfortunately, no data exist) is critical for economists seeking to understand where the economy is going.

When a company is faced with an insolvency constraint – i.e., if its balance sheet is underwater – it must eliminate its debt overhang as quickly as possible regardless of the level of interest rates. In other words, it must minimize debt and shun borrowings until assets once again equal or exceed liabilities. Firms go bankrupt or are forced to minimize debt even in the best of times due to poor business decisions they made earlier, but that seldom becomes a major problem as long as the number of deleveraging companies is small relative to the total size of the economy.

But when a nationwide debt-financed asset bubble bursts, asset prices collapse while liabilities remain at their original values, leaving millions of private-sector balance sheets underwater. Affected households and businesses are then forced to repair their balance sheets by minimizing debt even if interest rates are zero or negative. While that is the correct
and honorable thing to do for individual companies and households, the entire private sector may become a net saver if many of them do so at the same time. And if the entire private sector becomes a net saver, the resulting leakage from the income stream will plunge the economy into a deflationary spiral, otherwise known as a balance sheet recession.

In a balance sheet recession, the private sector cannot stop minimizing debt, and only the government is able to borrow and spend the surplus of private savings. By doing so, it not only stabilizes the economy but also provides income to affected households and businesses, thereby enabling them to repair their balance sheets. Government must continue functioning as borrower of last resort until the private sector finishes repairing its balance sheet and resumes borrowing, a process that can take several years, or even a decade, depending on the extent of the balance sheet damage.

Accordingly, if the private sector is minimizing debt to restore its financial health, small government, a key element of neoliberal thinking, must be abandoned in favor of a government that will actively fulfill its role as borrower and spender of last resort. The size of the excess savings problem in advanced countries today, and the reasons why fiscal policy and not monetary policy is required to address this problem, are discussed in greater detail below.

“Pursued economies” and neoliberalism do not mix

The other key assumption that must be satisfied for the private sector to maximize profit is the existence of attractive domestic investment opportunities. When such opportunities are plentiful, businesses will be eager to borrow savings generated by the household sector. But if there are no investment opportunities able to generate a risk-adjusted return well in excess of businesses' borrowing costs, they will no longer borrow money to invest. There is also no guarantee that such opportunities will always be available as they often depend on hard-to-predict inventions and technological innovations.

Households, on the other hand, have been saving for a rainy day or old age for centuries. If borrowings by businesses for real expenditures are insufficient to absorb household savings even at very low interest rates, the savings surplus will become a leakage from the income stream, and the economy will enter a deflationary spiral like the balance sheet recession described above. The economic stagnation that characterized both East and West for centuries until the Industrial Revolution in 1760 was probably due to the dearth of borrowers stemming from the slow pace of technological innovation.

In advanced countries today, the hurdle that must be overcome for businesses to borrow and invest at home has now grown even higher because many emerging economies are offering higher returns on capital than those available at home. They are attracting investment from advanced economies with lower wages, younger and more willing workers, and an increasingly modern infrastructure. This has made it even more difficult for businesses to justify domestic investments, especially when shareholders are demanding ever higher returns on capital.

The author has labeled the stage of economic development where emerging economies offer a higher return on capital the "pursued phase". The economy is pursued in the sense that many industries struggle to compete with lower-cost, more profitable competitors from the
emerging world. Western countries first entered this phase when Japan started chasing them in the 1970s, and Japan first experienced this stage in the 1990s when the Asian Tigers began chasing it. The Tigers then found themselves being pursued by China in the first decade of the 21st century. Today, even China is worried about competition from countries in South and Southeast Asia. Many East European countries and Mexico are also transforming themselves into attractive destinations for foreign investment.

Exhibit 1 illustrates this from the perspective of labor supply and demand. At the beginning of industrialization the labor supply curve is almost horizontal (from ‘D’ to ‘K’ in Exhibit 1) until the economy reaches the Lewis turning point (LTP) (‘K’) because there is an essentially unlimited supply of rural laborers seeking to work in the cities. During this phase, a business owner can attract any number of such laborers simply by paying the going wage (‘D’).

As business owners continue to generate profits and expand investment, the economy eventually reaches the LTP. Once that happens, urbanization is largely complete and the total wages of labor – which had grown only linearly until then – start to increase much faster because any additional demand for labor pushes wages higher along the upward sloping labor supply curve (from ‘K’ to ‘P’).

Once the economy reaches the LTP and wages begin rising rapidly, workers start to utilize their newfound bargaining power. The frequent strikes seen in advanced economies from the 1950s to the 1970s are a reflection of this.

**Exhibit 1. Three phases of industrialization/globalization**

The explosive increase in the purchasing power of workers being paid ever-higher wages also prompts businesses to invest, for two reasons. First, they seek to increase worker productivity...
so they can pay those rising wages. Second, they want to expand capacity to take advantage of workers’ increased purchasing power. Both productivity- and capacity-enhancing investments increase demand for labor, which bolsters economic growth. Business demand for loans to finance these investments also expands rapidly.

This post-LTP era, where wages, consumption and investment are all increasing rapidly and people are hopeful for the future, can be called the “golden era” of economic development. The only drawback of this phase is that it is inflationary and requires a vigilant central bank to contain price increases.

But the golden age does not last forever. At some point, wages reach a level (‘Q’) where foreign competition can gain a foothold. For those companies that are willing to invest abroad, QR becomes the new labor supply curve. Once a country is being chased by a technologically savvy competitor, often with a younger and cheaper labor force, it has entered the “pursued phase” of economic development (starting from ‘P’ in Exhibit 1).

In this stage, it becomes far more challenging for businesses to find attractive investment opportunities at home – it often makes more sense for them to buy directly from the “chaser” or to invest in that country themselves. In other words, the return on capital is higher in emerging economies than at home. Even though companies investing abroad instead of at home are still maximizing profits, the macroeconomic impact of their domestic operations is similar to that of companies that are minimizing debt.

When Friedman and other proponents of neoliberalism were writing in the 1960s and 1970s, this problem of inferior domestic returns on capital did not exist. The advanced economies of the West were all in the midst of a golden era, and businesses in these countries were global leaders. Moreover, when macroeconomics was established as a separate academic discipline in the late 1940s, most industrialized countries were in their golden era, and most economic theory assumed – and still assumes – that the economy is in this stage of development. In other words, these theories are all assuming that firms have their factories only at home.

And until the end of 1970s, most developing countries in Latin America and elsewhere were pursuing the import substitution model of economic growth and were not interested in attracting foreign direct investment. It was only after Asian “Tigers” such as Taiwan and South Korea had proven the superiority of the export-led growth model that emerging economies underwent a wholesale shift and began promoting exports and welcoming foreign direct investment.

All advanced countries today are in the pursued stage (the phase at the far right of Exhibit 1). Households are saving money for a rainy day, just as they have always done, but businesses cannot find sufficient domestic investment opportunities to absorb the household sector’s savings. As a result, the private sector in aggregate is often a net saver in spite of extremely low interest rates. When that happens, the government must borrow the private sector’s excess savings and return those funds to the economy’s income stream to keep the economy running. Here as well, the neoliberal preference for a small government must be renounced, and government must actively fulfill its role as borrower and spender of last resort.
How to run a large government in the pursued era

Budget deficits increase when a government functions as borrower and spender of last resort, as does the public debt. During the golden era, that often leads to rising interest rates, inflation, and a general misallocation of resources as government borrowings crowd out (purportedly more efficient) private investment.

While that may be the case during the golden era, the massive growth in fiscal deficits and national debt in post-1990 Japan and the post-2008 Western economies actually brought about lower government bond yields. Japan’s public debt reached 105 percent of GDP in 1997, when its ten-year government bond was yielding 1.7 percent. By the time debt had reached 230 percent of GDP in April 2013, just before the Bank of Japan began its massive quantitative easing program, the ten-year yield had fallen to 0.7 percent. Similar negative correlations between public debt levels and government bond yields can be observed in most Western economies after 2008.

This happened because the private sector became a large net saver since the bubble burst in 1990 in Japan and in 2008 in the West. And they became net savers because both were in the pursued phase and were suffering from balance sheet recessions. Fund managers tasked with investing the private sector’s savings surplus therefore had no choice but to lend to the government since it was the last borrower standing.

These capital inflows into government bonds are augmented by the fact that many life insurers and other institutional investors are prohibited from taking on too much principle or foreign exchange risk. Investors who have exhausted their risk limits on equity or foreign currency holdings are forced to invest in government bonds because they are the highest-rated fixed-income assets denominated in the local currency. (This is not always the case in the Eurozone, where the same currency is used by 19 different government bond markets. The resulting complications are described in Koo (2018).)

The lower bond yields brought about by this mechanism are effectively a bond market invitation for the government to serve as borrower of last resort. As bond yields fall to levels that would have been unthinkable during the golden era, the government may be able to identify public works projects with social rates of return in excess of government bond yields. Such self-financing projects will not place a burden on future taxpayers even if they result in a higher budget deficit and public debt on paper.

Instead of wasting time worrying about the sustainability of public finances, the best and brightest in a pursued economy should be looking for public works projects with social rates of return that are equal to or higher than government bond yields. Such projects will not only prop up the economy by absorbing the private sector’s savings surplus, but will also provide necessary infrastructure for future generations at the lowest possible cost. This policy option was not available during the golden era, when private- and public-sector borrowers pushed interest rates higher as they competed for a limited pool of savings.

Both of the assumptions needed for the private sector to maximize profits are being violated in almost all advanced countries today, and it is no coincidence that the audience for

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3 International Monetary Fund, World Economic Outlook Database April 2021, cited on April 30, 2021.
4 op. cit. This figure is for CY 2013.
neoliberal arguments is growing ever smaller. When Covid-19 struck in 2020, the private sector shifted its priorities further away from profit maximization and towards survival. Government actions to limit personal movement, bolster medical services, and supplement the income of affected persons all became essential in containing a public health crisis with massive negative externalities. This stood in sharp contrast to the popularity of neoliberal ideas in the golden era, when private-sector balance sheets were clean, loan demand for real investments was plentiful, and there were no public health crises of comparable magnitude.

Magnitude of the problem

Exhibit 2. Private-sector\(^1\) savings behavior changed dramatically after 2008\(^5\)

<table>
<thead>
<tr>
<th>Country</th>
<th>5 years to Q3 2008</th>
<th>from Q4 2008 to present(^4)</th>
<th>latest 4 quarters</th>
<th>(% of GDP)</th>
</tr>
</thead>
<tbody>
<tr>
<td>UK</td>
<td>-0.19</td>
<td>2.02</td>
<td>7.87</td>
<td></td>
</tr>
<tr>
<td>US</td>
<td>3.14</td>
<td>6.53</td>
<td>13.82</td>
<td></td>
</tr>
<tr>
<td>Canada</td>
<td>-0.03</td>
<td>-1.30</td>
<td>7.23</td>
<td></td>
</tr>
<tr>
<td>Japan</td>
<td>7.50</td>
<td>8.34</td>
<td>12.21</td>
<td></td>
</tr>
<tr>
<td>Korea</td>
<td>-1.80</td>
<td>3.47</td>
<td>5.75</td>
<td></td>
</tr>
<tr>
<td>Australia</td>
<td>-7.47</td>
<td>1.58</td>
<td>16.58</td>
<td></td>
</tr>
<tr>
<td>Eurozone</td>
<td>1.28</td>
<td>4.82</td>
<td>9.44</td>
<td></td>
</tr>
<tr>
<td>Germany</td>
<td>8.43</td>
<td>6.44</td>
<td>9.01</td>
<td></td>
</tr>
<tr>
<td>France</td>
<td>2.83</td>
<td>3.75</td>
<td>6.88</td>
<td></td>
</tr>
<tr>
<td>Italy</td>
<td>1.11</td>
<td>3.77</td>
<td>10.54</td>
<td></td>
</tr>
<tr>
<td>Spain</td>
<td>-7.93</td>
<td>7.66</td>
<td>12.16</td>
<td></td>
</tr>
<tr>
<td>Greece</td>
<td>0.33</td>
<td>0.43</td>
<td>0.62</td>
<td></td>
</tr>
<tr>
<td>Ireland</td>
<td>-4.94</td>
<td>1.52</td>
<td>0.43</td>
<td></td>
</tr>
<tr>
<td>Portugal</td>
<td>-3.79</td>
<td>4.35</td>
<td>5.81</td>
<td></td>
</tr>
</tbody>
</table>

1. private sector = household + corporate + financial sectors
2. Entered balance sheet recession in 1990
3. Entered balance sheet recession in 2000
5. Except Canada

Source: Nomura Research Institute, based on these countries’ flow of funds and national accounts data

Exhibit 2 shows the net financial position of the private sector in various economies as indicated by flow-of-funds data. These data divide the economy into five sectors – household, corporate, financial, government, and the rest of the world – and look at what each sector has done with its financial assets and liabilities. In Exhibit 2, the private sector is defined as the sum of the household, corporate and financial sectors. A positive number means the increase in financial assets was larger than the increase in financial liabilities, indicating the sector was running a financial surplus – i.e., was a net saver – during that period.

The middle column in Exhibit 2 shows that since the Lehman crisis of September 2008, which was triggered by the collapse of housing bubbles on both sides of the Atlantic, the private sectors of all advanced countries except Canada have been running a massive financial surplus. That this happened at a time when interest rates were at record low levels indicates
that a large portion of the private sector in these countries has not been “maximizing profits” in the traditional sense.

**Exhibit 3. US households rushed to deleverage after 2008**

The US private sector, for example, has been running a financial surplus averaging 6.5 percent of GDP since Q3 2008. The corresponding figures for Japan and the Eurozone are 8.3 percent and 4.8 percent, respectively. These are almost incomprehensible numbers: with zero or negative interest rates, the private sectors of these economies should all be borrowing, not saving. The fact that these figures all jumped after Lehman Brothers collapsed in Q3 2008, triggering the global financial crisis (GFC), suggests the financial surpluses were driven primarily by balance sheet concerns following the housing bubble collapse. This is also consistent with the fact that Canada’s private sector continues to run a financial deficit and is a net borrower: it is the one country whose housing bubble has yet to burst.

The shift to a financial surplus is more pronounced in the household sectors of those economies because the bubble was in housing. Exhibit 3 shows US household-sector financial assets and liabilities separately. In this chart, a white bar stretching above the zero centerline means the household sector increased its financial assets, i.e., added to its savings. A white bar below zero means the household sector reduced its financial assets, i.e., drew down its savings. Similarly, a shaded bar below zero means the sector took on more financial liabilities, i.e., expanded its borrowings, while a shaded bar above zero means it trimmed its financial liabilities, i.e., paid down debt. The net position of the private sector is shown by the broken line.

Notes: Latest figures are for 2020 Q4.
Sources: Nomura Research Institute, based on flow of funds data from FRB and US Department of Commerce.
Economics textbooks tell us that the household sector saves and the corporate sector borrows. But the US household sector was often a large net borrower during the bubble, shown by the broken line slipping below zero in Exhibit 3. In effect, the entire sector was leveraging up to speculate in the housing market.

Once the bubble burst, the sector suddenly became a huge net saver even though interest rates had fallen to zero. The fact that the shaded bars spent a number of quarters above zero means the sector was not only increasing savings but also paying down debt to restore its financial health. In other words, US households were minimizing debt at a time of zero interest rates.

Although some US households have recently resumed borrowing, the sector as a whole continues to run a financial surplus. That the US household sector is not borrowing more in spite of zero interest rates shows that conditions have not fully returned to “normal”.

Spain also experienced a large housing bubble. The Spanish household sector, shown in Exhibit 4, behaved very conservatively until the bubble but then went on a borrowing binge. When the bubble burst in 2007, not only did households stop borrowing despite zero or negative interest rates, but the whole sector began paying down debt (shaded bars above the centerline) in a trend that continued for a full eight years.

Exhibit 4. Spanish household sector was net borrower during bubble, but is large net saver now

Exhibit 5 shows that the household sector of Ireland, which had a particularly large housing bubble, underwent even more dramatic changes. Starting from a very conservative position around 2000, Irish households went deeply into debt during the bubble. After the bubble
collapsed, borrowing stopped completely and debt repayment (shaded bars above the centerline) continued almost every quarter for over ten years, meaning that Irish households were minimizing debt for more than a decade in spite of zero or negative interest rates.

In such cases, when the private sector is minimizing debt despite zero or negative interest rates, the government must serve as borrower of last resort to keep the economy running. In the US, policymakers such as Ben Bernanke at the Federal Reserve and Lawrence Summers at the National Economic Commission in the White House realized early on that the country was in a balance sheet recession and pushed for fiscal stimulus to prop up the economy. Even though they could not do much after the Republicans took control of the House of Representatives in 2010, they succeeded in fending off arguments for austerity by warning of the dangers of falling off the “fiscal cliff”.

Exhibit 5. Irish household sector was net borrower during bubble, but is big net saver now

Unfortunately, no such understanding emerged in the Eurozone, where neoliberal economists and policy makers pushed for austerity. The Maastricht Treaty that created the euro also made no provision for balance sheet recessions and restricted budget deficits to 3 percent of GDP regardless of the amount of private-sector savings. The subsequent Fiscal Compact adopted in 2012 made it even more difficult for member countries to use fiscal stimulus until the pandemic recession hit in 2020.

After 2008, when the Spanish private sector was saving an average of 7.7 percent of GDP (Exhibit 2), the Spanish government was allowed to borrow only 3 percent of GDP, and the remaining 4.7 percent leaked out of the income stream. The result was a horrendous deflationary spiral that lifted Spain’s unemployment rate to 26 percent. This offers an example
of how the neoliberal approach can devastate an economy when the private sector is minimizing debt instead of maximizing profits.

**Monetary policy first casualty when borrowers disappear**

When private sector borrowers absent themselves because of either balance sheet problems or a lack of attractive domestic investment opportunities, monetary policy – neoliberal economists' favorite policy option – becomes largely ineffective. This is because there is little the monetary authorities can do to address the two borrower-side issues noted above with lower interest rates, forward guidance, inflation targets, or quantitative easing. This was amply demonstrated after 2008 when all the major central banks failed to meet their inflation targets despite vast amounts of quantitative easing and zero or even negative interest rates.

**Exhibit 6.** Drastic liquidity injections resulted in minimal increases in money supply and credit (l): US

For monetary accommodation to stimulate GDP, someone must be willing to borrow money from financial institutions and spend or invest it in the real economy. But in all of these economies, borrowers hardly responded to the monetary stimulus. Exhibits 6 to 10 show that the close relationship observed prior to 2008 between central-bank-supplied liquidity (the monetary base) and the money supply (M2) and private-sector credit (=borrowings) broke down completely after the bubble burst and private sectors began minimizing debt.
These graphs make it clear that the monetary base, money supply, and private-sector credit were closely correlated in textbook fashion prior to 2008. In this world, a 10-percent increase in central bank liquidity would increase both the money supply and credit by 10 percent because there were enough private-sector borrowers to borrow all the funds supplied by the central bank.

But after the bubble burst forced the private sector to repair its damaged balance sheet by minimizing debt, no amount of central bank accommodation was able to increase private-sector borrowings. The US Federal Reserve expanded the monetary base by 297 percent from the time that Lehman Brothers failed until just before the pandemic struck. But the money supply grew by only 99 percent – and credit by only 45 percent – during that twelve-year period. A 45-percent increase in private-sector credit over twelve years represents an insignificant average annual increase of just 3.3 percent.

A central bank can always add liquidity to the banking system by purchasing assets from financial institutions. But for that liquidity to enter the real economy, banks must lend out those funds: they cannot give them away because the funds are ultimately owned by depositors. A 45-percent increase in lending since 2008 means new money entering the real economy from the financial sector has grown only 45 percent. In other words, most of the 297 percent increase in liquidity supplied by the central bank remains trapped in the financial sector due to a lack of borrowers. Similar outcomes have been observed in all the post-bubble economies, including the Eurozone (Exhibit 7) and the UK (Exhibit 8).

**Exhibit 7.** Drastic liquidity injections resulted in minimal increases in money supply and credit (II): Eurozone

Note: Base money’s figures are seasonally adjusted by Nomura Research Institute.
Sources: European Central Bank; Eurostat
This explains why inflation and growth rates in the advanced economies have all refused to respond to zero interest rates and massive injections of central bank liquidity since 2008. The central banks consistently failed to meet their inflation targets because an absence of borrowers prevented the actual money circulating in the real economy from increasing. Milton Friedman and his disciples have argued that inflation is always and everywhere a monetary phenomenon, and that a central bank in charge of monetary policy can therefore create inflation at will. If that were the case, the 297-percent growth in the monetary base should have led to similar increases in the money supply and credit, driving a corresponding surge in inflation. But nothing of the sort happened after 2008 because the private sector began minimizing debt.

Exhibit 8. Drastic liquidity injections resulted in minimal increases in money supply and credit (III): UK

![Graph showing Reserve Balances + Notes & Coins, Money Supply (M4), Bank Lending (M4), and CPI (ex. Indirect Taxes) from 2007 to 2021.](chart)

Notes: 1. Reserve balances data are seasonally unadjusted.
2. Money supply and bank lending data exclude intermediate financial institutions.
Sources: Bank of England; Office for National Statistics, UK

Great Depression as balance sheet recession

Not surprisingly, a similar decoupling of monetary aggregates was observed in the US after the Great Crash of 1929, which led to the Great Depression, and in Japan after its asset bubble burst in 1990. Exhibit 9 illustrates the monetary base, the money supply, and credit supplied to the private sector before and after the October 1929 stock market crash. It shows the three were moving in tandem until the crash, just as textbooks predict, but then decoupled in exactly the same way as they did in the post-2008 economies. The credit line, representing lending to the private sector, fell as much as 54.7 percent from its 1929 peak as US businesses and households sought to pay down debt and repair their battered balance sheets.
The money supply, which consists mainly of bank deposits, contracted by as much as 33 percent during the first three years as people withdrew money from their bank accounts to pay down loans, which declined by the above mentioned 54.7 percent. When the private sector is maximizing profits and there is an abundance of private-sector borrowers, any money received by banks as repayment for existing loans will quickly be lent out again, leaving total deposits and credit in the banking system unchanged. But when the entire private sector becomes a net saver or re-payer of debt, both credit and the money supply contract.

Milton Friedman and other monetary policy “believers” argued that the Great Depression in the 1930s was so severe because the Fed did not expand the supply of reserves quickly enough following the New York stock market crash (unlike its actions following the Lehman failure, shown in Exhibit 6). However, it should be noted that reserves consist of both funds supplied by the central bank and funds borrowed by commercial banks from the central bank. A close look at the borrowed reserve data at the bottom of Exhibit 9 indicates that US commercial banks were paying back huge amounts of borrowed reserves to the Fed immediately after the stock market crash. Prior to the crash, they were borrowing heavily from the Fed because their own reserves were insufficient to meet private-sector demand for loans during the bubble.

Exhibit 9. Same decoupling of monetary aggregates observed in 1930s

After the stock market collapse, bank borrowings from the Fed plunged from $801 million to just $43 million between June 1929 and March 1930, a decline of 95 percent (circled area in lower graph). This was most likely in response to the post-crash collapse in loan demand,
which left banks with no reason to hold borrowed reserves. With bankers so eager to return borrowed reserves, there was no reason for the Fed to supply more reserves.

Proponents of monetary policy also argued that the post-1933 US recovery was made possible not by President Roosevelt’s New Deal policies but rather by the Fed’s monetary easing, which started in the same year. They pointed out that while the deficit-to-GDP ratio did not grow substantially after 1933, the money supply and bank reserves did. However, as noted by the author in his book *The Holy Grail of Macroeconomics* (2008), the money supply is a liability of the banking system and can only grow if banks’ assets also increase. A look at the asset side of US banks’ post-1933 balance sheets (Exhibit 10) clearly indicates that it was only lending to the government that expanded from 1933 to 36 (the circled entry in Exhibit 10): the lending to the private sector did not increase at all. And that was a direct result of President Roosevelt’s New Deal policies, which finally allowed the US government to act as borrower of last resort.

Lending to the private sector actually continued to shrink until 1936. The gap between money supply growth (=deposits) and private-sector credit growth in Exhibit 9 was made up by growth in lending to the government. The correct interpretation of the post-1933 US recovery, therefore, is that government borrowing and spending driven by the New Deal boosted both GDP and the money supply. The US money supply expanded after 1933 because government presented itself as borrower of last resort. With government willing to borrow the excess savings of the private sector, the economy was finally able to emerge from its deflationary spiral.

**Exhibit 10.** Reflationists failed to notice that government’s new deal borrowings enabled post-1933 growth in US money supply.

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5 Chapter 3 in Koo (2008) discusses this mechanism in detail.
The same decoupling of monetary aggregates was also observed in Japan after its asset bubble burst in 1990, as shown in Exhibit 11. Here, too, the Bank of Japan’s massive injections of reserves to the banking system, especially after 2013, failed to increase lending to the private sector or boost inflation (shown at the bottom of Exhibit 11) because there were no borrowers.

Central banks have continued to miss their inflation targets since 2008 because the private sectors have impaired balance sheets and are minimizing debt. These economies are also in the pursued phase, when there is relatively little loan demand for real investments. The insistences of several central bank governors that additional monetary easing will enable them to meet their inflation targets suggest they do not understand why their models and forecasts have failed. They have failed because they are based on the assumption of the golden era: that the private sector is always maximizing profits.

Exhibit 11. Drastic liquidity injections produced minimal increases in money supply and credit (IV): Japan

Neoliberal reliance on monetary policy in pursued economies leads to bubbles

The other condition required for neoliberal tenets to be effective – that the economy is not in the throes of an asset bubble – should require no additional elaboration. What is new and worrisome, however, is that an economy is more prone to bubbles during the pursued era than during the golden era. The dotcom bubble of 2000 was followed only a few years later by massive housing bubbles on both sides of the Atlantic. Today, asset prices are increasing rapidly even in the midst of a pandemic. This tendency for bubbles to form in pursued economies appears to be aided by the neoliberal reliance on monetary policy.
Fed Chair Jerome Powell said in a pre-pandemic speech on June 20, 2018 that the last two recessions in the US were caused by financial imbalances and not by central bank tightening aimed at stamping out inflation. The emergence of these imbalances has much to do with the fact that the US and all other developed economies are now in the pursued era, yet the policy responses in these countries are still characterized by a golden-era reliance on monetary policy.

Once companies start investing overseas and the economy enters a pursued phase, their need to borrow household savings drops sharply. That creates difficulties for the fund managers and financial institution loan officers who used to lend household savings to businesses. With businesses no longer borrowing for capacity- or productivity-increasing investments, fund managers must instead invest in existing assets, which is conducive to the formation of asset bubbles.

Moreover, when borrowed funds are used to acquire existing assets the only change that results is a transfer of ownership: the funds themselves remain in the financial markets. For example, if one investor purchases equities from another, the seller must then invest the proceeds in stocks or other assets. The fact that the money stays in the financial sector contributes to the practice of “flipping” assets observed during bubbles. In contrast, funds lent to businesses for productivity- or capacity-enhancing investment are typically used to buy plant or equipment, causing money to flow from the financial sector to the real economy.

Interest rates also fall sharply once loan demand from businesses shrinks significantly. The problem is that fund managers are still expected to produce the kinds of high returns seen during the golden era even though such returns are no longer possible in a pursued economy. That puts pressure on the managers to participate in asset bubbles in search of high returns. Even those who are aware they are in a bubble may still join the party if they are confident they can leave before the music stops playing. If everybody thinks that way, of course, no one will be able to get out when the crash comes because everyone will be a seller of assets and no one will be a buyer.

In pre-LTV eras, when the rich were the only players in financial markets, an absence of borrowers typically prompted wealthy lenders to stop lending altogether instead of accepting interest rates too low to be justified on a risk-adjusted basis. This is what Keynes called the liquidity preference and is probably why historical records do not show interest rates falling to extremes even when economic growth was stagnant – lending ceased long before rates could fall that far.

In the modern world, however, salaried fund managers are under pressure from their employers to produce a return and do not have the option of sitting on cash. That was not a problem during the golden era, when there was strong demand for funds from businesses and interest rates were high. Indeed, the golden era was a lender’s market.

In the pursued era, however, corporate demand for funds shrinks while households continue to save for an uncertain future, pushing interest rates down to very low levels. But many of today’s fund managers, employed by financial institutions, are under pressure to produce

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returns at all times, unlike the wealthy lenders in the pre-modern era who could simply sit on cash. Furthermore, many are now competing against market indexes. In such a world, any fund manager who outperforms the index will be praised even if he or she has a low absolute return. Thus, the concept of risk-adjusted return is often pushed aside in order to beat the index in a low interest rate environment.

Central banks often part of the problem, not part of the solution

Central banks’ willingness to espouse negative interest rates also reduces the attention investors pay on risk adjusted returns. One wonders how it is possible for a central bank that supervises commercial banks and demands they charge appropriate risk-adjusted interest rates on loans to embrace negative interest rates, which can never be justified on a risk-adjusted basis.

Central banks may also contribute to this problem in pursued economies by responding to economic weakness with lower interest rates and additional liquidity. Such monetary easing policies effectively increase the number of lenders in the economy. But when the economy is suffering from a lack of borrowers and interest rates are already very low, those newly added funds have no place to go. All they do is push prices of existing assets higher through the portfolio rebalancing effect, which is a prelude to bubbles.

This effect is augmented when central banks attempt to achieve a 2-percent inflation target in pursued economies, which are fundamentally disinflationary. With no borrowers in the real economy, central bank liquidity has no way of leaving the financial sector, which means neither inflation nor GDP growth will increase. But the lack of results convinces central bankers that they have not done enough and prompts them to do even more QE, thereby increasing the funds that fund managers must invest in existing assets and contributing to the growth of bubbles.

The above factors suggest that bubbles are more likely to form in a pursued economy, which is a borrower’s market, than in the golden era. As of this writing, share prices are at all-time highs in many countries despite the pandemic, and in the US both commercial real estate and some residential real estate markets have far exceeded their previous bubble-era highs (Exhibit 12). The point is that an excessive reliance on monetary policy to create inflation in a pursued economy will not create inflation, but it will exacerbate existing financial imbalances by creating unproductive cycles of bubbles and balance sheet recessions.

When an economy is in the pursued phase or is facing a balance sheet recession, the correct policy response is for the government to borrow and spend the private savings surplus on infrastructure projects, thereby supporting the economy without QE. Since fund managers can lend to the government, it obviates the need for them to invest in bubbles. It also reduces the likelihood of the private sector squandering its savings in asset bubbles.

The main policy challenge when Milton Friedman was writing in the golden era was containing inflation, and his preference for monetary policy and disdain for fiscal policy were warranted. But advanced countries today are all in the pursued stage of development and are suffering from balance sheet recessions. At such times, the key policy challenge is what to do with the emergence of private-sector savings surplus in spite of historically low interest rates. Here the government must function as borrower and spender of last resort using fiscal policy.
Overreliance on monetary policy in this era will not help the economy and will in fact exacerbate financial imbalances by triggering undesirable cycles of bubbles and balance sheet recessions. In the pursued economy, central bank cannot be part of the solution, but it can well become part of the problem.

Exhibit 12. Some asset prices already far above previous bubble highs

Pursued economies still need neoliberal ideas at micro level

This is not to say that neoliberal ideas are totally irrelevant for pursued economies. Because slow growth in the pursued era is the result of inferior domestic returns on capital, policymakers need to encourage businesses to invest at home by adopting policies that boost the return on capital – i.e., lowering taxes and deregulating the economy, as dictated by neoliberal tenets. Pursued economies must also keep their labor markets flexible enough to allow businesses to take evasive action to fend off pursuers.

President Ronald Reagan was the first head of state to take the challenges of a pursued economy seriously (the US was being pursued by Japan at that time). He lowered taxes, deregulated the economy, and took strong action against labor unions. Labor unions at the time were still trying to extend gains made during the golden era, not realizing that the US had already entered the pursued stage of development when the Japanese arrived. Reagan’s actions, symbolized by his decision to fire the civil air-traffic controllers who staged an illegal strike and replace them with military controllers, finally broke the unions’ back and made it easier for businesses to respond to competition from foreign rivals. These neoliberal supply-side reforms allowed the US to restructure its economy and regain its growth momentum after struggling for nearly two decades to fend off the Japanese.
In contrast, both Japan and Europe have been slow to implement supply-side reforms such as lower taxes, deregulation, and greater labor market flexibility. This is one reason why the US is doing comparatively well while they continue to struggle with slow growth.

At the macroeconomic level, governments in the pursued economies must be allowed to operate as borrowers of last resort, but at the microeconomic level they need to pursue a neoliberal agenda to make their economies more attractive for businesses. If structural reforms succeed in attracting domestic investment, the private-sector savings surplus may eventually disappear, at which point the government will no longer need to serve as borrower of last resort.

The problem is that it can take a decade or more for microeconomic structural reforms to make a difference at the macroeconomic level. For example, the tax cuts and deregulation measures implemented by President Reagan in the early 1980s took nearly fifteen years to bear fruit, and it was President Bill Clinton who reaped the benefits. The US economy continued to perform poorly in the meantime, which is why President George H.W. Bush, whose foreign policy achievements included ending the Soviet Union and victory in the Cold War and the first Gulf War, lost his re-election campaign to a young governor from Arkansas whose only election slogan was “It’s the economy, stupid!”

In both post-1990 Japan and post-2008 Europe, it has been argued that structural reform, not fiscal stimulus, is needed to turn the economy around. But these economies have been suffering from severe balance sheet recessions requiring immediate fiscal stimulus, not structural reforms that take 15 years or more to produce results. Not surprisingly, they have been stagnant for years, demonstrating that micro-level neoliberal reforms are no substitute for macro-level fiscal stimulus. The government must also act as borrower of last resort until the private sector has resumed borrowing and investing at home.

During the golden era, small government and freer markets are often identified with conservative politicians, while bigger and more involved government is associated with progressives. In the pursued era, a larger and more involved government is needed at the macro level to ensure that all saved funds are borrowed and spent. But at the micro-level, freer markets with lower taxes are needed to encourage domestic investment. A flexible labor market is also required to allow businesses to take evasive action to defend themselves from foreign pursuers.

This means new political groupings will have to emerge if pursued countries are to be governed effectively. If the same two parties are to continue governing the US in this new era, the Republicans will need to jettison their opposition to the government serving as borrower of last resort, while the Democrats must distance themselves from the labor market rigidities introduced by unions to enable more investment and job creation at home. These challenges are entirely new to the pursued era.

Three problems with Milton Friedman’s call for free markets

When Milton Friedman visited Japan in the 1950s and spoke to economist Kazushi Nagasu, he had strong things to say about the plight of his people: “I am a Jew…I do not think I need to tell you what kind of horrible deaths Jewish people had to face. The real drive behind my argument for free markets is the bloodied cries of Jewish people who perished under Hitler’s
and Stalin’s regimes, and their message is that the best way to happiness is to have a mechanism that brings people together where states, races and political systems have no influence.”

Although many would agree with Friedman that the free market is the necessary mechanism, he is wrong on at least three counts. The first is his assumption that markets driven by a profit-maximizing private sector can never go wrong. Every so often the private sector loses its head in a bubble, something observed most recently in the late-1990s dotcom bubble and the housing boom that followed a few years later. During a bubble, the private sector engages in a frenzy of speculation and ends up misallocating trillions of dollars of resources, something no government could ever hope to match. Markets work well when businesses and households have cool heads, but not when a bubble has formed.

Unfortunately, the pursued era is more conducive to the formation of asset bubbles than the golden era, when Friedman was formulating his theories. This is because a shortage of borrowers in the real sectors forces fund managers entrusted with the private sector’s excess savings to invest in existing assets such as stocks and real estate. With the low interest rates typical of the pursued era and central banks trying to hit their inflation targets with ever larger injections of liquidity, fund managers must take more risks to generate adequate returns.

When the bubble eventually bursts, the private sector comes to its senses and realizes it must work to restore its financial health by shifting its priorities from maximizing profits to minimizing debt. Even though that is the right thing to do at the individual level, when pursued collectively it causes the entire private sector to begin running a financial surplus and tip the economy into a devastating balance sheet recession.

This is where Friedman made his second mistake. He argued that monetary easing – whereby the central bank supplies liquidity and lowers interest rates – should be the primary remedy for recessions. This was the right answer when he was developing his theories in the 1950s and 1960s, as the US was in the golden era and businesses had ample domestic investment opportunities. But the effectiveness of monetary policy is drastically reduced once the economy enters the pursued phase, which is characterized by dwindling borrowers. The problem gets worse when the economy enters a balance sheet recession with its private sector minimizing debt. Monetary policy stops working because the absence of borrowers means funds supplied by the central bank to the financial sector have no way of entering the real economy even if interest rates are lowered to zero.

Friedman’s third mistake was to oppose fiscal stimulus based on a preference for small government. To him, fiscal stimulus represented big, intrusive government. But in a balance sheet recession, the government must use fiscal stimulus and serve as borrower and spender of last resort. There is no other way to keep the economy out of a deflationary spiral and give the private sector the income it needs to pay down debt and rebuild its balance sheet. The same applies when the economy is in a pursued phase with insufficient domestic investment opportunities.

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Friedman’s overriding emphasis on the supremacy of markets, monetary policy, and small government allows no room for government to act as borrower of last resort. But it was the inability of Germany’s Brüning government – due in no small part to pressure from the Allied Command – to use fiscal stimulus to prevent the post-1929 economic collapse that allowed the country’s unemployment rate to reach 28 percent and paved the way for Adolf Hitler’s rise to power in 1933.

For better or for worse, Hitler implemented the speedy, sufficient and sustained fiscal stimulus needed to tackle the nation’s balance sheet recession – the construction of the autobahn expressway system was among the many public works projects undertaken by the Nazi government. By 1938, just five years later, Germany’s unemployment rate had fallen to 2% when the US unemployment was 19%.

This was viewed as a great success by people both inside and outside Germany. In contrast, the democracies of the United States, France and the UK continued to suffer from high unemployment as policymakers were unable to think outside the box of balanced budgets and small government. The failure of the French, UK and US governments to act as borrowers of last resort not only enhanced Hitler’s reputation, but also prevented them from presenting a credible deterrent to Germany’s rapidly expanding military.

To prevent the possibility of another Holocaust, it is essential that the public be taught what a balance sheet recession is and how to fight it with fiscal stimulus. People must also realize that neoliberal ideas that were relevant in the golden era are often counter-productive in the pursued era. Although pursued economies need to reform themselves along neoliberal lines at the micro-level to encourage more domestic investment, there is simply no room for neoliberalism at the macro level when the economy is in the pursued phase or is suffering from a balance sheet recession.

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1. Introduction

Twentieth-century economics pretended to be a value-free science. Among the values in fact adhered to and promulgated are two that turn out to be especially problematic: the goal of economic growth, and the elevation of consumerism. Growth is a macroeconomic issue, while consumerism plays out on the micro scale of individual motives, choices, and actions. Mediating between these are business enterprises, especially corporations. These are the actors whose interests are served by the promotion of consumerism and the belief that economic growth is good – indeed necessary – for everyone.

This paper will begin with brief comments on why the values of 20th-century economics – especially the elevation of consumption as a goal, and consumerism as the way to achieve it – are dangerous in today’s context. Next will be a glance at the history of consumerism, along with the counter history of industrialization in the Marxist inspired world of the Soviet Union.

Economics, as a system of theory, beliefs and practices is not responsible for all the woes of today’s world, but it is deeply entangled with many of them. Subsequent sections (5-8) will look again at the embeddedness of consumerism in the U.S. economy, and then consider some of the ways consumer-related – and other – values are learned: through morality passed on informally and through formal education; how they are embedded in, and promulgated through, business practices; and some critical roles for government. Discussions of business will include the possibility for new forms (industrial ecology will be emphasized) to move in more wholesome directions.

Dramatic changes in our economy are needed if it is to shift onto a path of social equity and environmental sustainability – to dodge the worst possibilities of climate change – and to cope with the damages that cannot be dodged. System change requires value change. The paper will conclude, in section 9, with suggestions for values that could be adopted in place of those of 20th-century economics, and ideas for how such values can change the field of economics.

2. The dangers in consumerist values, and in the “value-free” claim of 20th century economics

A culture of consumerism is one in which individual identity, self-respect and social position are strongly tied to the purchase of marketed goods; spending money is seen as a pleasurable and desirable end in itself; and there is encouragement for the belief that the purchase and use of high-end goods, in particular, will bring happiness. In the modern culture of consumerism, emanating from the United States but spreading widely throughout the world, the motivation for firms to sell what they produce has become a –perhaps the – great

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1 Sections 3 and 4 in this paper draw heavily on a 2004 unpublished manuscript by my late husband, the MIT historian Bruce Mazlish. I am grateful to Mark Hoffman and James Aronson for helpful comments on this paper.

2 For an overview of this topic see Goodwin, Ackerman and Kiron, eds., 1997 The Consumer Society. Washington, DC., Island Press
driver of economic behavior. There are two major problems with a culture of consumerism. One is that such a culture appears to detract from overall well-being (see section 5, below). The other is that it is hard to restrict growth in a culture oriented toward purchasing.

Economists often say – and the rest of the world has believed them – that the only alternative to economic growth is economic collapse. As an example, growth was seen as so essential that, in order to sustain the consumption bubble of the 1990s and the early 21st century, Federal Reserve Chairman Alan Greenspan felt it necessary to lower federal interest rates nearly to zero. Consumers were encouraged to borrow money on the basis of inflated house values, so as to be able to spend beyond their incomes. It became evident that that consumption bubble was unsustainable when it turned out that the value of many capital assets was to a considerable extent fictional.3

In contrast to the economic assumptions and promotion of ever-increasing growth and consumption, another discipline – ecology – teaches us that, in a contest between finite nature and endless economic expansion, humanity will inevitably be the loser. The reality of climate change is beginning to force a recognition that many aspects of our existing economic system are unsustainable. The most obvious is an energy system built on fossil fuels – coal, petroleum and natural gas. Some of the other unsustainable contemporary human systems include many aspects of how we use natural resources (soil, water, biota), as well as the economic-cultural system employed to keep raising output and consumption – the activities generally used to define economic growth.

Environmentalists have had at least one positive effect on mainstream economists, emphasizing the need to internalize the costs of economic activity that have been externalized to the natural world. However, other meta-externalities4 – unwanted side effects of the whole economic system on its physical and social contexts – continue to be invisible to the theory. Critical meta-externalities show up in the impact of the economic system on the social context. (“The economic system” as just cited is a large concept; it includes not only all the economic activities of production, distribution, consumption, and maintenance of productive resources, but also the ways that ideas about the economy flow back and forth between economic actors and those who teach and theorize economics.) This impact is closely connected to the values embedded in 20th century economics.

These values include the ideas that only selfish maximizing is rational; that work is essentially always a bad; that the goal of an economic system is to grow by perpetually maximizing output and consumption; and that markets are virtually always superior to governments in achieving economic goals, because markets are, in the ways that count in economic theory, more efficient.

Economists may point out that the literature in 20th-century economics includes many refinements – that the summary of the values embedded in 20th century economics just offered is far too simplistic. I would respond that the values cited here are, in fact, the ones that have been carried away from high school, undergraduate and graduate classes in economics, and they are the values often applied by decision makers, whether for personal or business decisions, or in public policy. These values are not only promulgated in classrooms;

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3 These capital assets included home values as well as many far less tangible “values” (derivatives and other sorts of bundled, etiolated or overleveraged assets) that were bought and sold on stock exchanges.

4 I believe this term originated with me.
they have sunk deep and wide into a global culture to which very few societies in the world are immune.

Contemporary media, operating largely in the interests of business, have taken off from economic theory to promote a set of ideas about what is desirable and admirable. From the sales point of view, the self-interest of business is served by a culture of instant gratification and simplified thinking that urges material purchase as the answer to any discomfort. This is not the culture needed for the 21st century, when it is more than ever important that citizens and politicians care about the long run, and are able and willing to address intelligently the myriad highly complex issues that face modern societies.

3. The creation of the consumer society

Consumerism is closely allied with capitalism. It began as a Western phenomenon, becoming global with the global spread of capitalism. An overview of the historical aspects that appear to have been necessary for this huge shift include: a social revolution in the West, replacing feudalism with capitalism, and replacing a dominant aristocracy with a hegemonic bourgeois; the existence of a commercial revolution, which is pre-requisite for the institutional and productive arrangements required to supply an emerging consumer society; accelerating advances in science and technology; an urban-industrial expansion, shifting a large part of the growing population from a subsistence rural sector to a wage-paying factory locus; the spread of an ethos justifying both capitalism and the increased wealth of the ordinary worker; the encouragement of status ambitions and conspicuous consumption in both the middle and the working classes; and the development of institutions, such as advertising, to awaken and channel newly promoted wants.

Resting on this history, two 19th-20th century economic developments were critical in allowing mass consumption to come into being and to grow as the force supporting ever-increasing production. One development was the rise in price of human labor, relative to the prices of energy and raw materials – hence spreading purchasing power. The second development was that a growing proportion of the average household budget was liberated from purchasing necessities, and made available for "extras" – starting with pottery dishes and machine-loomed fabrics; moving on to bicycles and oil lamps; through Keyfitz’s "standard package" of electric lighting, refrigerators, televisions and automobiles; to computer gadgets, cell phones, jet skis and $5,000 barbecue grills.5

Although consumerism took root in the eighteenth century, it took some time before it fully blossomed. At the dawn of industrialization, it was not at all clear that workers would become consumers. Early British industrialists complained that their employees would work only until they had earned their traditional weekly income and then stop until the next week. Leisure, it appeared, was more valuable to the workers than increased income. This attitude, widespread in preindustrial societies, was incompatible with mass production and mass consumption. It could be changed in either of two ways.

Initially employers in England, where industrialization essentially began, responded by lowering wages and imposing strict discipline on workers to force them to work longer hours.

Over time, however, organized workers, political reformers, and humanitarian groups pressured for better wages, hours, and working conditions, while rising productivity made businesses more open to meeting some of these demands. Thus a second response to the preindustrial work ethic gradually evolved: As workers came to see themselves as consumers, they would no longer choose to stop work early and enjoy more leisure. Instead, they preferred to work full time, or even overtime, in order to earn and spend more. In the United States, the “worker as consumer” view was fully entrenched by the 1920s, when the labor movement stopped advocating a shorter workweek and instead focused on better wages and working conditions.

By now consumer spending accounts for about 70% of the U.S. economy. The economy that we have inherited from the nineteenth century’s combination of technological, managerial, social, and psychological innovations is one that appears to be dangerously threatened by depression or recession whenever consumer demand falters. To bring this point home, consider the need to build in automobile obsolescence, through changing fashions as well as by production of vehicles with a life expectancy shorter than technologically possible. What, it is worth asking, would happen to the U.S. economy if all buyers kept their cars for thirty years? Or what if we could keep using the same computers or cell phones for several decades?

In the twentieth century advertising came into being as a specialized profession whose task was to awaken desire for a product, not to provide information for one that was already in the buyer's mind. Advertising, especially after the advent of TV, became a force rivaling that of religion and education in shaping public aspirations. Here is an example. In the 1880s, cigarette smoking was only beginning to catch on, with most tobacco use being in the form of pipe smoking, chewing tobacco, or cigars. What cigarette users there were, rolled their own (as any good cowboy picture would show). James Bonsack, an inventor, patented in 1881 a cigarette-making machine that could turn out 120,000 a day (a skilled hand worker might produce 3,000 a day). No existing market, however, could absorb anything like that output. Enter James Buchanan Duke. In 1884, he installed two Bonsack machines. As the machines allowed the price to be cut drastically, Duke needed a mass market. He created it by engaging in a national advertising campaign, coupled to an extensive sales organization whose aim was to promote the consumption of cigarettes all across the country and eventually the world. Duke created the "want" for cigarettes, awakening in large numbers of people a desire to consume his mass-produced item. Camels and eventually Marlboro men entered the cultural landscape. In this prototypical experience, mass consumption is on its way to becoming mass culture as well.

4. The Marxist alternative

We may look to the old Soviet Union for evidence that consumerism is not the only problem; industrialization according to a different ideology can also operate with cruel indifference to social and environmental externalities. Marx himself had paid little attention to the consumer, or even to the specialized production worker, simply assuming that goods will be "mechanically" produced without the push or pull of human desires. This was the theory at the time of the Bolshevik Revolution; however Lenin had to respond to different circumstances. Russia had not gone through the stage of developed capitalism, with its accompanying...

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consumption features – 90% of the population, for example, was still rural in 1917 – and could hardly assume an abundance of goods. Lenin's task, then, was to industrialize Russia by means of communism, or state planning. In pursuit of his goal he was even willing to import capitalist methods, under communist control, including the Taylor method of scientific management, and in 1929 the Ford Motor Company signed an agreement to produce cars in the Soviet Union. All emphasis was on production and on the accumulation of capital. Consumption was a bourgeois, degenerate habit.

Stalin continued the process, only more brutally. Enormous leaps of heavy industry production occurred. The natural resources of Siberia, already plundered under the Tsar by Cossacks and trappers, was now exploited in the most blatant industrial fashion. Rich in raw materials, such as gold, coal and iron, this great undeveloped region became the source of over half of the Union's gross domestic product. The devastation of the environment matched the worst features of early capitalist depredations, and are still with the post-Soviet Union today.

Marxian theory emphasizes the well-being of people in their roles as workers. This has been an important counterweight to the implication in much neoclassical writing that economists' prime concern should be with the well-being of people in their roles as consumers. It would be nice if the places in the world where Marxist economics are taken most seriously were leading in a move against consumerism, but unfortunately there is an overriding goal that continues to embrace both Soviet industrialization and consumerism in the West; the goal of economic growth. Moreover, as the countries in question have evolved since the tacit acceptance of Western (or at least more Western) economics in the 1990s, the behaviors of both producers and consumers have veered towards the culture of consumerism as described above. Capitalism as we know it appears to come in a package that includes both consumerism and growthism.

5. Cultural and psychological aspects of value shaping

Societies living by consumerist values are producing a huge quantity of goods and services, but a large proportion of these do not contribute to well-being, while many well-being needs continue to go unmet. An example of perverse production is an agricultural system that contributes to ill-health; the unmet need here is for nutritious foods produced without inputs that sicken both land and people. For another example, we would on the whole be better off if we could keep our household appliances, clothes, and other products for much longer than is now permitted by fashion, planned obsolescence, and "keeping up with the Joneses."

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7 https://www.history.com/this-day-in-history/ford-signs-agreement-with-soviet-union "Ford’s assistance in establishing motor vehicle production facilities in the USSR would greatly impact the course of world events, as the ability to produce these vehicles helped the Soviets defeat Germany on the Eastern Front during World War II."


9 This has seemed more evident in China, where the conversion to capitalist systems of production and distribution started a decade earlier and took place over a longer time; indeed, it is sometimes argued that for many centuries there were aspects of both capitalism and consumerism in China (though not widely distributed among the population), while these ways of living and working are more foreign to Russian history and culture. It remains to be seen whether there will be lasting effects from a recent youth rebellion against the emphasis on economic growth, consumerism, and the 996 (working 9 to 9, 6 days a week) system.
Because so much of the culture of consumerism in its modern form took shape in the U.S., it is worth looking at the cultural roots specific to this country. Historically American values have included a duality, between admirable thrift and ingenuity in the use of time and resources, vs. admiration of extravagant spending. The values cited in preceding sections of this paper have tilted very much towards extravagance. The possibility exists, however, for some eco-efficiency measures to be taken out of the frame of “low-class penny-pinching” and put into the frame of “smart business practices that also serve a noble purpose”. New value contextualization may be required to move in this direction. This can only come about through iterative, mutually reinforcing changes taking place in many parts of society. Obviously the discipline of economics is only one among many areas where value change is needed, but I believe it is an area of great significance. As I sketch out the broader landscape of value-shaping I will try to suggest where economic theory and education may fit in.

A major portion of value-learning occurs in childhood and youth. However values can be revealed and strengthened at a later age, and can also be concretized and contextualized; for example, when people become aware that concern for our children and grandchildren must imply concern for the biosphere. It often seems, and perhaps it is the case, that the most important single arena for the shaping of values is formal. However, next to every modern, formal education system there exists a parallel one that is not generally recognized as such. In the United States, for example, the total US expenditure on advertisement in 2019 amounted to over $242 billion. By comparison, this total is more than one-third the size of all public – federal, state and local – expenditures on education, which in 2019 totaled about $721 billion. State funded education covers an immensely broad range of subjects and goals, while advertising has essentially a single goal: to promote consumption. And many children spend much more time in front of television sets than they spend in school.

Obvious loci for value-shaping are:

- In the lives of children, teens and adults at home or in societies at large: among family and friends; through leaders, commentators, and influencers who are seen on the news as well as other TV shows; the arts; formal, obvious advertising; and the informal promotion of various values through social media.
- At school: from peers; through examples given by admired people, including teachers; in the “fashions of thought” that percolate through textbooks and other curricular materials.
- Through action: we come to believe in, and give value to, what we do; even while what we do is, in turn, shaped by our beliefs and values.

The force of morality runs across all of these arenas. Religions, parents, schools and ethically oriented organizations can and do offer a variety of alternative moral beliefs to the widely held

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10 [https://www.statista.com/statistics/429036/advertising-expenditure-in-north-america/]
11 [https://educationdata.org/public-education-spending-statistics]
12 Data for 2007-2008 show that the average American child spends 6 hours and 45 minutes in school (National Center for Education Statistics. 'Schools and Staffing Survey'. [https://nces.ed.gov/surveys/sass/tables/sass0708_035_sts.asp]). By comparison, in 2019, the average screen time for 8-12 year old children was 4 hours and 44 minutes, while the average for teenagers was 7 hours and 22 minutes, not including time spent using screens for school work (this was before Covid put children into virtual school, skewing all data.) (Siegel, Rachel. 2019. 'Tweens, teens and Screens: The average time kids spend watching online videos has doubled in 4 years' [Washington Post]. [https://www.washingtonpost.com/technology/2019/10/29/survey-average-time-young-people-spend-watching-videos-mostly-youtube-has-doubled-since/])
economic tenet that “only selfishness is rational; everything else is either irrational or just pretend”. It is unfortunate that in the United States the ideology of capitalism and free markets, notably spearheaded by Milton Friedman, has been heavily politicized. It was adopted by President Reagan, used as a rallying cry during the Cold War, and has become a part of the political polarization of the 21st century. Thus the elevation of selfishness, which was first proposed as a tenet of economics in Mandeville’s 1705 Fable of the Bees, was refined for modern purposes and is now a central tenet for the powerful monied interests that are defending their privilege against forces seeking to diminish inequality and address environmental crises.

Morality is often seen as in a contest with pleasure. The young field that calls itself hedonic psychology (other people know it as happiness studies), sets out to clarify what actually contributes to happiness – an important question in a social/cultural/economic context where consumption is promoted as the way to happiness. Hedonic psychology has established strong evidence for a set of propositions that to some may sound like simple common sense, but that are directly opposed to basic assumptions in standard economics:

- Human well-being – the ultimate purpose of any economy – is not only tied to what people have, but also to how they feel about it and what they do with it. Leisure to enjoy the riches that advanced economies have accumulated in the last centuries is becoming one of the most significant scarce resources; for many, well-being will be better served by more time than by more products. This gives credibility to a scenario in which some systems of production and consumption could be modified to produce less output (thereby mitigating climate change and other environmental burdens) but more well-being.

- Individual increases in material wealth do not raise the happiness of the whole society; indeed, evidence from Japan and the US, where the standard of living has risen greatly since the 1950s, shows no increase – if anything a decline – in the happiness of the population as a whole.

- Wealth very much beyond basic needs, when it belongs to and is spent on behalf of individuals, operates within a zero-sum game wherein success by a few creates, among the rest, hopeless wishes for emulation, and overall well-being is not increased. By contrast, wealth that belongs to, and is spent on behalf of, a whole society can be used to promote public goods such as environmental protection and ecological restoration, for the well-being of present and future generations. More equal societies are better able to cope with emergencies; moreover, if a cultural norm of equality promotes more use of resources for public goods, less for private status consumption, they will be happier.

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13 To be sure, at any time and place in human history it would be possible to find sociopaths guiding their lives exclusively by this cynical belief, and there have probably been societies other than our own wherein it became dominant; but the survival of the human species has required many contrary impulses to be built into our genetic as well as our cultural makeup. There is no longer much debate between “the selfish gene” and “group survival” among those who follow science. Both are understood to be relevant drivers of human, animal and even plant behavior.

14 First published in England in 1705, this predated the development of economics in any form now recognizable. Adam Smith did not make as much use of it as is sometimes claimed by 20th century economists who wished to cite Smith as the origin of this anti-moral stance.

The last point was vigorously made by John Kenneth Galbraith; however he did not have access to the supporting data assembled in the 21st century by the exponents of hedonic psychology. More recently Robert Frank has effectively reexamined the psychological factors that make people feel deprived when they observe others living at a “higher” (more expensive) standard than theirs. This line of thinking can be turned on its head in regards to the common association of morality with sacrifice. The critical element is the question of community. If an individual reduces their expenditures for environmental or other moral reasons, the enjoyment of virtue must contend with constant reminders of what they are missing. If an entire society sets out to consume less it is possible that much can be done without a feeling of cut-to-the-bone sacrifice.

6. Corporations, governments, and business education

Who decides what will be produced, how and for whom? These are, of course, the essential questions put forth by standard economics – except that the first two words – “who decides” are generally not included. The economic actors to whom this decision-making role has been effectively given in the capitalist world over the last half century are the large corporations, including banks and other financial entities. The ideological choice, to let the market decide what to do, because it is always more efficient, is in fact a choice to leave the decisions to the large corporations.

The discipline of economics could play an especially helpful role in rethinking growth in new terms, including industrial ecology (briefly discussed below). There is a need for the best theorists to address the question – on both the micro and the macro levels (i.e., both for firms and for societies) – of how economic health can be compatible with a cessation, a reduction, or at least a dramatic redefinition of growth. Such a basic reconceptualization must revisit a question that lies only partly within the domain of economics: which are the societal decisions that should be made by markets, and which should be made by other parts of the social structure?

Just to take one example, among many, of where this issue shows up, consider the deployment of financial capital, in the form of investments. Growth in the gross value of the stock market is generally considered necessary for pension funds, for university and philanthropic endowments, as well as the personal income of the investing class. In some other parts of the economy the necessity of growth is not quite so obvious; indeed, with the shrinking in the total human population that is expected to begin by 2050, if not sooner, an observer from another planet might wonder why we could not reasonably support a shrinkage in the size of the global economy. From the ecological point of view, that appears indeed quite appealing. Can it occur in ways that are not harmful for human well-being?

In a preferred world, as described, for example, by economists at the Next System Project of the Democracy Collaborative, small businesses are started and run by individuals in the communities where they live. Their production decisions are shaped by their perceptions of gaps or needs that need filling, and by their perceptions of their own competencies and the available resources. This alternative world is fast slipping away, as more and more production

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is monopolized, while the monopolists expand their power to direct the activities of the smaller businesses.\(^{18}\)

It is not realistic simply to suggest that small businesses should be the principal makers of production decisions. A countervailing power is needed. When Galbraith used that term, he assumed that organized labor, i.e., labor unions, would be the countervailing power – but corporate power, with government allies, has broken the backs of the unions in the United States, and greatly reduced their power in some other parts of the world as well. Government is all the more needed – not to make the production decisions, but to change the system, countering power with power.

These are critical issues today. The terrifying reality that has emerged in the US during the Trump regime is the extent to which democracy can be subverted, to make it ever harder even for proposals that have wide popularity among the people (such as higher taxes on rich people and corporations) to be enacted into law. It is clear that there is corporate control of large parts of government in the US, including federal and state lawmakers, and the agencies that are supposed to control corporate activity. This is especially obvious in the continuing subsidies for fossil fuels\(^{19}\) by many governments around the world. If solar energy technologies had received anything like the money that has gone into R and D for fossil fuel (let alone nuclear) technologies, the development of sustainable energy systems would be far ahead of where they are today. Unfortunately the fossil fuel producers still possess great political power, through lobbying and other kinds of suasion of government officials.

A realignment of government, toward the good of the whole society instead of the benefit of the segment aligning with corporate profits, will be made easier when there are other pressures for change in corporate behavior. Some investors do seem to be lining up more on

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\(^{18}\) As examples, as of 2015 CVS controls 58 percent of the drug store business; Walgreens controls 31 percent; and Rite Aid controls 10 percent. (See https://www.openmarketsinstitute.org/learn/monopoly-by-the-numbers “Monopoly by the Numbers” Open Markets.) In the airline industry four companies—American, Delta, Southwest and United—control over 80 percent of the US market. (Koenig, Daving and Scott, Mayerowitz (2015). ‘Analysis: Consolidation of the U.S. Airline Industry Radically Reducing Competition’. https://skift.com/2015/07/14/analysis-consolidation-of-u-s-airline-industry-radically-reducing-competition.) The internet advertising space also exhibits significant concentration, with Google and Facebook earning 64% of all online advertising revenue in the U.S. (Gjorgievska, Aleksandra (2016). “Google and Facebook Lead Digital Ad Industry to Revenue Record.”) For a general discussion see Goodwin et al, 2020, Microeconomics in Context, Fourth Edition, Pg. 559

\(^{19}\) Public dollars flow to fossil fuel companies in many ways, including but not limited to:
- Special giveaways that exempt oil and gas companies from paying taxes on much of their foreign income and allow inappropriate deductions for fossil fuel development, exploration, and production costs.
- Research and development tax credits that encourage expansion of fossil fuel infrastructure.
- Lax financial requirements for cleanup of oil and gas wells that leave the public with the bill (if the wells get cleaned up at all).
- Below-market leasing rates, royalties, and fees that encourage further oil and gas development and exploit our public lands.

The International Monetary Fund has estimated the global total of a particular type of fossil fuel subsidies for 2017 – specifically “fuel consumption times the gap between existing and efficient prices (i.e., prices warranted by supply costs, environmental costs, and revenue considerations)” – at $5.2 trillion (an astonishing 6.5 percent of global GDP), noting that “Efficient fossil fuel pricing in 2015 would have lowered global carbon emissions by 28 percent and fossil fuel air pollution deaths by 46 percent, and increased government revenue by 3.8 percent of GDP” (Working Paper no. 19/89 downloaded 6-23-2021 at https://www.imf.org/en/Publications/WP/Issues/202019/05/02/Global-Fossil-Fuel-Subsidies-Remain-Large-An-Update-Based-on-Country-Level-Estimates/46509)}
the side of “environmental, social and governance” (ESG) values in business. Consumers, too, can have leverage, when they direct their purchasing away from companies that have especially bad reputations for environmental or social abuses. But if government continues to align with the interests of big business, those two forces together are almost unbeatable.

There is an important public education job here – to raise the level of societal awareness about the places where government actions, paid for by the taxpayers, are doing harm, and where they could do more good. That education should not be restricted to economics classes; however it has an important place there, in the reintroduction of the concept of political and economic power, which was removed from the neoclassical version of this discipline when the decision was made to canonize Adam Smith, but shorn of any ideas – such as power – that overlap with the work of Karl Marx.

Business ideologies and neoclassical economics have a more than half-century history of affecting and reinforcing one another. The values promulgated and practiced by the business sector will be much harder to change if change does not simultaneously occur in the content of formal education – economics, especially including the use of economic theory in business schools. For deep value recontextualization to occur, however, changes in business and in economic theory must be joined by systemic change supported by iterative and mutually supportive shifts in norms, occurring throughout all parts of society.

7. Economic theory and possible futures

Returning to the ideology of economic growth, we should not dismiss it as always immoral or irresponsible; it can be a noble goal when it aims to lift people out of severe poverty. But, as ecologists have pointed out, you cannot indefinitely expand a subsystem (economic activity, in this case) within a non-growing super-system (the natural world). In other words, global economic growth cannot continue forever; if, in today’s world, which has already reached and surpassed ecological limits, it is desirable for some economies to grow, others must shrink. We cannot continue, let alone expand, the consumption and lifestyle patterns of the richest 15 per cent of the world's people.

If we nevertheless wish to preserve the idea of GDP growth within an over-full world, one possibility is for the content of GDP to be radically redefined and reorganized. The money-flows represented in this measure need to represent an ever-larger proportion of intangibles, and proportionately (perhaps absolutely) less flows of material. That implies a continuation

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20 “Humans use as much ecological resources as if we lived on 1.6 Earths.” The Ecological Footprint compares the resource demand of individuals, governments, and businesses against Earth’s capacity for biological regeneration. See https://www.footprintnetwork.org/

21 Only a few economists have looked at the global economy with this in mind; one, from the early 1990s, was Alan Durning, with How Much is Enough? More recently Tom Athenasiou has written extensively on this subject. See for example EcoEquity: Global economic justice as the key to emergency climate mobilization downloaded 6-27-21 at https://www.ecoequity.org/2021/04/the-us-fair-shares-pledge-the-ndc-of-our-dreams/

and acceleration of the strong, 100-year trend toward production of services, along with
trends toward recycling, reuse and extended use. The goal here is to reduce extraction of raw
materials as well as the absolute amount of material moving through the economic system.

If this scenario is considered without some additional trends (mentioned below), the result will
be a higher labor content in most of what is purchased: services are generally more labor-
intensive than goods (relative to the inputs of energy and materials), and recycling and reuse
(with an implication of greater attention to repair and maintenance) imply increased inputs of
labor into every item over the course of its (much increased) useful life.

The paycheck-effects of a shift toward more labor-intensive production could be lessened by
a move to tax consumption, energy, and some raw materials, in place of taxing labor. This
would also hasten the substitution of labor and intelligence for materials and energy.
However, there are some thorns in this rosy picture. If production methods and/or the
composition of output are indeed altered to raise the labor input in proportion to energy and
materials, an inescapable corollary is that the relative price of labor must decline. This is
precisely the opposite to the most dramatic and important price trends that have held constant
for most of the period since the Industrial Revolution, when the price of labor rose because it
was paired with increasing inputs of energy and raw materials.

Here it is necessary to remember some other trends, e.g., towards reducing demand for
human labor via automation; this used to be less true in the service sector, but a growing
trend toward automation even here was accelerated during the Covid19 pandemic. The
overall trajectory of these combined trends could be one in which the quantity of output is
ever less dependent on the amount of all inputs except for embodied information. This an
aspect of manufactured capital which refers to the fact that all manufactured capital is not
equal: a fifth-generation personal computer can vastly outperform a first-generation PC, with
reduced inputs of many kinds in both production and operation; a high-tech windmill can
similarly be compared to an older model. The increase in productivity in these examples is not
due to more inputs but to better design – i.e., information embodied in the physical thing.

This combination of trends could lead to reduction in environmental harms, but it could bring
about a dystopia in which huge numbers of people are left destitute when economic survival
depends on a paycheck from work, and there is not enough work. Since in this section I have
been playing with relative proportions among types of “capital” (manufactured capital; natural
capital; and human capital, as translated into labor) I will add one other: systems capital,
which refers to the relationships among economic actors. This term is appropriately applied
to the quite new field of industrial ecology which attempts to put producers (and to some
extent consumers) into relationships (e.g., through physical proximity) that will allow economic
systems to imitate ecological systems. It also refers to the relationships between ecological

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23 A striking example is the system whereby restaurant customers use their cell phones to place their
orders and also to pay their bill. As wait persons are then only needed to bring the food this wipes out
myriad jobs that have been the stable recourse for young people in college, working in the arts, etc.

24 I believe that this term is used for the first time here. The definitions offered in the text are purely in
the economic context; the idea of systems capital could have other meanings if applied in fields such as
sociology, anthropology, or possibly ecology, given recently observed synergies among communities of
plants and microorganisms.

25 This field took off quickly with the establishment of the Journal of Industrial Ecology in 1997; the
journal Progress in Industrial Ecology (2004); and the International Society for Industrial Ecology
(started in 2001). Here are a few examples of the concept in practice:
systems and systems of economic production. Thus, in an application of industrial ecology, energy and materials are used with maximum efficiency; waste is minimized; the end of one economic process is the beginning of another; waste-products of one process are inputs to others. As a field of study, industrial ecology pulls in a multidisciplinary combination of engineering, sociology, economics, toxicology, ecology and other natural sciences.

Industrial ecology affords the opportunity to reconsider the balance between competition and cooperation in a healthy market system. As opposed to the standard picture of capitalism, as a system that works through the individual, unrelated efforts of each firm to maximize its own profits, industrial ecology depends upon the insight that many economic activities can be coordinated in a synergistic manner, so that the result is better than the result of uncoordinated action. In fact, such synergies have always existed in the relations between, for example, producers of final consumption goods and producers of intermediate goods. As multinational firms have become behemoths of size, it has been observed that they operate like whole cities of cooperation toward the goal of maximizing the firm’s profits, whether this is achieved by setting units within the whole to compete against one another, or to be truly cooperative. The importance of social capital is recognized as it supports relationships of trust, in reducing transactions costs in these relationships. In a setting of industrial ecology the addition of physical/chemical/engineering possibilities to the list of synergistic relationships among economic actors adds a significant weight on the cooperative side in the balance between cooperation and competition.

The ability to realize large (no one knows yet how large) agglomerates of economic activities interrelated through the principles of industrial ecology may be a social function that will require public inputs. It may also require some new social capital, in the form of a changed perception (i.e., changed norms and recontextualized values) regarding competition, cooperation, and the goals and the responsibilities of business.

Change in what we produce and consume is one aspect of the necessary future; as noted, the other aspect will probably entail revision in how, and how much, we work. In addition to issues of labor productivity, another issue of great importance — many centuries overdue for consideration — is the kinds of work that are most essential for human survival and well-being. These include: raising children; producing food; providing education to assist people to develop, exercise and explore their mental, physical and spiritual potentials; providing home environments that are pleasant, comfortable and sanitary, and that support self-actualization; supporting and maintaining physical and mental health in children and adults; providing care

(a) Kalundborg Eco Industrial Park in Denmark has existed for over 40 years. It was created by nine companies that decided to apply “a circular approach to production, in which one manufacturer’s residual waste provides resources to another.” See https://journeys.dartmouth.edu/envs3abinder/sample-page/kalundborg-eco-industrial-park/
(b) The Rizhao eco- Industrial Park in China, established in 1991, is similar to that in Denmark, above. In 2011, “through a combination of symbiosis and cleaner production practices, 98 percent of the industrial solid waste in the park was recycled.” https://www.greenbiz.com/article/lessons-chinas-industrial-symbiosis-leadership
(c) The Blue Marble Biomaterials and Anheuser-Busch Brewery partnership was announced in 2012. Blue Marble is a company that makes biochemical products, specifically targeting “high value flavoring and fragrance industries, which are ingredients in products such as bubblegum and shampoo.” The two companies signed a memorandum, agreeing that Blue Marble would “convert spent grains and biogas from the brewing process into green chemicals that can be used in other applications, such as food, cosmetics and personal care products.” See https://www.forbes.com/sites/ericagies/2012/02/22/anheuser-busch-to-join-industrial-ecosystem/?sh=3420209a4153
for those who are sick, old or otherwise unable to care for themselves; and maintaining and restoring the health of the earth's ecosystems.

There are (at least) three striking characteristics of the foregoing list: these activities already have a high labor content, in proportion to other inputs; they have generally been among the least well-paid (often unpaid) categories of work; and women have been the predominant workers in most of the activities named here.

The question was raised, above, about how to provide resources to individuals who may be left out of highly productive systems that reduce most inputs except the intangible ones of social capital, systems capital, and embodied information. Put another way, this is a question about how to share among all members of society the output (or the money) produced in such a system. For people interested in the care economy – or for most women – this is not a new question.

The discussion in this section has dealt with the delicate balance that is likely to be required between applications of new definitions of efficiency, including dramatic reduction in environmental harms; production of what is needed for a good society (including the essential work listed above); a fair distribution of the burdens of fulfilling essential needs; and fair, humane sharing of the output of a sustainable economy. The contribution of this paper is not a blueprint for how to achieve this balance, but a statement of the need for it, a discussion of some value shifts that seem required in order to move toward it, and a focus on what the discipline of economics can contribute toward such shifts. It is to this topic that I will now turn.

8. Values in economics?

A little semantics may be useful to start with.

- **Norms** are widely accepted assumptions that make it unnecessary for each individual to think through, in every instance, which contexts require the application of which values.
- One definition of **values** is the association of the ideas of good or bad – and the spectrum between them – that occur automatically to people when confronted with ideas, realities, behaviors, etc. In this discussion good and bad are best understood as positive or negative, not necessarily moral in connotation; they may concern what I perceive to be good for me, or in a context of achieving some particular (not necessarily moral) aim.
- The term, **ethics**, is often used to mean a collection of values in which good and bad do have a specifically moral tone.
- An **ethic** (in the singular), however, may be likened to a world-view; it summarizes a set of values and norms to serve as the magnetic north for a compass by which to set the overall course for an individual life, or for a society.

We are in global, social and environmental circumstances that call for a new ethic. Fortunately, at the same time, our current circumstances provide the foundation for such an ethic. The need lies in the fact that human actions are increasingly known to have consequences which affect others beyond the actors; metaphorically, we are all poisoning our neighbor's well, and we are all drinking our neighbor's water. The ethical foundations that
arise in conjunction with this need will be illustrated here by the statement of several rules, many of which will appear familiar, or intuitively obvious, or both.

One aspect of the intersection between ecology and economics – bringing together both evolutionary and moral imperatives – is the simple **Budgetary Rule**:

*In the long run, all economic and ecological actors must live within budget constraints; these include the communal planetary budget constraint, as well as those faced by each individual.*

In principle, nothing in economics denies the budgetary rule. However, it may be found to be in conflict with another economic imperative – an **Investment Rule** that may be stated as follows:

*It only makes sense to invest in activities where the present value of the payoff is at least as great as the present value of the resources invested.***

When this investment rule is applied to environmental issues where the payoff (e.g., the benefit of retaining the protective ozone layer, of preserving productive soils, etc.) is often far out in the future, we run into the fact that the economic approach to investment involves discounting over time. In this procedure economically calculated costs and benefits are reduced by ever larger proportions as they are projected further into the future. Thus an event of fifty years hence, of almost any magnitude, is discounted down to insignificance in present calculations – while present costs are relatively easy to ascertain. At the beginning of this century some neoclassical economists, looking at the figures, concluded that it was not worthwhile to do much to avert global warming; the present discounted value of whatever happens in the year 2050 just did not warrant it. Now, of course, we are not only two decades closer to mid-century; we are also much, much closer to – already well into – the disasters of climate change.

One of the functions of ethics is to codify practical realities that are too subtle or complex to be thought through afresh in each individual instance. The practical reality to be addressed here is the fact that the future of the human race – including the fate not only of my grandchildren, but of his, and hers, and also yours – is bound up with the health of something much larger than any one of us; something which can be named the Earth’s ecosystem. (Some people prefer a personification, and call it Gaia.) Increasing awareness of this ecological interconnectedness suggests that it is often inappropriate to apply the economic Investment Rule to issues involving ecosystem health.

Rather than inventing something completely new, I propose that we find a way of uniting two old rules that may, on the face of it, appear unrelated. The first is a simplified **Evolutionary Rule**:

*Survival is the first objective.*

The second is Christianity’s familiar **Golden Rule**:

*Do unto others as you wish that they would do unto you.*
When “others” include Gaia, these meet in an Environmental Rule which says:

Do what is necessary to preserve the health of the ecosystem, for your own survival and wellbeing depends on it.

It is a nice coincidence that everyone else’s survival depends upon the same thing.

It is not enough to have a new ethic, or new “rules”; it is necessary to assist people to shift their understanding of which value contexts fit which social issues. This is not so much a matter of learning new values as of learning new ways of applying them. There is, in fact, more likelihood of many interlocking changes in mental models taking place than of just one occurring in isolation.

9. Coda: an alternative economic theory

The question is not whether economics should be value-free; if, as is increasingly recognized, not even the most “hard” sciences are completely value-free, then economics, a science whose entire subject is human beings – their wants and their activities – can hardly be expected to be free from the values of the theorists in the field as well as of the human subjects. And, in fact, throughout the twentieth century the discipline of economics has played a major role in shaping values. As noted at the outset, economics education has provided mental models that ignore issues of power and powerlessness, elevate selfishness, denigrate government in favor of markets, disregard any intrinsic values in work, and agree that consumption is the primary goal for individuals, to be reached by constant growth in macroeconomic output.

20th century economics did not have to move so far away from both ethics and realism. When we look back we can see the voices of dissident economists raised again and again, and consistently squelched, as the discipline turned away from relevance and toward a narrow conception of rigor. Increasingly, the incentive and reward system of mainstream economics departments selected, for graduate training, individuals whose chief strength is in mathematics, while broader interests in the implications and applications of the field had, if anything, a negative effect on the student’s chances for successful completion of an economics doctorate. Each year the graduates of these programs are, on the whole, narrower in their interests and their knowledge than the existing practitioners in the field. As the narrowest of them are, in turn, the ones likely to be selected for academic promotion and tenure, mainstream economics has progressively turned its back on subjects that other people think should be important to the field.

Here is where the neoclassical insistence upon claiming value neutrality is most evidently harmful to the evolution of the discipline. Economists who feel free to admit to values as critical elements in their work have a strong link to relevance: they can ask such questions as, “What is the purpose of an economy? By what standards do we judge a better versus a worse economy?” As economists drawn to such questioning have been removed from the mainstream there has been a growing “outer circle” of economists who have been denied the more desirable opportunities to teach and do research or who have voluntarily declared
themselves as outsiders because they simply could not agree with some essential mainstream tenets.26

Starting in the early 1990s I have worked with a number of great colleagues to develop a full alternative that we call contextual economics27. The name comes from our conviction that an economic system can only be understood when it is seen to operate within a social/psychological context that includes values, ethics, norms, motivations, culture, politics, institutions, and history; and a biophysical context that includes the natural world as well as the built environment.

The starting point for our contextual economics textbooks is an inquiry into goals: What are the appropriate goals for an economy? And, relatedly: What are the appropriate goals for the discipline of economics? Contextual economics emphasizes that most traditionally understood economic goals – efficiency, maximizing production or consumption, earning money – are best understood as intermediate goals, that is, means to other ends. The relevant final goals might include, for example, the satisfaction of basic physical needs (e.g., for food, water and temperature regulation; happiness (including a good balance of comfort and stimulation); self-respect and the respect of others; self-actualization and a sense of meaning; fairness in the distribution of life possibilities; freedom; democracy and participation; and a natural environment that supports healthy human life. These may be summarized as well-being. The scope of consideration is all humans, in the present and in the future, and regardless of the extent of their involvement in market transactions.

In defining the economy contextual economics adds to the traditional trio of “production, consumption and exchange” a critical fourth function: resource maintenance. This includes upkeep of manufactured capital, maintenance and enhancement of a healthy stock of natural capital, and many of the kinds of work listed above as most essential for human survival and well-being. It may be that it was because this work is so often performed by women that resource maintenance has not previously been included in the list of essential economic functions; indeed, it was a leading feminist economist, Julie Nelson, who, as a collaborator on contextual economics textbooks, introduced this concept.

A focus on caring labor and on the nonmonetized, cooperative economies of households and communities inspired in contextual economics a structure that organizes discussion of a modern economy in three spheres:

- The **business sphere** is composed of profit-oriented firms, which, however, contain other important motivating forces beside the drive to maximize profits. It is worth noting that corporate charters were at one time granted on the assumption that corporate activities would promote human well-being. This concept is often forgotten, but the potential remains for it to be revived.
- The **public purpose sphere** is composed of governments and non-governmental organizations (NGOs). Like firms, they use money as the principal (though not the

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only) medium of exchange for procuring labor. Unlike firms, they have an announced goal of advancing the well-being of some defined portion of society, and do not have shareholders or owners to whom they must return a profit.

- The core sphere is composed of households and communities. Their principal use of money is for exchanges with the other two spheres. The motive for economic behavior in the core is the survival and well-being of individuals: self, family, and other community members. The resource-maintenance activities of the core sphere include the work that develops and maintains human capital. For children, that means nurturing, nutrition, basic education, and socialization; and for those already in the workforce, it means the refreshment of mind and body and spirit for enhanced health and vigor.

A balance is required between simplifications imposed for the purpose of making sense of the economy, and attempts to recognize the actual complexity of the world. Contextual economics aims to pull this balance somewhat away from methodologies that require extreme simplification, towards a richer understanding of the nature of economic actors and economic activity. This has required a broader conception of “the economy,” to include economic activity that occurs not only in the business sector, but also within households and communities, and in governments and other public purpose organizations.

Such a broader conception, accompanied by appropriate value shifts, is essential in an era when climate change, as well as shortages of clean water, fertile soil and other natural resources, make it evident that if our economies continue in the direction they are going we are headed for catastrophe. There is a clear need to move away from the currently dominant mental models, towards new ones that give primacy to human well-being and the health of the Earth’s ecosystems as the ends to which wealth is only one of many means – and may not always be a desirable means.

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Beyond the growth imperative and neoliberal doxa: Expanding alternative societal spaces through deliberative citizen forums on needs satisfaction

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Abstract

Are there indications for the neoliberal hegemony in economy and society to come to an end? Are people already imagining a future within environmental limits and beyond the growth imperative? Theoretically, building upon Marx and Bourdieu, we reconstruct the ideological impact that capitalism, in general, and neoliberalism, in particular, has on the ways we think, feel and make sense of our environmental and social context. Empirically, we analyse qualitative data from eleven deliberative citizen forums on needs satisfaction that we carried out in 2020 in Sweden. Theoretical and empirical results point to a weakening of capitalist and, particularly, neoliberal ideology. In the forums, this became obvious in the discussions of critical issues such as space use, labour market-generated inequalities, societal norms regarding upward mobility and individual ideas about career and happiness. There is furthermore significant intersection between what researchers recommend in terms of “eco-social” policy measures to initiate transformational change and what citizens view as necessary in this respect. Since deliberative citizen forums can provide opportunities of critical reflection and imagining alternative ways of satisfying fundamental human needs in sustainable ways, they can play a valuable role in the more general effort of igniting “counterfire” (Bourdieu) to neoliberalism and developing postgrowth economies and societies.

Keywords: capitalism, neoliberalism, degrowth, alternative societal spaces, deliberative citizen forums, Sweden

Introduction

Are there indications for the neoliberal hegemony in economy and society to come to an end? Are people already imagining a future within environmental limits and beyond the growth imperative? We approach these issues both theoretically and empirically. Theoretically, we examine the ideological impact that capitalism, in general, and neoliberalism, in particular, has on the ways we think, feel and make sense of our environmental and social context. Building upon Marx and Bourdieu, we analyse how economic categories and corresponding social relations of capitalist production and consumption relations are reflected in our consciousness, and also ask which particular features these ideological forms took in the neoliberal era. Furthermore, we assess some of the economic, social and ecological crisis factors that this order is confronted with. Referring to heterodox economics approaches, we discuss features of a post-neoliberal and postgrowth future as well as “eco-social” policy elements that researchers highlight to facilitate corresponding transformational change. Empirically, we complement this academic perspective with qualitative data from deliberative citizen forums on needs satisfaction in Sweden.

The article is structured as follows: We start from a consideration of the ideological impact of capitalism and neoliberalism and characterize the multidimensional character of its crisis; second, we briefly examine critical research agendas relevant for the formulation of post-neoliberal economics with a focus on contributions from degrowth/postgrowth and sustainable welfare circles, generally outlining a provisioning economy for the satisfaction of fundamental
human needs; and third, we present qualitative empirical results from eleven deliberative forums on needs satisfaction in Sweden. The discussion and conclusion sections reflect on the theoretical and political implications arising from the data interpretation.

The ideological impact of capitalism and neoliberalism

Marx’s *Critique of Political Economy* (Marx, 1990) demonstrates not only why any capitalist economy is structurally bound to expand but also how specifically capitalist economic categories and social relations are reflected in the actors’ minds. The historically specific mode of transfer of surplus labour is hidden by a “stepladder of mystifications” (Koch, 2018), as a result of which capitalism appears as the natural and eternal way of organising “the” economy. The “topsy-turvy world” of the “trinitary form” (Marx, 2006, ch. 48), where wage labour contributes to societal wealth on the same footing and in functional harmony with profits and rents, is the structural, albeit hidden, background for the widespread idea that the provision of economic growth is beneficial to all, including to those who contribute to it through work. The corollary is the illusion that the more one works the greater will be one’s share in societal wealth. Core societal values and orientations such as “achievement”, “upward mobility” and “social position as the result of one’s own work and merits”, which are of crucial significance for hegemony, stability and maintenance of the growth paradigm, turn out to be socially valid forms of thought that result from the objective inversions inherent to the capitalist production and accumulation process.

The conversion of specifically social and economic categories into features of things and nature finds its continuation and completion in consumption and culture (Bourdieu, 1982). The cultural sphere is a site of symbolic struggles over the societal acceptability of lifestyles in which dominant classes manage to maintain a hierarchy of cultural forms that subjects all consumptive acts to the legitimate taste, that is, their own. This classification process is “objective” and effective insofar as it operates largely independent of the (manipulative) intentions of dominant groups, who are themselves subject to the distortion of social into natural forms. While members of the middle and working classes may eschew legitimate cultural practices, or regard them with suspicion and disdain, the position of the dominant class at the pinnacle of the cultural hierarchy normally goes unchallenged, because it appears to be built upon ease, casualness and natural superiority. What Hirsch (1976) called the competition for “positional goods” is mediated through a genuinely social logic that Bourdieu refers to as “distinction”, perceived as natural differences. The naturalization of the specifically capitalist character of production and consumption relations is, hence, a general feature of all capitalist economies, yet perceived as rational interactions of autonomous market subjects (Bourdieu, 2005). Economic growth appears to be the ideal breeding ground for upward mobility and progress and in everyone’s interest. With regard to production relations a strong work ethic seems to be a worthwhile and rational individual strategy, while in consumption growth guarantees the creation of ever new generations of consumer articles, which are the material basis for individual distinction.

In the neoliberal era, growth imperative, work ethic and consumption cult came to be especially accentuated (Herkommer, 2004). David Harvey (2009, pp. 19-23) recalls the rise to economic and political hegemony of what started as the Mont Pelerin Society named after the Swiss spa where the group originally met. Starting in the late 1940s, this exclusive group assembled non-mainstream political philosophers such as Friedrich von Hayek and Karl Popper and economists such as Ludwig van Mises and Milton Friedman. Beginning with the monetarist
reforms of the Chicago Boys in Chile in the 1970s and further developed in the “austerity” and “supply”-oriented programmes by the governments of Margaret Thatcher in the UK and Ronald Reagan in the US, the neoliberal perspective successfully usurped previously predominating Keynesian views within economics and wider society. By the early 21st century, its ideological impact had become so strong that Bourdieu et al. (2002, p. 182) likened the symbolic power of neoliberalism to that of the Catholic doxa of the Middle Ages: serving as pensée unique and providing natural solutions for all kinds of social and ecological issues.

However, the impact of corresponding think-tanks, which relentlessly preached and amplified the neoliberal perspective on policymakers, students (not only) of economics and the wider society could only become efficient and seemingly without alternative as there is a certain readiness for collaboration, or a degree of practical consent, on the part of those who are exposed to power and symbolical violence. Indeed, social structures such as the growth imperative and the neoliberal ideology are inscribed not only in the “ideas” and the “minds” of the dominated, in their mental representations, but also in their bodies, in their “schemes of perception and dispositions (to respect, admire, love, etc.), in other words, beliefs …” (Bourdieu, 2000, p. 171). Values at the heart of neoliberalism such as status, achievement and individual competition and the firm belief in “market solutions” for problems as different as poverty, health or climate change are profoundly inscribed in the ways we think and feel.

The multidimensional crisis of neoliberalism

According to Bourdieu (1991), the normally strong association between social structure, habitus and practice breaks during a crisis. At this point, the chances of alternative ways of thinking and acting becoming hegemonic increase, facilitating the transformation of the economic, political and cultural structures of society as well as their corresponding symbolic systems. Crises can first take the form of a crisis within the ancien régime: the institutional structure of the old social order turns out to be flexible enough for the actors to enter new kinds of alliances (on welfare and social inclusion, for example), that is, without questioning its fundamental principles. Hence, the social order, including its corresponding values, habitus forms etc., is maintained on the basis of some gradual or incremental change (Mahoney and Thelen, 2010); second, crises can take the form of a crisis of the existing social order. Its institutional structure turns out to be no longer capable of giving a realistic future perspective to satisfying the needs, wishes, and future expectations of a majority of citizens. The historic specificity of social relations, which is normally taken for the natural order of things and goes largely unquestioned, becomes transparent, and the simple formula of societal reproduction according to “doxa” – structure-habitus-practice-structure – ceases to apply. The habitus stops generating social practice and is gradually replaced by other organization principles such as rational calculus and conscious action (Bourdieu, 2000; Koch, 2020a). However, as already Gramsci (1971) observed, while alternative discourses and heterodox social forces gain ground during a crisis of the social order so do those that opt for its authoritarian defence, which may include the marginalization or abolition of democratic institutions and civil rights. Crises are hence open situations that can be “sorted” in various directions.

Much evidence suggests that the neoliberal regulation of capitalism has resulted in a multidimensional crisis which is unlikely to be resolved under the present institutional arrangements (Buch-Hansen, 2018) and features at least four dimensions. First, while the negative economic and social consequences of the 2008 financial crisis are not yet overcome, a new financial crisis is already looming (IMF, 2016: 1). Political economists such
as Gordon (2016) take the associated massive levels of public and private debt as a strong “headwind” for the promotion of future material prosperity. Second, massive and growing inequality has resulted in a social crisis that leaves growing shares of the population in the rich countries unable to satisfy their basic needs (OECD, 2015), while the wealth of the richest household groups continues to surge. Third, climate emergency and environmental crisis (Gills and Morgan, 2020) undermine current and future living conditions for human beings and other species and threatens to end human civilization as we know it (IPBES, 2019). Finally, there is a crisis of political representation (Crouch, 2016), culminating in events such as Brexit and the elections of populist leaders in a range of Western democracies.

Whether the crisis of the neoliberal economic and social order will eventually be overcome via a social-ecological transformation is far from certain. This is because the crumbling of an established social order has historically only rarely led to its replacement by heterodox thought and practice. More often than not, a crisis resulted in a new kind of orthodoxy where dominant interests are defended by replacing democratic rule by authoritarian rule and the use of force. To ignite the societal “counterfire” (Bourdieu, 2003) from below to prevent authoritarian crisis “solutions” from the top-down, it will be necessary to forge ideas for both single ecological and social policies and their synergy in the short and long-term, involving bottom-up civil society mobilization. To achieve a maximum in societal support for such policies, Gough (2017) suggests a “dual strategy”, combining the codified knowledge of various sorts of researchers with the practical knowledge of citizens. Applying this strategy, we briefly review some relevant heterodox and post-neoliberal variants of economics (“codified” knowledge) and then present insights from deliberative citizen forums on an alternative economy and society in Sweden (“practical” knowledge).

Towards a political economy of a post-neoliberal and postgrowth era

There is range of new beginnings united in the attempt to provide heterodox economics that consider the environment systematically in postgrowth contexts (Koch and Buch-Hansen, 2020). Approaches such as that of “diverse” and/or “local” economies by Gibson-Graham (2006; 2008), ecofeminism (Mies, 1998; Salleh, 2017) and the emerging “political economy of degrowth” (Chertkovskaya et al., 2019) are oriented at the totality of economic activity, that is, including those activities that are currently not or only marginally tied to the production of monetary value and economic growth and instead promote values such as “care, cooperation, mutual aid, solidarity, conviviality, autonomy” (Chertkovskaya et al., 2019, p. 4). Also Koch and Buch-Hansen (2020) point out that a political economy in keeping with the times should start from an analysis of how various economic categories and forms of work became structurally valued, undervalued and combined in the present economic outlook (Castree, 1999). Studies on how different economic activities are linked to corresponding principles of domination – particularly those of class, gender and ethnicity – and how the latter intersect in particular conjunctures and social positions should be intensified. This could facilitate the identification of openings for alternative economies to be upscaled from niches to centres, including re-interpretations of the institutional forms central to capitalist regulation. On top of alternative understandings of work and money, these institutional forms include the firm (Nesterova, 2020; Hinton, 2021) and the state (Koch, 2020b).

In general, there is agreement in growth-critical circles that in order not to break planetary boundaries, economic and social policies would need to be redesigned away from an orientation at economic growth and exchange value towards a provision of use values
suitable to meet basic human needs (Koch and Mont, 2016; Fullbrook and Morgan, 2019). Needs are being met in economically, culturally and ecologically different ways (Max-Neef, 1991; Guillén-Royo, 2015). Not only are maximum and minimum levels of need satisfaction empirically identifiable, human needs approaches resonate also well with ecological economics, emphasizing the imperative for human societies to operate in a space between planetary or upper and sufficiency or lower development levels. Especially degrowth and sustainable welfare research (Büchs and Koch, 2017 and 2019) is increasingly oriented towards identifying political measures that could help bring Western matter and energy throughputs in production and consumption patterns below the level of critical planetary limits and above the sufficiency level required to meet people's basic needs (Koch, 2021). As a corollary, the economy as a whole would be conceptualized as subsystem of the planetary and social systems and grasped as "provisioning system" (Fanning et al., 2020) for sustainable need satisfiers.

In relation to planetary or "upper" boundaries, economic and fiscal policies would not anymore take the relatively unproblematic form of redistributions of growing tax takes (as in the postwar period), but involve controversial decisions targeted at the power resources and material interests of the rich and influential, for example, in the form of caps on wealth and/or income (Buch-Hansen and Koch, 2019). In relation to the sufficiency or lower boundary, proponents have suggested the introduction of a universal and unconditional basic income (Van Parijs and Vanderborght, 2017), the expansion/introduction of universal basic services (Coote and Percy, 2020), a voucher system (Bohnenberger, 2020) or a combination of the three. Concrete national shapes of these policies are likely to reflect path dependencies such as welfare regime affiliation and may, if properly integrated, take the form of a sustainable virtuous policy circle (Hirvilammi, 2020).

Irrespective of the degree of academic sophistication of such proposals, these will only reach critical amounts of societal support, if they do not overburden people's experiences and future expectations (Koch, 2020a). One way of avoiding this – and expanding societal spaces where neoliberalism and the growth imperative ceases to occupy people's minds and bodies – is to co-imagine alternative economies and co-develop policies bringing about transformational change via deliberative citizen forums (Lindellee et al., 2021). As we argue next, these provide opportunities for mutual learning between researchers, activists and citizenry.

**Deliberative forums on needs satisfaction – background and method**

Deliberative citizen forums are one of the popular methods employed in an attempt to create collaborative and constructive arenas where new ideas for sustainable futures can be borne out (Jolibert et al., 2014; Smith, 2012). Not only scholars interested in action research, but also local and regional municipalities as well as non-government organizations have employed various models of deliberative forums in recent years. The aim of the eleven citizen forums conducted in Sweden during 2020 was to collect policy proposals anchored in the practical knowledge of citizens on sustainable needs satisfaction. In total 84 individuals participated either in person or digitally in discussions about how we satisfy our fundamental needs today, and how this could be done in more sustainable ways. We used Max-Neef's Human Scale Development (HSD) methodology (Max-Neef, 1991; Guillén-Royo, 2015; Temesgen, 2021) in order to address nine fundamental human needs (subsistence, protection, affection, understanding, participation, idleness, creation, identity, freedom) with a
focus on four policy areas with central significance for the participants’ daily life: housing, transport, food, and work.

A core idea of Max-Neef’s Human Scale Development as a framework for drawing visions of transformational change is the distinction between fundamental human needs, which are understood as universal across time and space, and needs “satisfiers”, which differ depending on specific historic, social and cultural contexts. Forum participants discussed “positive” (or “utopian”) and “negative” needs satisfiers respectively, and then deliberated on “bridging” satisfiers oriented at actions and measures to achieve the utopian future from the status quo. Needs satisfiers may range from characteristics, attitudes, actions, norms, institutions, policies, physical environment or infrastructures and be operationalized at different scales (at individual and/or collective but also local, national or transnational levels). Furthermore, “synergetic” satisfiers denote needs satisfiers that can fulfil multiple needs at the same time, operating as a sort of catalyst for organic chains of change. Lastly, Max Neef also identified so called “pseudo” satisfiers that at best temporarily satisfy our needs in the short time and actually threaten or undermine long-term needs satisfaction. Hence, this terminology aptly conceptualizes the possibilities/potentials that can be mobilized in envisioning postgrowth transition processes on the one hand, and the pitfalls and vicious cycles that may impede transformational change, on the other hand.

Table 1. Needs-matrix by Max-Neef (1991) [slightly modified and contextualized by authors]

<table>
<thead>
<tr>
<th>Being: Physical and mental mind-set - Individual or collective</th>
<th>Having: Social structures, policies, norms and attitudes</th>
<th>Doing: Individual or collective actions</th>
<th>Interacting: Physical places and the social environment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nutrition and health</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Protection and support</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Proximity and love</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Understanding and knowledge</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Participation</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Idleness and rest</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Creating</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Identity and affiliation</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Freedom and independence</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

From each deliberative forum conducted, the resulting data material consist chiefly of the needs-matrices, notes taken during the meetings, and video files recording the meeting. Table 1 is the needs-matrix proposed by Max-Neef (1991) and modified by our research team. The exact wording of the nine fundamental needs is slightly different from the original work, as some precision and additional information was needed during the translation into Swedish. In the final version, filled-in matrices about positive, negative, and synergetic
satisfiers were written down and were colour-coded for clearer identification of each type of satisfier.

The goal of the citizen forums was to serve as a venue for creating alternative ideas for needs satisfaction that are ecologically and socially sustainable. The idea was not to recruit participants in order to maximize representativeness of certain social groups in a given geographical area; rather, we made practical decisions as to who could participate in the forums by considering that (i) it is easier for participants to deliberate freely when working with already established groups and social relations with each other, and that (ii) it is a hugely demanding task to participate in a whole-day workshop which is by no means feasible to all social groups. Although we deliberately did not collect any demographic or educational backgrounds of the participants, it is safe to say that many of our forum participants were highly educated urban dwellers with relatively flexible jobs and with some experiences of having been involved in community organizations of various kinds, such as community development and the green transition movement. Some exceptions include our forums held with teenagers participating in a community education program, a social enterprise based in a “minority”/“marginalized” neighbourhood, and with a local community organization for people without employment. Of the eleven forums, four did not have any established group members as participants but consisted of individual volunteers who responded to our open, on-line recruitment. These meetings were characterized by a wider range of occupational groups as well as geographic areas being represented by the participants. The number of participants varied between as few as four in one meeting to 18, but mostly between five to seven people. From the research team we had one moderator, one taking notes, and two assistants who were filling in the needs-matrix generated from the discussions. Each meeting lasted about seven hours, including a lunch break.

As we launched our deliberative forums at the very beginning of the Covid-19 pandemic, the majority of our discussions had to be held in a digital format (via Zoom). It was however not only the format of the forums that was affected by the pandemic. As an exogenous factor affecting many fundamental aspects of our daily lives, the crisis of the existing order spurred by the ongoing pandemic provided an extraordinary chance for critical reflections and openings for challenging ideas.

Next we introduce some of the prominent themes and policy proposals that were discussed during our forums. These resulted in a master-matrix consisting of around 1,600 unique entries of “needs-satisfiers” that can be systematized and categorized in numerous ways depending on a given research question. For this special issue, we have selected the themes and policy proposals that are most relevant for imagining postgrowth and post-neoliberal economics and present these with short illustrative quotes taken from our meeting notes. The themes include the following: “Questioning the growth imperative”; “call for the sufficiency principle”; “decommodification”; and “revitalizing communities and democracy”.

### Imagining post-neoliberal and postgrowth economics and society

#### Questioning the growth imperative

One prominent theme of our deliberative forums was the critique of the growth imperative of our time. Participants acknowledged the sheer fact that we cannot afford the unlimited pursuit of an economy geared at endlessly expanding matter and energy throughput and at the
expense of the earth’s ecological boundaries, while social minimum standards are not being met. Especially during the discussions about how we sustain ourselves and how food is produced and distributed around the world, the growth imperative (and the food industry as a part of it) was often identified as lying behind many of today’s structural problems. It was argued to sustain a system based on the profit motive and short-term economic interests rather than the long-term need for sustainable nutrition.

“We know that we need to move away from the big, industrial agriculture. But towards that direction there is not much change going on in both regulations and in policy work. The market fundamentalism is a real obstacle for small-scale farmers trying out new ways of producing our food.”

“We need to distinguish abstract, economic interests from our actual needs and balance the profit-making activities with local needs.”

As alternative models of economy, participants proposed more locally organized units for production and distribution of goods and services, within a bounded space and with a limited number of people engaged in such communities. More concretely, local currencies or vouchers that could be utilized to vitalize local economies based on the needs of residents were proposed, as well as community infrastructures enabling the sharing of goods and services.

Another critical argument against the growth imperative was articulated by multiple participants in discussing our working lives. Especially when the needs such as “proximity and love”, “idleness and rest”, and “identify and affiliation” were discussed, participants talked about the ways in which the overarching economic growth-imperative at the system level affects not only our working lives but also our capabilities of self-perception and understanding.

“We need protection against the brutal growth-fixated society, its hysterical consumption culture, exploitation of materials and resources, do-not-look-back mentality, and the message that you are not enough as who you are now, but you need to become something else - all of which leading to a brain-washing effect for many of us.”

“The society is built on the assumption that we are not supposed to be idle. Through the career ladder, status and salary differences we are taught to become something else than ourselves, we are not good enough as we are now. It creates dissatisfaction leading to careless consumption and we do not reflect on what kinds of social conditions we live with and reinforce.”

Still other aspects that came up in the forums in relation to the growth imperative had to do with the consequences that such a lifestyle (i.e., focusing on upward mobility and achievement/merits valued in the market economy only) brings about:

“Adults that are utterly obsessed with saving time have no time for jokes or unnecessary stuff, no time for conversation with each other. We give our life to something else. We are supposed to be in production of something all the time. A neighbor who comes by and wants to talk is perceived as a stress
factor. I don’t like to be ‘effective’, but I try to be all the time, at the expense of social relations.”

As concrete policies aiming at a better-balanced working life as well as harnessing excessive consumption behaviors, participants proposed the following: introducing advertisement free-zones in public spaces; reducing working weeks/hours; rewarding employees with more vacation days instead of monetary remuneration.

**Calls for the sufficiency principle**

Another relevant theme for imagining post-neoliberal and postgrowth economies in our deliberative forums was focused on the sufficiency principle. Participants critically questioned the ways in which we put upward mobility at the centre of our occupational lives, and pointed out that this contributes nothing to help satisfy some of our fundamental needs such as participation, creation, or freedom. Contemporary ethics and norms around our working life were also questioned in discussing our need for idleness. Many argued that the consumption culture goes hand in hand with our cultural practice to prioritize wage-labour, at times excessively, at the expense of other types of work – care, especially – in which we are currently engaged in without remuneration and despite the fact that the latter may have greater satisfaction potential in relation to needs such as participation, creation, identity and freedom.

“We have to change the idea that everyone has to be high-performing in all aspects. We have to slow down. Everyone, with the capacity that today is perceived to be deviant, should rather be the standard that we work together with.”

The proposition that we need to slow down and accept limits was also highlighted as a precondition to actually recognize our genuine needs rather than artificially manufactured and promoted wants by commercial interests.

“We live in a capitalist society where there is no limit to our growing wants. We need to take breaks to have time to reflect on what our actual needs are.”

This line of reasoning was elaborated also in relation to the consequences of the Covid-19 pandemic, in that the current crisis could open up for an opportunity where we could understand, appreciate and finally apply the sufficiency principle.

“Many sectors that facilitate unnecessary consumption may disappear. We’ve got a chance to reflect over our fundamental needs and learned that we could satisfy many of them with a reduced level of activities, speed, and material use.”

Furthermore, discussions around the sufficiency principle included a questioning of the acceleration of communication technology and its focus on speed. As a concrete example, several participants raised a doubt as to the need for the introduction of 5G mobile network.

“A message from a tele-company X is that we need to have 5G network if we are to succeed with the climate transition – but what does that even mean? We do not question the materialistic view when we are promised that we can
save time and our daily life becomes easier and more convenient. It is an ongoing myth-building about automatization at the expense of close relations with others.”

Some concrete policy proposals that were mentioned and motivated from the perspective of the sufficiency principle include the following: forbidding advertisement in public spaces, limiting the use of electricity, limiting living space per person, reducing working hours/days, introducing maximum income and concentration of wealth.

When it comes to the idea of maximum income, arguments presented were about re-commoning excessive private profits/assets in order for a broader population to benefit from basic needs satisfaction. The need for tackling inequalities was also argued from the perspective of social cohesion.

“Today you can hoard money without any limits but this affects our identity and feelings of social belonging and community. Social cohesion does demand a certain level of economic equality.”

Another argument for limiting wealth accumulation was that wealth concentration and private ownership of public infrastructure such as collective transportation or housing prohibit many people from satisfying their fundamental need for protection. The sufficiency principle was also mentioned in discussing the last need in our needs-matrix, freedom.

“Acceptance of the limits we have might be a good way to feel actually free.”

Decommodification

Decommodification was yet another frequently highlighted theme. One participant described money as a pseudo needs satisfier for everything in a capitalist economy, illustrating the extent to which almost all aspects of our lives have become commodified – with the consequence that many of our fundamental needs are currently mediated through monetary transactions. Many participants critically reflected on how commercialization and commodification of the ways in which we satisfy our needs prohibit relation building as well as any sense of belonging.

“We rely on purchased services rather than on interpersonal relations that could be in support for ourselves. I offer my frail elderly neighbours to buy food but they’d rather choose paid-services. We stop interacting with each other when we can buy transactions that we need for our survival. My affluence isolates me! We are very much dependent on technologies, institutions, and the market - but not so much on other people.”

Universal basic income was proposed by numerous forum participants, especially in contexts where our needs for participation, protection and support, freedom as well as idleness were discussed. The proponents stressed the ways in which guaranteeing a basic level of sustenance for all could positively change our society, not only in the meaning of guaranteeing basic need satisfaction but also in enabling an environment that encourages the realization of the full potentials of individuals.
“There is a very strong paradigm and norms revolving around wage-labour and career, which can be an obstacle for many people to be integrated, to participate, to feel secure and to act in democratic ways in our society. Introducing basic income requires shifts in our mentality.”

Decommodification was furthermore taken up in relation to providing non-commercial alternatives. When discussing the need for participation, many forum participants called for an expansion of non-commercial, communal meeting spaces as well as cultural activities, which do not exclude people without money, as important preconditions for creating engaging and vibrant local communities.

“Commercial logics steer how we design our public spaces, including the online platforms that are becoming ever more important. We need to redesign our physical spaces for more interactions with each other, rather than excluding people.”

The list of areas in relation to which forum participants called for decommodification and de-privatization is much longer and includes healthcare, schools, public transportation, housing, and financial services (where interest-free loans were mentioned especially often).

**Revitalizing communities and democracy**

One unexpected (as we initially focused on food, housing, transport and work) yet reoccurring theme throughout our deliberative forums was centred around democracy, or rather “democratizing democracy”. Numerous participants emphasized the role of education in democratization, not only in schools but also throughout one’s entire life course. Many called for educational efforts focusing on our role as democratic citizens and active political subjects, which could lead to vibrant and critical practices of collective reflection, deliberation, and have an impact on transformation processes towards sustainable societies. The argument was presented as a caution against the belief that change processes towards a postgrowth society can be managed in a top-down manner only; instead, for this to happen it was argued that broader bottom-up mobilizations and collective actions were necessary prerequisites.

“We’ve been indoctrinated through our school system that the society always becomes better, that economic growth is important, and that it is important that we survive and outperform others in the global competition. But what we need is more collective actions and being a part of meaningful communities, not more individualism and self-realization. We need good institutions, but also people near us that could support each other, breaking up with anonymity and isolation.”

While stressing the importance of encouraging citizen participation at local levels and, specifically, in deliberative and collaborative forms, some concrete ideas for facilitating such citizen involvement included: one-year sabbatical for being engaged in community organizations (“free-year”); local vouchers as compensation for engaging in voluntary work (e.g., bus cards, gift cards at local stores); and allowing the unemployed receiving benefits to engage in voluntary work without being penalized.
Structural inequalities were once again identified as significant obstacles for achieving critical amounts of a sense of belonging and social cohesion, which many participants viewed as a precondition for widened citizen participation.

"Ever intensifying power and wealth concentration that a minority owns most of our resources and wealth - it challenges democracy. A more democratic society means less difference between individuals."

Furthermore, variants of deliberative processes were advocated as an important complement for the current institutions of representative democracy. As hands-on proposals, participants mentioned food gatherings in neighbourhoods, infrastructures for sharing economy, and community gardening as well as collective forms of housing, where people can interact more closely, including across generations. This line of discussion may be understood as a counter-argument against the neoliberal ideology and its tendency to responsibilize individuals for structural problems.

Last but not least, many participants reflected on the difficulties in engaging with socio-economically weaker groups and ethnic minority communities.

"There are many people who do not feel welcome because they don't have formal education, because of lack of social and communication skills, etc. Learning to do democracy takes time. Hope for the newer generation, learning to accept that people are different, but still equal. It has to be learned and it takes time!"

People advocated for a widening of the participatory basis for deliberative forums by promoting more active cooperation between grassroot movements and local authorities, for instance by encouraging long-term funding for local community initiatives (as opposed to short-term funding only granted to "novel" projects) and by introducing participatory budgeting.

Discussion

For the design of post-neoliberal and postgrowth economies and societies, the four themes highlighted in our deliberative forums on needs satisfaction constitute crucial pillars. First, the forum participants articulated rather fundamental critiques of the growth imperative. This applies not only to the destructive environmental and social impacts of growth but also its tendency towards undermining society's potential for need satisfaction and self-reflective understanding. Second, the concept of sufficiency was put forward as adequate steering principle of our matter and energy use as well as the ways in which we think about our working life, work-life balance and the speed in which we live and work. In addition, forum participants expected that slowing down and downscaling may also bring about clarity in our mind, helping us to distinguish what our genuine needs are from manufactured/artificial wants. Third, decommodification was put forward as a necessary change, not least in allowing us more thriving social relations that are to a lesser extent mediated through monetary transactions, but also in guaranteeing access to essential services and participatory opportunities for all. Lastly, the forum participants stressed the importance of revitalizing communities and democratic processes by encouraging participatory practices and by educating civic identities. This was seen as crucial to bring about critical amounts of bottom-
up mobilization for social-ecological change, perhaps complemented by top-down political strategies and transitional efforts. A list of negative and positive needs satisfiers as arising from the deliberative forums can be found in Table 2.

**Table 2.** List of negative and positive needs-satisfiers relevant for post-neoliberal and postgrowth economics

<table>
<thead>
<tr>
<th>Negative needs-satisfiers</th>
<th>Positive needs-satisfiers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Growth-imperative</td>
<td>Sufficiency principle</td>
</tr>
<tr>
<td>Commercial interests steering production and distribution of essential goods and services</td>
<td>Locally organized units for production and distribution of goods and services</td>
</tr>
<tr>
<td>Prioritizing upward mobility</td>
<td>Local currency or voucher</td>
</tr>
<tr>
<td>Status and salary difference</td>
<td>Community infrastructure</td>
</tr>
<tr>
<td>Global inequalities</td>
<td>Advertisement-free zones</td>
</tr>
<tr>
<td>Limitless wealth accumulation</td>
<td>Learning to be idle, slow down to recognize our genuine needs</td>
</tr>
<tr>
<td>Dominance of/reliance on market-mediated services leading to social isolation</td>
<td>Reduced working hours/days</td>
</tr>
<tr>
<td>Commercial logics and market fundamentalism creating artificial needs and demands</td>
<td>Non-monetary compensation for productivity gains/performances</td>
</tr>
<tr>
<td>Privatization of core infrastructure such as healthcare, school, transportation, housing, financial services, etc.</td>
<td>Maximum income</td>
</tr>
<tr>
<td>Over-emphasis of theoretical knowledge, excessive professionalization</td>
<td>Basic income</td>
</tr>
<tr>
<td>Over-emphasis on wage-work at the expense of other types of work leading to fulfilment of needs such as participation, creation, identity, freedom</td>
<td>Balance between practically-oriented education and theoretical knowledge</td>
</tr>
<tr>
<td>Excessive consumption</td>
<td>Life-long learning opportunity for all of civic identity, of democracy</td>
</tr>
<tr>
<td>Over-emphasis on technological advancement and acceleration of speed, automation</td>
<td>Participatory budgeting</td>
</tr>
<tr>
<td></td>
<td>Sabbatical year for community engagement</td>
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<tr>
<td></td>
<td>Local infrastructure for social support and sharing economy</td>
</tr>
<tr>
<td></td>
<td>Long-term funding for community initiatives</td>
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<tr>
<td></td>
<td>Limiting use of electricity, living space, etc.</td>
</tr>
</tbody>
</table>

**Conclusion**

In this paper, we went in search of indications for a crumbling of the neoliberal domination of economics and wider society. Theoretically, we highlighted the enormous ideological impact that capitalism, in general, and neoliberalism, in particular, has on our dispositions, that is, the ways we make sense of, feel and perceive our environmental and social context. With the help of Marx and Bourdieu, we demonstrated that the historically specific economic categories and social relations of capitalism tend to be perceived as features of things, natural and just: contemporary nature-society relations appear to follow from the web of life and patterns of inequality and one’s position in the social structure from own work efforts or different degrees of achievement. The neoliberal era accentuated this general ideological effect of capitalist production and consumption relations with its political and medial celebration of market forces and solutions, regarded as per se superior to regulatory alternatives such as commons or the state and applicable to virtually all imaginable problems. Indeed, in its heyday, neoliberalism achieved the status of doxa: an undisputable point of view
(“There is no alternative”) that came to dominate a range of societal fields also beyond the economy, especially articulated in the public sector.

We subsequently addressed the most relevant economic, social, ecological and political crisis dimensions of the neoliberal order, referred to heterodox economics approaches, which open up for a post-neoliberal and postgrowth future, and mentioned some of the “eco-social” policy elements that researchers often highlight as potentially facilitating corresponding transformational change. In an application of Ian Gough’s “dual strategy” we empirically complemented this sort of “codified” knowledge with qualitative data or “practical” knowledge from deliberative citizen forums on needs satisfaction in Sweden. Such forums provide an alternative social space, where a new script can be written about a more socially and ecologically sustainable society. Participants made use of this opportunity when considering the ways and contexts of current and alternative needs satisfaction.

The focus on human needs was also the lens through which participants reflected on the current economic system. They did this by assessing its social and ecological impacts from the perspective of their own experiences of working lives, social relations, and self-understanding. We take much of the results of our forum data for indications of, at the very least, a weakening of capitalist and, particularly, neoliberal ideology, since many participants actually questioned some of the most deep-seated imperatives and norms of contemporary economy and society. To some extent, this reflects ruptures of the seemingly natural, unchangeable and unquestioned links between social structures, habitus and practice. This became especially perceivable in the discussions of critical issues such as space use, labour market-generated inequalities, societal norms regarding upward mobility, individual career ideas or concepts of happiness. Many, but not all, of the suggested policy measures to bring about corresponding transformational change based on the participants’ practical knowledge in fact echoed the “codified” ones put forward by researchers (see Table 2).

Our results indicate that deliberative forums engaging researchers and citizens can help draw attention to, reflect and act upon the opportunities that an “objective” crisis of the economic and social structure may present. Again, with considerable overlap to academic debates on the topic, our forum discussants addressed a range of parallel and intertwined crises dimensions as they manifest in their own day-to-day life. Many participants referred to the social crisis (due to increasing inequalities), the climate and environmental crisis and the crisis of political representation. However, faced with the challenge of initiating large-scale social-ecological transformations in the short-term, it is evident that deliberative citizen forums by themselves are unlikely to bring about the required caliber and speed of change. There is also a risk that this means of co-imagining future scenarios attracts and is anchored in a small fraction of populations only, hence remaining isolated bubbles. Yet if complemented with other measures of expanding alternative spaces, the opportunities of critical reflection and imagining alternative ways of satisfying fundamental human needs in sustainable ways that citizen forums provide may well turn out to be valuable in the more general effort of igniting “counterfire” to neoliberalism and developing postgrowth economies and societies.

**Acknowledgement**

This research benefited from funding from the Swedish Energy Agency (Energimyndigheten) for our project “Sustainable welfare for a new generation of social policy” [grant no. 48510-1].
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Implications and analytical advantages of situating capital as a flow-fund element
Katharine N. Farrell  [Universidad del Rosario, Colombia]

Introduction

While the study of economics is presented in neoliberal theory (i.e. Walras, Coase, Friedman, Beckerman, etc.) as an exact science, its basic subject, described so succinctly by Marshall (1920[1890]), is anything but.

“Political Economy or Economics is a study of [hu]mankind in the ordinary business of life; it examines that part of individual and social action which is most closely connected with the attainment and with the use of the material requisites of wellbeing” (Marshall, 1920[1890]:1).

This observation of Marshall’s, every bit as pertinent today as it was in 1890, obliges the student of economics to remain attentive to the peculiarities of the human condition, not least among these being the epistemological constraints associated with humans attempting to make sense of anthropogenic phenomena (Dewey, 1958 [1929]). Encumbered by hermeneutic distortions, both economists and the objects they study are subject to cultural bias, political disposition (Mirowski and Plehwe, 2009) and the inescapable positioning of the observer within space/time. Certainly, the Cold War origins of the project of neoliberal formalization, described by Mirowski and his colleagues, intended as it was to move economic planning out of the political and into the technical realm, is one factor contributing to its decreasing relevance in a world that today is no longer defined by the capitalism/communism juxtaposition which fueled that effort (Hodgson, 2015; Marcuse, 1978; Piketty, 2014).

The failure of neoliberal theory to take into account the complexities of the contemporary global political economy, dominated as much by state capitalism as by free markets, globalized, digitized, diversified and integrated, has been painstakingly demonstrated in the resounding failure of mainstream academic economics, not only to predict but even to explain, the global financial crisis of 2007, while, in the real world, private investors cashed in on their bets that a derivatives-backed cheap mortgage boom in the United States was on the verge of collapse. In these complex times that have followed, a global pandemic has disrupted supply chains and is dramatically widening income and education gaps within and between nations, multiple simultaneous climate catastrophes have taken many lives and are disrupting ‘the ordinary business of life’ for many more, while growing worldwide political and economic instability conspire to uproot expectations and overturn standard explanations: old rule books are being abandoned as obsolete (Steffen et al., 2018; Walker and Holling, 2013). As if to bring the point home, at the G-7 Summit this June 2021, in the United Kingdom, finally there was acquiescence that a neoliberal Laissez-Faire attitude toward coordination of national tax regimes is, at present, counter-productive, even to the interests of the global capitalized elite (Milliken and Holton, 2020).

Arguments concerning the consequences of failing to update neoliberal theory are plentiful and well documented by better scholars than I, several contributing toward this collected
edition. Here I wish to focus on a related issue, less concerned with how and why neoliberal theory has become passé, turning instead to consider some central features of an alternative, proffered up some time ago by Nicholas Georgescu-Roegen (1999[1971] hereafter NGR71), which Farrell and Mayumi (2009) have called his “general theory of economic production.” In the coming pages it will be argued that the paucity of practicality exhibited by neoliberal theory is not merely a matter of neoliberal largesse, nor solely attributable to the Cold War project described by Mirowski and his colleagues but also a direct result of poorly formulated model ontologies, which fail to treat the factors of economic production, and in particular capital, as components of complex living systems. As an alternative, the analytical advantages and theoretical implications of positioning capital, a cherished feature of both liberal and neoliberal economics, within the flow-fund ontology at the heart of Georgescu-Roegen’s general theory of economic production, will be explored.

The impossibility of wholesale arithmetization of economic processes

A scholar of remarkable mathematical prowess (Mayumi, 1995, 2001), Georgescu-Roegen (NGR71) dedicated a considerable part of his master work – *The Entropy Law and the Economic Process* – to questions concerning philosophy of science and in particular the construction and configuration of mathematical representations of reality in general, living systems, in particular, and most specifically, the living systems of which economic production is comprised. This brings us back to Marshall: life is complex. If economics is indeed concerned with how humankind goes about sustaining its own life, day to day, then representing that complexity must be built into the ontology of economic models. Adjustments to variables, parameters and reference data can all contribute to improving models, but they do not necessarily address the ontological limitation that, in the original liberal theory “representation, [read that of Jevons and Walras] the economic process neither induces any qualitative change nor is affected by the qualitative change of the environment into which it is anchored” (NGR71:2). This limitation is carried forward, in neoliberal theory, which continues to rely on the mechanical-physics-based mathematics of Walras, albeit with permutations and sometimes remarkable arithmetic acrobatics, and, it must be said, also much of heterodox economics, which continues to seek out ways to adjust and correct the math, in lieu of engaging with this root problem. The brunt of the problem is, as described by Georgescu-Roegen, that “in the long run or even in the not too long run the economic (as well as the biological) process is inevitably dominated by a qualitative change which cannot be known in advance” (NGR71:17) and which “eludes arithmomorphic schematization” (NGR71:63). In other words, this particular limitation in both liberal and neoliberal theory, that they fail to include the process of becoming, of causing to come into being, is not a limitation in the calculations but rather in the configuration of the mathematics underlying them (Mayumi, 2001).

Moving to the specifics of Georgescu-Roegen’s flow-fund theory, in defending his invention, at the close of his master work, the author reminds his reader of its mathematical and epistemological origins:

“If our knowledge of a certain domain is not compressible, i.e., if its logical filing results in a very great number of w-propositions [consolidated – or generalized propositions NGR71:47], Aristotelian comprehensibility does not obtain” (NGR71:322) and the “…statement that the fundamental principles of economics are universally valid, therefore, may be true only as their form is
concerned. Their content, however, is determined by the institutional setting. And without this institutional content, the principles are nothing but ‘empty boxes,’ from which we can obtain only empty generalities” (NGR71:324 emphasis in original).

In this respect, it is perhaps a misnomer to refer to flow-fund theory as a general theory of economic production, as it is precisely his conviction regarding the impossibility of constructing a general theory that brought Georgescu-Roegen to propose this replacement of the foundational Wicksteedian formula with a relational modelling approach. But it is precisely therein that the remarkable potential of this approach is revealed: flow-fund theory, applied as it was designed, provides an ontological standardization focused not on individual instances, which are subject to novelties that cannot be predicted using conventional linear or even non-linear mathematics (Prigogine, 1997). Instead, it seeks to represent the mechanisms through which the change in question comes about, i.e., the form of fundamental principles, to paraphrase the quote above. Take surfing as an example of how this kind of causality can be modelled, in practice. Although no two ocean waves break onto the shore with an identical shape, there are, nonetheless, predictable attributes for how a wave will break, related to the mechanisms of the irreversible process ‘wave breaking on the shore.’ These predictable attributes make expert surfing, which depends on modelling waves in real time, including predicting their trajectory, possible: because all waves have the same basic dynamic shape. As Prigogine (1997) puts it, for thermodynamically open systems, of which living systems are a type, “[w]e can only achieve a formulation of sufficient conditions for stability… This requires specifying the mechanisms of irreversible processes. Near equilibrium laws of nature are universal, but when they are far from equilibrium, they become mechanism dependent” (Prigogine, 1997:65, emphasis in original).

Here, Georgescu-Roegen’s flow-fund view of time, incorporated into the math as a relational factor associated with delimiting the duration of the economic process in question, and the association of that duration with the specific aim of a given economic process (Farrell and Mayumi, 2009; Silva-Macher and Farrell, 2014), provides a basis for specifying, generally, precisely these types of mechanisms, with respect to the thermodynamically open, living process of converting raw materials into desired products – that is to say, with respect to economic production.

Social construction, as if reality mattered

While it is mostly likely the case that Georgescu-Roegen would have considered himself more of a classical, than a post-modern thinker, the vision of his early works concerning production, starting from the early 1960s, effectively introduces perspective and difference squarely and quite literally, into the economic equation. As such, it could be argued that his flow-fund theory work, toward which he dedicated the majority of his academic career, offers an even more promising basis for advancing post-neoliberal economics than do his, to date more widely discussed, diatribes of the late 1980s, taken up by the so-called “Degrowth” discourse, in which he rails against blind adherence to the growth paradigm among his contemporaries of that period (Georgescu-Roegen, 1986; 1988).

While critiquing neoliberal economics theory was certainly “on the agenda” for Georgescu-Roegen, his flow-fund theory goes well beyond critique, effectively engaging with and disarming the elephant in the classical (and neoclassical) economics’ room – the
presumption, first formally postulated by Vilfredo Pareto (1896; 1897), that inequality is somehow an inherent feature of a natural process of economics that is based in market exchange, as opposed to an anthropogenic artefact, characteristic of configurations of economic process that prioritize the accumulation of wealth among a few over the achievement of well-being for the many. In this, Georgescu-Roegen is quite specific, when summarizing his theoretical position, at the close of The Entropy Law and the Economic Process. There, he specifically points to the ontological limitation of treating economic purpose as a given, and to associated implications of attempting to use conventional classical and neoclassical economic theory to make sense of the culturally diverse range of economic processes that comprise today’s globalized economy:

“This is not to say that standard [read classical and neoclassical economic] theory operates with ‘empty boxes.’ On the contrary, as we have seen, those boxes are filled with institutional content distilled from the cultural patterns of a bourgeois society” (NGR71:324).

“The egregious sin of the standard economist … [is that they deny] the necessity of paying any attention to the evolutionary aspects of the economic process, …[they are] perforce obliged to preach and practice the dogma that his theory is valid in all societies” (Ibid:325 emphasis original).

While there have been important advances in evolutionary economics in the intervening period, which merit their own place within the discourse on post-neoliberal economics, it is not only the study of economic processes as evolutionary phenomena to which he is referring here, but also to the evolutionary process of studying economic phenomena. Pioneering as it was, in 1971, this position is now part and parcel of Anthropocene thinking (Crutzen and Stoermer, 2000; Haraway, 2015; Latour, 2013; Steffen et al., 2018; Waters et al., 2016; Zalasiewicz et al., 2011) and fits remarkably well within the positivist post-modern discourse on post-normal science (Allen et al., 2001; Funtowicz and Ravetz, 1991, 1993; Funtowicz and Ravetz, 1994a; Funtowicz and Ravetz, 1994b; Mayumi, 2017; Mayumi and Giampietro, 2006), which calls upon scholars concerned with the study and resolution of the complex social-ecological problems of the late 20th and early 21st century to seriously take into account the epistemological and ontological implications of their own temporal and spatial positioning, as individuals and as communities, within the processes of human and planetary evolution within which the economics of daily life are embedded.

Responding to that call is, as Allen et al. (2001) point out, a tricky business: one in which the scientific conclusion is that the puzzle cannot be solved scientifically: “we have seen the man behind the curtain and objectivist realism is now compromised” (Allen et al., 2001: 476). This is not to be confused with radical relativism, nor with Critical Realism, neither of which provide sufficient ontological footing to merit the label positivism (Popper, 1968[1959]). It is, instead, an epistemologically agnostic (Cilliers, 2003; Dewey, 1958 [1929]; Light, 2002) but ontologically firm position, in which the impossibility of resolving what Cilliers (2005) refers to as “the performative contradiction of complexity” is placed front and center in theory development – namely, that we are absolutely certain that we are not absolutely certain as regards what we know about the complex systems of which we form a part.

That Georgescu-Roegen was engaged in the work of constructing precisely this new type of epistemologically reflexive ontology is clear, both from applications of his theory that make good use of this feature (Farrell and Löw Beer, 2019; Giampietro and Mayumi, 1997;
Giampietro and Mayumi, 2000a; Giampietro and Mayumi, 2000b; Mayumi et al., 1999; Moreau et al., 2017; Silva-Macher, 2016; Silva-Macher and Farrell, 2014), and from his own words:

"Analysis cannot accept a penumbra between one individual process and "its other." For if it does, it must set it as another partial process and then it ends with three partial processes instead of two. We would thus be drawn into an infinite regress… The first element, therefore, that the analytical picture of a process must necessarily include is the analytical boundary. No analytical boundary, no analytical process… Plato to the contrary, there are not even joints in actuality to guide our carving. One may slice actuality anywhere one pleases. This does not mean that any boundary cut by mere whim determines a process that has some significance for science… [but rather, that] a relevant analytical process cannot be divorced from purpose and, consequently, is itself a primary notion - that is, a notion that may be clarified by discussion and examples but never reduced to other notions by a formal definition" (NGR71:212-213 emphasis original).

While the above citation is rather long, without the associated context, it is difficult to unpack the significance of its final assertion: a relevant analytical process cannot be divorced from purpose; it is itself a primary notion. That is to say, that which is selected for analysis by the economist is not something that can be derived from a set of stable predetermined variables, with stable, predetermined relationships between them, such as is assumed by the Wicksteed production function, \( P = f(a, b, c, \ldots) \), and in turn almost all others. Rather, it is a choice, made not only by the economist, but also by those individuals and groups engaged in generating the economic process to be studied (Farrell and Mayumi, 2009; Silva-Macher and Farrell, 2014). Without delving into the details of Georgescu-Roegen’s long standing criticism of the Wicksteed function, which he once referred to as “an acme of imprecision” (Georgescu-Roegen, 1990:205), to sum up in just a few words, an argument to which he dedicated several chapters and various publications, the basic problem with this function, and with variations on the theme, is that they fail to take into account the impact that qualitative change has on the characteristics of specific factors of production and on the relationships between them. The observation is similar, in many respects, to Holling and Meffe’s (Holling and Meffe, 1996) critique of the concept of Maximum Sustainable Yield, a simple resource economics model that balances extraction and reproductivity rates, in order to specify the optimal rate of extraction from a regenerative resource, such as a population of fish or a forest: the very process of production/extraction generates changes not only in the quantity but also in the quality of the very variables that comprise the production function is itself.

Adding in economic Anschauung

The empirical observation that economic variables are both socially constructed and subject to qualitative change, over time, informs the epistemological foundations upon which the ontology of flow-fund theory is based. Assuming that economic processes are intentional processes that induce qualitative change, also affected by qualitative change in their environment, models of economic process need be able to represent not only changes in quantity (accumulation and decumulation) and spatial-temporal change, but also intent and qualitative change, which determine how the process is configured.
Taking up the analogy of a recipe, introduced by Boulding (1955 [1941]) and elaborated by Georgescu-Roegen (NGR71:234-236), the point can be illustrated by considering the difference between a custard pie and a pound cake (Farrell and Mayumi, 2009:303). The ingredients used to produce the two are the same. However, two different results arise from the two different recipes, each of which includes three distinct types of information: ingredients, measures for these ingredients and mixing instructions. As Georgescu-Roegen has pointed out on many occasions, the basic production function used in both classical liberal and neoclassical neoliberal economics, employs, at best, the first two, which indicate only that it is possible to “obtain the quantity \( z \) of product by using the quantities \( x \), \( y \),… of this and that factor” (NGR71:235), telling us not what the process in question does, but rather, what it may do, the

“variables involved… describe the process in the same manner in which the inscription ‘40 watts, 110 volts’ on an electric bulb or ‘B.S. in Chemical Engineering’ on a diploma describes the bulb or the engineer. Neither description informs us how long the bulb burnt yesterday or how many hours the engineer worked last week” (NGR71:239).

In order to depict these aspects of a production process, the mixing instructions, which are what make it possible to distinguish between different outcomes associated with use of the same resources, are needed: mix together the flour and sugar in a bowl; knead together the flour and butter, to make a crust, and so on.

In the flow-fund theory ontology, this additional information, which Farrell and Mayumi (2009) refer to as Cuisine, is provided by replacing a fixed set of point function factors of economic production, assumed to be stable in their own right and to have unchanging relationships among each, with a complex variable set of functional elements of production, the characteristics and composition of which depends upon the economic process in question.

Since flow-fund theory looks to the purpose of an economic process in order to determine which elements to include in this representation, and to determine whether a given element should be classified as a flow or a fund (NGR71:261), its ontology explicitly includes the role of human intent in defining the material characteristics and dynamics of economic processes. This is a decidedly constructivist position, one that Foucault (1984) formulates in quite similar terms, when considering how an enlightened being, faced with the observation that they are consciously participating in shaping the past of their own future, is to handle the crushing responsibility that this implies. In response, he proposes a “philosophical ethos appropriate to the critical ontology of ourselves as a historico-practical test of the limits that we may go beyond, and thus as work carried out by ourselves upon ourselves as free beings” (Foucault, 1984:47). Constructing such ‘mature’ ontologies, is, one might argue, ‘the’ challenge of the post-modern thinker. In much the same vein, so called “post-autistic economics,” which I would rather call mature economics, bearing in mind that autism is a neurological condition and not a state of mind, calls upon the economic scholar of today to provide a rigorous ontological basis for representing economic process as a complex, living process, far from thermodynamic equilibrium, in which human choice is not only a factor driving allocation and distribution but also a parameter, determining how the process itself is configured.

Under present circumstances, which are, to say the least, alarming, clearly discerning precisely which representations of reality are robust, plausible, and empirically coherent, is a
matter of pressing concern, as it is now immanently clear that ‘something here has to give,’ as the old saying goes.

There is both guidance and tools to be found in the bowels of *The Entropy Law and the Economic Process*. Far from being intended to address merely the specific question of whether or not economic growth is a good thing, Georgescu-Roegen’s flow-fund theory was developed and offered up, in its day, as a new general theory of economic production, one that effectively handles “the” dilemma of the post-modern thinker concerned with questions of economics in the 21st century, by effectively placing the reflexive human back inside the eurodescendent ontology of economic process that is being used to make sense of modern technological development, industrial progress and economic performance.

Elimination of an appeal to the universal truth of the divine was a moment of immense epistemological upheaval for those who lived through the European Enlightenment; and thinkers working today from within European philosophical traditions – as am I, as are we, contributing to this collection, and as are the neoclassical economists whose work is used to justify the now waning neoliberal global political economy – are faced with a choice (Camus, 1953[1951]): replace the demystified truth-sayer of divine authority with an appeal to a new set of universal natural laws, such as Pareto’s, or give up on the unruly demand that an ever changing and evolving world should conform to immutable standards of reference, seeking instead to develop standards of reference suitable for describing the characteristics and dynamics of an ever changing and evolving world (Prigogine, 1997; Prigogine and Stengers, 1984). I would argue that it is precisely the latter which Georgescu-Roegen has achieved with his flow-fund theory of economic production and that its mathematical foundations and structure hold out great promise for developing models that can indeed identify pathways out of the current catastrophic version of the Anthropocene, through which we are living today, and into a virtuous one, where the ordinary daily lives of humankind are situated within and contributing toward the well-being of the rest of nature (Faber et al., 1995).

In his search for a way to formalize the overall structure of this new economic analysis, Georgescu-Roegen arrived at the concept of “economic *Anschauung*” (NGR71:362), which can be understood as the way in which an individual, community or analyst is thinking about the purpose of an economic process. It is a term he takes up initially from Veblen’s (Veblen, 1934:251 f., 1964:64-66, as cited by NGR71:362) usage in constructing a critique of Leninism, and upon which he expands a great deal, along lines quite well in keeping with Kant’s (1990 [1787]) original use of the term, in his *Critique of Pure Reason*: i.e. *Anschauung* is understood as perspective, that aspect of human consciousness related to interpretation and reflection, and is juxtaposed against *Verstand*, or understanding, that aspect of human consciousness related to discerning how the world actually is.

As Farrell and Mayumi (2009), point out, with its reliance on the referent of “economic *Anschauung*,” in flow-fund theory boundaries are not phenomenological but defined through reference to “the purpose setting complex of tradition, consciousness and abstraction through which societies conceptualise the structure of time (generally or for a specific bounded problem) – their economic *Anschauung*” (NGR71:362 as quoted in Farrell and Mayumi, 2009:304). “Where the traditional [economic] distinction between stocks and services is presumed to be phenomenological, under GR’s flow/fund model, distinctions between stocks, flows and funds are made with regard to the boundaries of the specified economic process under consideration” (Farrell and Mayumi, 2009:303). Stocks, as a category, are eliminated from the analysis, and replaced by the flow-fund distinction between materials in stock,
serving as a fund that makes possible future production, and materials functioning as flows, as they are either consumed or produced, during a production process.

The concept provides flow-fund theory with a stable anthropogenic referent, the purposive gaze of the economic actor or analyst, with reference to which the flow-fund status of any given element can be derived, while, at the same time, allowing for variability across cultures, in both the how, and perhaps more importantly the why of undertaking a given economic activity. Silva-Macher and Farrell (2014:751) illustrate the concept using the example of a fruit tree: depending upon whether it is approached from the perspective of a carpenter or that of a fruit grower, the tree will be assigned a different flow-fund status. For the carpenter, who will use the tree to make a table, it is an input flow, whereas, to the fruit grower, who will use it to cultivate fruit, the tree is a fund. Ultimately, what distinguishes these two basic statuses is the temporal relationship between the process and the object, in this case a tree. From the perspective of the carpenter, the tree is used up over the duration of the economic process in question, whereas, from the perspective of the fruit grower, it serves as an agent, facilitating the generating of the output flow of fruit.

With the addition of economic Anschauung the ontological shift of flow-fund theory is complete: the economic role of elements, unlike that of factors, depends not on the material characteristics of the object, per say, but rather upon the role that object is playing within a given economic process, which is, of course, encumbered, to a certain extent, by its material characteristics. While the difference is, as Georgescu-Roegen notes, of little consequence with respect to some elements, such as Ricardian land, which is quiet resistant to interpretations and will tend to occupy the same fund position in almost any economic process, this is not the case for all elements. In particular, it is not the case for capital, which can play any number of roles within a production process, simultaneously and consecutively: investment capital, spent (output flow at the level of the enterprise; input flow at the level of production) to buy input materials (input flows at the level of production) or equipment (funds at the level of production). While treated, in neoclassical mathematics as a homogeneous set of values, capital is, in effect, a combination of flows and funds, dedicated to starkly different parts of a complex process of economic production, leading to a

“point [that] has often been missed. And it is not a point of minor importance[... a] notable illustration [of which] is provided by the analytical difficulties into which Marx got himself by failing to distinguish in his diagram of simple reproduction between the fund-hammers and the flow-hammers” (NGR71:231).

While capital and labor may be rendered homogeneous, and on that basis readily incorporate into classical and neoclassical calculations, this is only when their contribution toward an economic process is measured in terms of money (NGR71:244). If a flow or fund, such as sunlight or air, is not available for purchase on a market, then, leaving aside the moral issue as to whether or not it should be, it is not possible to clearly establish its so called “real” price. However, this limitation in the formula does not somehow magically render these elements irrelevant for economic production. What it does do is oblige their exclusion from neoclassical economic representations. While admittedly more cumbersome, in computational terms, the alternative, functional representation of that same process, under flow-fund theory, can and does provide space for tracing the economic contribution of priceless phenomena.
Once formalized in this way, flow-fund distinctions can be applied to all elements of production, providing a completely relational representation of ecological economic processes, which is no longer beholden to the assumption that it is only through reference to market price that relationships between the factors of production can be defined (Farrell and Löw Beer, 2019; Farrell and Silva-Macher, 2017). This has a range of implications, but the most far reaching of these is most certainly a complete reconfiguration of how we talk about capital and its role in economic production.

**Contextualizing capital: a companion position to Hodgson’s (2015)**

In treating all materials agnostically, with respect to their flow-fund status, Georgescu-Roegen provides a referent, with regard to which capital can be contextualized, to paraphrase Hodgson (2015). To better understand how this works, it may be helpful to return to Georgescu-Roegen’s early institutional economics, where he discusses in great detail (Georgescu-Roegen, 1960, 1965a, 1965b, 1969) how a peasants’ self-understanding of social-ecological place (Farrell and Thiel, 2013) is related to the organization and outcomes of their agricultural production practices. Recalling Simon’s (1987) position on the institutionalised character of intuition in decision making and Vatn’s (2009) conceptualisation of institutions-as-rationality-contexts, there is a clear relationship to be seen, between Georgescu-Roegen’s (NGR71:Ch.1,S.5) initial discussion of what he called “economy of thought,” where knowledge is parked, in traditions and customs, providing in that way, space for creativity and exploration, and the proposition that institutions not only constrain but also facilitate economic process (Bromley, 2006).

By adopting routines of thought that can be shared and referenced across space and time, i.e. by establishing protocols, customs and tradition, complex thoughts and ideas can be constructed (see also Clark, 1997; Clark, 2002) by parking some ideas outside the mind of the individual, these can be reflected upon, revised and adjusted. Presenting, on this point, a position quite similar to that of Cilliers (2005), Allen et al. (2001) and Funtowicz and Ravetz (1993), Georgescu-Roegen (NGR71) argues that reliance on axiomatic economy of thought, such as that employed in much of classical and nearly all neoclassical economics, runs up against its limits when applied to the formalisation of knowledge concerning novelty, since novelty can, by definition, not be logically anticipated. He proceeds to differentiate between three ways of understanding novelty, which he identifies as a task of utmost importance for economic analysis, since it is concerned with the realization of qualitative change in living systems:

- **rational phenomena of the first order**, the appearance of which can be explained through reference to established or plausible logical algorithms;

- **rationality of the second order**, where novelties “cannot be known unless they are actually observed first,” and

- **rational phenomena of the third order**, where, whereas

  “matter, at the physico-chemical level, is uniform...[m]ore often than not, this permanence is absent from the organic and superorganic [read social / institutional] domain... [He goes on to argue that] this peculiarity separates by a broad line the sciences of lifebearing structures from those of inert matter.

  ...[T]o say that Matter has infinitely many properties may not represent the
whole truth and, hence, may be misleading. The whole truth is that Matter has infinitely many potentiae …” (NGR71:117 – emphasis in original).

Linking this proposition to the question of purpose, in the subsequent chapter of his master work, he argues that

“[r]ational phenomena of the third order, which abound in the organic [read organisms] and superorganic [read organizations] domain, … suggest that the same ‘cause’ may have various ‘effects.’ [Concluding that, of] course, it would be improper to attribute this variation to a random factor” (NGR71:184).

He attributes it, instead, to historicity, which he argues is the general case of the “analytical regularities [i.e. rational phenomena of the second order] observed in nature. In fact, these regularities are nothing but a special, limiting instance of historical trend” (NGR71:184). That is to say, in lieu of treating the factors of economic production as given, as is the case in the Wicksteed production function, Georgescu-Roegen treats the factors of economic production as historico-cultural artefacts that reflect the different final causes toward which different economic processes, differently positioned in space/time are dedicated. This converts capital from a found object generating inevitable driving pressures on economic organization into an anthropogenic object that may serve a range of functions directed toward realization of one or another final economic purpose.

This is the heart of his critique of the limitations of an exclusively arithmomorphic approach to analysis of economic process (NGR71:100): that economic process is, ultimately, a biological process, through which human beings transform materials and relations into objects and activities which they themselves specify. This is not to somehow suggest that Maslow’s (1943) hierarchy of needs is without meaning, nor to imply that seeking to secure sufficient food for a community, or indeed for humanity, is somehow a whimsical proposition. Indeed, we may imagine that to be one of the first and foremost purposes that a community would be inclined to specify. However, to meet basic needs is a minimum, one that we may presume could be met today, if there were sufficient will to do so, thanks to the exponential growth in productivity made possible by industrial capitalism (Keynes, 1963).

The question at hand is not so much what the abstract formalized shape of the infinite possibilities for economic production is, as it is, which of the infinite potentiae will be realized. In considering this, Georgescu-Roegen brings back in the idea that economic process should be understood as a biological phenomenon, with reference to the concept of equifinality he continues the work of building into the flow-fund ontology purpose, motivation and “final cause, whether we consider the equifinality of the biological organisms or, especially, man and society running after their purposes” (NGR71: 187). In this way, he is able to link human intent together with the teleological constraints associated with achieving complex organization. Equifinality is the tendency of living organisms to achieve the same outcome through different routes of development. In the context of economic process, one can think, for example, of the great variety of automobiles produced around the world – all designed to serve the same purpose, there are a number of constraints that restrict the scope of potentiae. Bertalanffy illustrates the principle through reference to the intuitively obvious example of the way in which growth is regulated within organisms, producing humans in one size range, dogs in another and elephants in a third, because “the surface-volume ratio [of living system viability, in the face of gravity] is shifted in disfavour of surface with increasing size” (Bertalanffy, 1950:157-158). Blue whales are the largest animals on earth, one might
say, because the constraints influencing how large an animal may grow (gravity, anabolism, catabolism) are differently related in the context of buoyance, so that the upper limit of this surface to volume ratio is increased, making it possible for whales to exceed the terrestrial ratio boundary. This is a consequence of the teleology of the blue whale, in that living blue whales are waterborne whales. While one can remove a blue whale from the water, it will not remain a living whale for long.

Continuing with the example, we can consider the counter example of a killer whale, which has a maximum size much smaller than that of the blue whale. This size can also be linked, using the principle of equifinality, to its teleology, in that a killer whale is an opportunistic hunter, which needs to be able to pursue a range of prey and therefore requires an elevated degree of agility in order to fulfil the purpose of staying alive. That agility requires that the metabolism and morphology of the killer whale be different from that of the blue whale, placing additional constraints on its potential maximum size. In order to move from reference to individual organisms, to social lifebearing organisms, comprised of multiple individuals, Georgescu-Roegen uses the example of ants, which have what he calls endosomatic social differentiation, manifest through the different body shapes serving different purposes within a colony (NGR71:348). The human social lifebearing organism of a village, or of any other superorganic bioeconomic community, can, following Georgescu-Roegen, be understood to have exosomatic social differentiation, manifest through the different roles and responsibilities assigned, and opportunities and constraints presented to, members serving different purposes, within an institutionally mediated society:

“If a few marginal exceptions are ignored, man is the only living being that uses in his activity also ‘organs’ which are not part of his biological constitution. We economists call them capital equipment, but Lotka’s ([1945]) term, exosomatic instruments, is more enlightening. …Exosomatic instruments enable man to obtain the same amount of low entropy with less expenditure of his own free energy than if he used only his endosomatic organs. (NGR71:307); …our exosomatic evolution has turned production into a social undertaking (NGR71:308); Like the social insects, man lives in society, produces socially and distributes the social product among his fellows. But, unlike the social insects, man is not born with an endosomatic code capable of regulating both his biological life and his social activity. And since he needs a code for guiding his complex social activity in a tolerable manner, man has had to produce it himself. This product is what we call tradition” (NGR71:359).

Without wishing to propose that there is a simple one-to-one relationship between tradition and the teleology of equifinality discussed above, we may nonetheless say that, in much the same way that a killer whale is, teleologically speaking, an opportunistic waterborne mammalian hunter, tradition is, in human social community, teleological, in that it serves as a referent for what that community is. In elaborating his position on this matter, Georgescu-Roegen explicitly links it with the idea of institutions:

“A biological process sees to it that the pool of genes is transmitted from one generation to another. Tradition does the same for what we call ‘values’ or, more appropriately, ‘institutions,’ i.e., the modes by which every man acts inside his own community” (NGR71:359).
These modes, which are the social referent of what is appropriate, serve to determine, for example, which potential of elements will be realized in the society in question. Will it be considered appropriate that humans are treated as flows? Worked to the death and discarded, as if they were waste materials, as done in Auschwitz? Will it be considered appropriate that water flowing from high mountain glaciers and lakes is extracted at rates that do not exceed replenishment rates, in order to ensure that they continue to function as funds? Is it considered appropriate for capital to serve as a fund not only for processes of production but also for processes of speculation and accumulation?

In order to trace to its conclusion, this link between the teleological character of the flow-fund distinction and the concept of economic Anschauung, we can return to the analytical argument presented above, regarding the special characteristics of rational phenomena of the third order, which Georgescu-Roegen treated as particular to lifebearing organisms and linked to teleology. In elaborating definitions for these three types of reason, he provides an illustration of how such rationality is, in economic process, dependent upon the social and cultural traditions that structure choices regarding how human economic practice is conducted:

“in some human societies the bride is bought, in others she brings a dowry into the new family, and in still others there is no matrimonial transaction of any sort. Yet the elements of the next lower level, the biological humans that form by combination each of these societies, are the same. From the same basis, therefore, a multiplicity of novel forms may spring up” (NGR71: 117).

Here marriage can be understood as a rational phenomenon of the third order both because its realisation, in terms of it being executed through the buying of brides or homes or without any payment, has a degree of permanence across human societies, while how it is realised cannot be logically anticipated solely through reference to information gathered about a society. Put simply, the realisation happens within an historical and material context that has come into being over time, in the course of the evolution of a lifebearing organism, the community, going about being alive. Due to this, its coming into being cannot be explained solely through reference to logic. Why marriage is done the way it is done is a matter of tradition, while that it is done, and that it is usually expected to be done in some particular way, are matters of the human inclination toward tradition.

Decisions regarding how an economic process is configured, are, in this respect, not only shaped by intent, but also by historicity, context and reflection. For example, a given object may be an input flow element in one process and a fund element in another. If there are, in a society, advocated pursing the realization of each of these two processes, then we can expect there to be conflict between them, because their respective economic Anschauungen delimit competing flow-fund element configurations (Silva-Macher and Farrell, 2014). One could make a similar argument with respect to the decision as to whether to invest a supply of capital on the stock market, with a bank or in a productive enterprise: each option can be associated with a distinct economic Anschauung, in which the original capital is classified, respectively, as either a fund or flow element. By contrast, if an object or material is an output flow element of one process and a fund of another, we can speak of a dependency relationship between the two processes and of a potential contribution by the former toward maintaining the productive capacity of the latter. This is not the same as capitalization, but it has a similar effect, of making production possible: producing, as it were, productive capacity (Farrell, 2020; Scheidel and Farrell, 2015).
Georgescu-Roegen specifically addresses this special character of elements that make production possible (i.e. forms of capital), through elaboration of the concept process funds (NGR71:239-240). A process fund, is a flow that maintains its function throughout the duration of the process under consideration, as does any other fund. However, where ordinary funds are simply used, process funds are both produced and consumed during the economic process. They are what is typically referred to as goods-in-process (NGR71:239). We can understand these as intermediate flows, which neither leave nor enter the process, because their production is an intermediate step to allow the realization of the productive process under consideration. The parallels to capital investment are obvious.

Remaining with the example of a fruit tree, for the grower, sap, bark and leaves can be understood as process funds that must be produced and maintained throughout the growing season, in order to generate the output flow of fruit. For the carpenter, the orchard, which produces trees, is a process fund that must be maintained, in order to guarantee a steady flow of wood, to be made into tables. At the level of an economy, fruit farming can, in this example, be understood as a ║ Sector, which produces productive capacity in the form of funds, in this case orchards, and on that basis facilitates, much as we typically imagine does capital, production, in this case, of wood tables (NGR71:239-240 and 274-275; Scheidel and Farrell, 2015:231).

Through the introduction of these four new analytical categories of flows, funds, process funds and the ║ Sector, Georgescu-Roegen develops an ontology suitable for representing, in concrete terms, how decisions regarding the allocation and distribution of available resources, across an economic process, is related to both the intentional perspectives of those involved realizing the processes in question and to the maintenance of the productive capacity of these processes, in both economic and biological terms. The combination of these two features facilitates formalised analysis of the relationships between qualitative changes in economic and in ecological processes, bringing a whole new meaning to the term natural capital – instead of dragging biological phenomenon into the logic frame of neoclassical economic mathematics, it provides a set of analytical categories that can be applied in precisely the same way, in order to represent the contribution of machinery, money or mangroves toward the maintenance of productive capacity in an ecological economy.

Looking to the future: more accumulation? or living well together?

Returning one last time to the ontology of flow-fund theory, the incorporation of final cause, purpose, intent, at the structural level, makes it possible to formulate a constructive critique of the neoliberal paradigm, one that continues to provide a place within its conceptualization of economic process for exchange, commodities, and capital, all three of which have proven to be remarkably useful elements and none of which seem likely vanish from human society in the immediate future.

However, instead of treating the investment of capital for maximum return as a fait accompli, somehow inherent in the character of the factor, flow-fund theory invites one to ask, what end is served by the mobilization of a given amount of a capital fund in the form of an input flow, directed to facilitate the realization of one or another productive process (Farrell and Löw Beer, 2019). Flow-fund theory is specifically designed to provide a more appropriate representation of the characteristics and dynamics of economic process, conceptualised as
an combination of activities undertaken by thermodynamically open, life-bearing organisms and organizations, which achieve stability by processing materials and energy throughputs coming from, and eventually released back into their environments, under conditions where teleology matters (Prigogine, 1997; Schrödinger, 1948[1944]).

“All lifebearing structures work toward a purpose - to maintain their entropy intact… No form of cause that may fit other phenomena could do for the sciences of life. The final cause – that is, purpose – is not only in its right place in these sciences but it also constitutes an indispensable and extremely useful tool of analysis” (NGR71:194).

When capital is viewed as an element – which might be an input flow, an output flow, a fund or a process fund – this opens up the way we can think about its role in production and liberates us from the idea, intrinsic to neoliberal arguments, that capital accumulation is the only engine upon which we can rely to keep the contemporary global economy afloat. Making explicit the place of purpose in determining the configuration and composition of economic processes, provides space to reflect upon whether the general purpose of economic production should be the accumulation of monetary wealth, the flourishing of life, or perhaps something else altogether: to consciously adopt a future oriented, creative posture: characterized by an economic Anschauung that is actively chosen, not passively received. Perhaps the overarching purpose of economic process should today be to halt, reverse, redirect and replace current globalized dynamics that are quite literally destroying the biological substrates of the planet earth, ranging from still rampant carbon based fuel use, to the making invisible of material exploitation and ecological destruction, through the digitalized, globalized consumer experience (Klein, 1999; Luxemburg, 1951[1913]). What is clear, is that flow-fund theory provides a coherent, rigorous and structure means to determine whether or not the economy actually being practiced consists of processes compatible with that, or indeed some other given purpose.

References


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Humanistic economics, a new paradigm for the 21st century
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The neoliberal failure of historic proportions

We are at the cusp of a new era. The 21st century did not begin in earnest until 2008, signifying a seismic break with the past in ways far too numerous to mention. To be sure, the Dot-Com bubble could have served as a lesson for the vulnerability of Wall Street and that it desperately needed vigilant oversight, but the economy emerged from that short recession relatively unscathed, and the warning sign was misunderstood. Sure, myriad of astute observers had warned for a very long time that neoclassical economics harbors dangerous elements and is merely an exercise in logic “in which social reality is neglected… This neglect is debilitating…” (Lawson, 1997, p. xii). However, it was not until the embarrassing financial crisis of 2008 that the recognition became pervasive that the real-existing economy has “fallen short of any conception of a ‘good economy’—an economy offering a ‘good life’” (Phelps, 2015). It was humiliating, since it revealed for the whole world to see that the “emperor had no clothes” despite the immense amount of hubris that afflicted influential academic economists (Appelbaum, 2019; Chang, 2010; Fourcade, 2015; Keen, 2001).

The realization was prompted by at least five earth-shaking policy blunders supported by conservative economists such as Martin Feldstein, Milton Friedman, Friedrich Hayek, Glenn Hubbard, and Gregory Mankiw (Feldstein, 1986, 1989, 1993, 2017). These mistakes converged in a conjunction, fostering the rise of populism, which was a “response to a political failure of historic proportions” (Sandel, 2018). The neoliberal mistakes included:

a) supporting the Reagan-Thatcher economic policies that were supposed to initiate a new era of prosperity and “mass flourishing” (Jones, 2012). Instead, they magnified inequality not seen since the Robber Barons ruled the economic landscape at the turn of the 20th century and fostered the formation of an oligarchy (Atkinson, 2015; Bartels, 2016; Collier, 2018; Freeland, 2012; Johnston, 2003; Komlos, 2019a, 2020b; Levitsky and Ziblatt, 2018; MacLean, 2017; Mann and Ornstein, 2012; Posner, 2011). Neoliberal economists ignored the crucial role of power in the economy and the political system (Leonard, 2019; Piketty 2020). The immense wealth of the 1% combined with the lack of countervailing power for the rest of society meant that laws and institutions were shaped so as to magnify the privileges of the wealthy (Boushey, 2019; Rajan, 2019). They also neglected that the benefits would accrue mainly to the top 1% of the income distribution and lead to the “hollowing out” of the middle class (Komlos, 2018; Lazonick, 2015; Temin, 2017; Warren 2007; Wolff, 2017). Trickle-down economics was a sham: nothing reached the masses (Komlos, 2019a; Stiglitz, 2011). No wonder they turned against the elites and supported a strongman who promised to “drain the swamp” in Washington, D.C.

b) Globalization was supposed to be good for Americans. Mainstream economists "parrot[ed] the wonders of comparative advantage and free trade and… consistently minimized distributional concerns…” (Rodrik, 2016a, 2018). In reality, globalization was not Pareto optimal. It had winners and losers with devastating social, political, and
demographic consequences: it created the Rust Belt, left millions hopelessly destitute, encouraged the disparagement of the political elite, and the fraying of the social contract that left many with nothing to grasp onto except a bottle, the trigger, or a hypodermic needle (Autor et al., 2020; Case and Deaton, 2020; Chang, 2008; Editorial Board, 2020; Koh, Parekh, and Park, 2019; Komlos, 1988; Krugman, 2000; Pierce and Schott, 2020; Reich, 2015, 2018; Rodrik, 2011; Stiglitz, 2006, 2017; Woolf and Schoomaker, 2019).

c) Greenspan and Bernanke believed in the neoclassical dogma that deregulation would increase efficiency (Mirowski, 2013). Worrying was superfluous in the era of the “Great Moderation” (Bernanke, 2004). In fact, Nobel Prize winning macroeconomist Robert Lucas had declared earlier in his presidential address to the American Economic Association that the “central problem of depression-prevention has been solved, for all practical purposes” (Lucas, 2003). Following in Lucas’ and Bernanke’s conceited footsteps, Olivier Blanchard, then chief economist at the IMF, and one of the more influential conventional macroeconomists, suggested literally minutes before the Meltdown that “The state of macroeconomics is good” and incomprehensibly, retained this judgement in the published version of his essay, even after the failure of macroeconomics and macroeconomists was obvious (Blanchard, 2009). On the contrary, in spite of all the sophisticated analysts, deregulation and negligent oversight led to an immense financial crisis that added to the political destabilization, as well as to the continual fraying of the social contract (Foroohar, 2019; Minsky, 1982; Kakutani, 2018; Keen, 2017; Komlos, 2014; Krugman, 2009; Schiffrin, 2011; Shiller, 2000, 2008).

Paul Krugman thought that the problem was not only the failure to predict the crisis: “More important was the profession’s blindness to the very possibility of catastrophic failures in a market economy” (Krugman, 2009). In fact, as late as 2007 Bernanke revealed that he had no understanding of systemic risks that had proliferated in the financial sector:

“Importantly, we see no serious broader spillover to banks or thrift institutions from the problems in the subprime market; the troubled lenders, for the most part, have not been institutions with federally insured deposits…. We believe the effect of the troubles in the subprime sector on the broader housing market will likely be limited, and we do not expect significant spillovers from the subprime market to the rest of the economy or to the financial system” (Bernanke, 2007).

1 Mankiw, then chairmen of the president’s Council of Economic Advisers, revealed his ideological commitment when he justified the outsourcing of jobs, saying that it is “probably a plus for the economy in the long run” (CNN, 2004; Marglin, 2011, @1:52 minutes). He forgot that in the long-run populism might just get the upper hand, even if we are not dead, as Keynes intimated.

2 The dogmatic and careless nature of Bernanke’s mindset is revealed by how cavalierly he dismissed Minsky’s views on the fragility of the financial sector. Bernanke stated disparagingly that “Hyman Minsky (1977) and Charles Kindleberger (1978) have in several places argued for the inherent instability of the financial system, but in doing so have had to depart from the assumption of rational economic behavior” (Bernanke, 1983). In other words, if you are a true believer, alternative viewpoints can be dismissed without any consideration whatsoever.

3 This is the kind of hubris that prompted David Graeber of the London School of Economics to suggest that, “Mainstream economists nowadays might not be particularly good at predicting financial crashes, facilitating general prosperity, or coming up with models for abating climate change, but when it comes to establishing themselves in positions of intellectual authority, unaffected by such failings, their success is unparalleled” (Graeber, 2019).
No wonder the Financial Crisis Inquiry Commission also blamed the Federal Reserve and its chairmen: “The captains of finance and the public stewards of our financial system ignored warnings and failed to question, understand, and manage evolving risks within a system essential to the well-being of the American public. Theirs was a big miss, not a stumble... To paraphrase Shakespeare, the fault lies not in the stars, but in us.... the Federal Reserve’s pivotal failure to stem the flow of toxic mortgages, which it could have done by setting prudent mortgage-lending standards. The Federal Reserve was the one entity empowered to do so and it did not” (Financial Crisis Inquiry Commission, 2011, p. xvii).

d) Technological change was supposedly the mainspring of human progress, but, instead, it brought us Facebook, Russian trolls, white nationalists, and other extremists and contributed meaningfully to the destabilization of the political system (Foroohar, 2019; Komlos, 2016c; McNamee, 2019; Zuboff, 2019). In addition, it accelerated the devaluation of the skill set of a substantial number of workers that led to downward social mobility and fostered the feeling of abandonment for many and especially the less educated and less skilled white men.

The mainstream did not learn from history that all such major technological transitions were accompanied by social and political turmoil. For instance, the transition from feudalism to capitalism and from an economy dominated by the agricultural sector to one dominated by industry were characterized by revolutions and upheavals. Why should the transition from an industrial economy to a post-industrial knowledge economy dominated by information technology and finance be different?

e) The mainstream was encouraging the economy to be run at full throttle so that when the Covid pandemic hit there was little slack to take up. The economy was far from being a black-swan robust society (Taleb, 2006). 40% of U.S. adults did not have $400 cushion on hand to meet an unexpected expense (Board of Governors, 2018, p. 21).

In fact, practically no consequential society-wide prediction of neoliberal economists turned out to be near target as far as the real world was concerned. It should be obvious that they have outlived their usefulness (Skidelsky, 2020). “This failing in the West’s economies is also a failing of economics” (Phelps, 2015). No wonder there has been an outpouring of criticism urging for a reformation of the canon (Bertocco, 2017; Boyle and Simms, 2009; DeLong, 2011; Fullbrook and Morgan, 2019; Piketty, 2020; Rifkin, 2019; Rodrik, 2016b; Saez and Zucman. 2019; Sen, 1977; Stiglitz, 2012, 2017). And no wonder that the “deplorables” revolted. Flawed economic theory has led to economic policy mistakes which led to a dysfunctional political system and fraying of social cohesion. “Like the triumph of Brexit in the UK, the election of Trump was an angry verdict on decades of rising inequality and a version of globalization that benefits those at the top but leaves ordinary people feeling disempowered” (Sandel, 2019). The neoliberals failed and did so miserably (Komlos, 2017; Peters, 2019).

4 On the 500-year anniversary of Martin Luther’s challenge to the established church, a group belonging to the organization Rethinking Economics and to the New Weather Institute posted “33 Theses for an Economics Reformation” to the entrance of the London School of Economics (Simms, 2017).
Economists’ errors

Where did neoliberal economics go wrong? There are too many mistakes for this short essay, but we can at least mention a couple of dozens of them.

1) Basing the discipline on axioms using deductive logic was a major error. Economics claims to be rigorous, yet its axioms are not subject to falsification (Popper, 1963). And when the data refute the theory, they amazingly claim that theory reigns supreme and the data are not good enough (Prescott, 1986). Instead, economics should be an inductive discipline and start with empirical evidence and real-world phenomena.

2) Creating a fantasy world populated by homo oeconomicus cannot lead to a rigorous discipline. Neoclassical economics is pre-Freudian and pre-Pavlovian. Moreover, it piled on unrealistic assumptions such as an infinite time horizon economy in decision making, perfect competition, perfect foresight, and rational expectations that are relevant to Superman and Wonderwoman but seldom to mortals (Rappaport, 1996).

3) Disregarding sister disciplines is unacceptable. The actual economy is embedded in a social system (Polanyi, 1944). Hence, the social sciences are like a seamless web. Neglecting advances in sociology, political science, and psychology was a recipe for failure.

4) Stressing the importance of GNP is a bad idea because output does not translate automatically into well-being or happiness and there is an incredible amount of evidence on that (Easterlin, 1974, 2015; Frank, 1999, 2004; Frey and Stutzer, 2002; Komlos, 2019d; Offner, 2006; Raworth, 2017; Scitovsky, 1976; Skidelsky and Skidelsky, 2012; Stiglitz et al., 2010, 2019). In the 21st century we no longer need an ever-increasing quantity of goods like we did in the 19th century (Frijters and Krekel, 2021). Materialism is insatiable and therefore can satisfy only temporarily because it inevitably makes people want more and ultimately leads to a treadmill existence.

5) To begin the analysis with adults is inexcusable since economic activity begins in childhood (Schor, 2005). To disregard the first two decades or so of life and its impact on the development of our character is unconscionable.

6) To assume that tastes are determined exogenously was misguided because in the U.S. alone corporations spend $300 billion annually in order to influence our taste and create desire in us.

7) To stress the perfectly competitive model at a time when it pertains to an inconsequential share of the economy is a nonstarter.

8) Mainstream economists insisted on the utility maximizing model although Herbert Simon demonstrated eons ago that satisficing was a more accurate description of choice in real time and many scholars have demonstrated that maximization was impossible for finite minds (Kahneman, 2003, 2011; Simon, 1955; Thaler, 2016a).

9) To assume that markets are efficient was an oversight, because in the presence of imperfect information they are not. And since imperfect information is ubiquitous, it follows that markets are rarely efficient (Akerlof, 2002; Greenwald and Stiglitz, 1986; Spence, 1973; Stiglitz, 2002).
10) Mainstream economics assumed that competition can be increased without increasing the stresses that are the concomitants of a high-pressure economy in which competition, output, and freedom are the indicators of success instead of security, safety, and leisure. Running the economy “hot” fostered insecurity, anxiety, despair, and the accumulation of stress with a few winners and many losers (Heller, 2018). The gig economy also increased stress in the labor market (Ravenelle, 2019; Rosenblat, 2019; Schor, 2019).

11) They trivialized the role of path dependence and how it can lead to inefficient consumption, resource allocation, technologies, as well as institutions (Arthur, 1994). To assume that economic processes are reversible is nothing less than “a pernicious error” (Peters, 2019).

12) They continued to base their models on exponential discounting when it was obvious that hyperbolic discounting should be the default choice.

13) They neglected the role of opportunistic behavior in the economy. Laissez faire policy also enables scammers to take advantage of people and lead to inefficient outcomes (Akerlof and Shiller, 2015; Johnston, 2012).

14) They trivialized the debilitating effect of labor market discrimination on people’s lives (Chetty et al, 2020; Derenoncourt and Montialoux, 2021; Komlos, 2021b).

15) They failed to consider that markets have magnification mechanisms—first mover advantages and winner-take-all design—that favor those already privileged (Frank and Cook, 1995; Giridharadas, 2018).

16) They considered inequality to be benign even though it led to the dominance of an oligarchy (Drutman, 2015; Formisano, 2015; Gilens, 2012; Gylfason, 2019; Komlos, 2016b; Mayer, 2016; Page and Gilens, 2017; Payne, 2012; Piketty, 2014; Piketty et al., 2018; Reich, 2020; Stilwell, 2019; Wilkinson and Pickett, 2010, 2019). Even the arch-conservative ex-Chairman of the Federal Reserve, Alan Greenspan, admitted (in retrospect) that the increase in inequality was “disturbing” and predicted correctly that it might “spark… an economically destructive backlash” (Greenspan, 2007, pp. 365, 408). That was 13 years before the insurrection of January 6.

17) Disregarded the crucial role of relative income and social status in life satisfaction (Duesenberry, 1949; Frank, 1985a, 1985b; Komlos, 2019d).

18) The assumption by mainstream macroeconomists that society can be represented by a single person called a representative agent – is absurd because the technique assumed the nonexistence of problems associated with income distribution, animal spirits, systemic risk, or with financial panics (Akerlof and Shiller, 2009; Hartley, Hoover, and Salyer, 1997; Haldane, and Turrell, 2018; Stiglitz, 2018). Moreover, the whole is more complex than

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5 He also predicted correctly that if we do not reverse “a quarter century of increases in income inequality, the cultural ties that bind our society could become undone. Disaffection, breakdowns of authority, even large-scale violence could ensue, jeopardizing the civility on which growing economies depend” (Greenspan, 2007, p. 468; Scheidel, 2017).

6 “Larry Summers’s remark (quoted by Robert Waldmann) that the day when economists first started to think that asset prices should be explained by the characteristics of a representative agent’s utility function was not a particularly good day for economic science” (Carroll, 2009).
the sum of its parts (Epstein, 2014). By not thinking of the macroeconomy holistically, they disregarded interaction effects and synergism that exists in a group. People's behavior also changes in a collective (Arthur, 2021; Faulkner, et al., 2017; Olson, 1971; Wren-Lewis, 2018). That is the subject of analysis of systems theory and of social psychology: bandwagon effects, groupthink, keeping up with the Joneses, status seeking, and Veblen goods (Leibenstein, 1950). All this they assumed away.

These macroeconomists have shown the utter emptiness of their theories by having absolutely nothing relevant to say about either the financial crisis or its aftermath. Its proponents neither warned us of the coming of the crisis nor were they able to prescribe remedies on how to extricate ourselves from its anemic aftermath (Sachs, 2009). They are incapable of giving policy advice because such crises are not supposed to occur in their framework. “...real business cycle models... have nothing to do with the business cycle phenomena observed in the United States or other capitalist economies” (Summers, 1986, p. 24).

19) Mainstream misconceived the economy to be in perpetual equilibrium, whereas the modern economy is the exact opposite of that characterization: it is in a perpetual state of flux (Arthur, 2014; Beinhocker, 2006).

“Complexity economics sees the economy... as not necessarily in equilibrium, its decision makers... as not super-rational, the problems they face as not necessarily well-defined and the economy not as a perfectly humming machine but as an ever-changing ecology of beliefs, organizing principles and behaviours” (Arthur, 2021).

20) Assumed that working did not generate satisfaction. Working creatively does.

21) Limited its research to models that were mathematically tractable thereby limiting severely the kinds of questions that could be explored (Romer, 2015; Thompson and Smith, 2019).


23) Assumed that increased choice increases wellbeing but disregarded the confusion created by too much choice and the time and effort needed to learn about the products offered (Schwartz, 2003).

24) Trivialized the role uncertainty plays in the economy (Arrow, 1963; Dow, 2015).

Toward a post-neoliberal economics

Post-neoliberal economics must shed itself of the fantasy world of mainstream economics by discarding the above 24 mistakes and replace it with a new discipline that focuses on improving the lives of flesh and blood human beings as they actually exist in space and time (Schumacher, 1973).

7 Emergent behavior of complex systems means that the behavior of whole is not predicted by the behavior of their separate parts (Arthur, 2021).
1) We must be dedicated to the truth, the whole truth, and nothing but the truth. Half-truths do not belong in academia (Feynman, 1974). This sounds rather like a cliché until we consider popular textbooks in which we find, for instance, such principles as “Trade can make everyone better off” (Mankiw, 2018). This is not a false statement; nonetheless, the phrasing is insidious because the students’ takeaway undoubtedly will be that everyone will be better off. The difference between “can” and “will” is too subtle for a novice to recognize. To be sure, trade could make everyone better off – after all, the possibility does exist – however, Mankiw neglected to add that, in fact, it never ever does. By ignoring the gainers and losers – a commonplace principle of international trade (Samuelson, 1948; Stolper and Samuelson, 1941), he actually deceived – brainwashed – tens of millions of students in an unconscionable sleight of hand.

Consider another one of his insidious principles: “Rational people think at the margin”. The students are not likely to understand that this does not mean that people are, in fact, rational. Instead, the statement implies that those who are rational, do think at the margin. However, this may well be a null set. In other words, there is a possibility that no one is rational. So, it also does not imply that anyone is really thinking at the margin, even though a cursory reading would imply it. Rather, it means that if there is anyone around who is rational, he/she will think at the margin. That is why honest economists will have to eschew obfuscation and point out all such deceptive formulations (Komlos, 2016a; Marglin, 2011).

2) Stress the ecological limits to growth and adjust our policies for a sustainable future and bring climate change under control (Boulding, 1966; Fleurbaey and Blanchet, 2013; Georgescu-Roegen, 1971; O’Hara, 2009; Rifkin, 2019; Sachs, 2015, 2017; Stern, 2015; Weitzman, 2009).

3) The economy must become inclusive by adopting Rawlsian principles of justice (Rawls, 1971). The economy should be such that we would be willing to enter it at random without knowing our position in it. Otherwise, it would not be a just economy (Rothwell, 2019).

4) The goal should be to improve the quality of life for a healthy and educated population, in a sustainable environment, with a good work-life balance, and keeping in mind our obligations to future generations yet unborn. We should strive for an economy that enables us to catch up to Switzerland in the contentment of the population, to Finland in educational achievement, to Sweden’s Gini coefficient, and to Norway in longevity (Helliwell et al., 2019). These societies have demonstrated that it is possible to have both a high standard of living and a high life satisfaction. Thus, these goals are realistic. We are not striving for utopia.

5) The post-neoliberal economy should:

   a) eliminate poverty, slums, and unemployment (Chetty and Hendren, 2018);
   b) minimize pain, insecurity, and rent seeking;
   c) strive to achieve the health and educational attainment of the Scandinavian population (Heckman and Corbin, 2016).

Instead of commodity fetishism, we should focus on the importance of social relationships, intellectual satisfaction, and a moral life (Tirole, 2017). Living in dignity in a
flourishing society no longer needs economic growth of the developed world. It needs psychological, emotional, and spiritual growth.

6) We need protection from the advertising industry so that children can develop their character and grow up autonomously without the interference of commercial interests (Ehrenreich, 2005; Whybrow, 2005). It is crucial to acknowledge the endogenous nature of the utility function and that also implies a recognition that social norms, habits, customs, status seeking, and herding behavior all play a major role in aggregate demand (Boulding, 1969; Bowles, 1998; Easterlin, 2004; Fehr and Hoff, 2011; Frank, 2005; O'Donoghue and Sprenger, 2018; Veblen, 1899).

7) We should affirm that our goal is to live in a just and moral economy (DeMartino, 2011; Fleurbaey, 2018). “[M]arkets are not morally neutral instruments for defining the common good” and were not designed to provide moral oversight (Sandel, 2019, Sandel, 2013). That must come from outside of the economic system (Sen, 2009).

8) Economics should begin with the principles of behavioral economics (Kahneman and Tversky, 1979; Sunstein, 2016; Thaler, 2016b; Thaler and Sunstein, 2008).

9) The default model should be based on oligopolies, imperfect information, bounded rationality and take transaction costs seriously (Diamond, 2011; Simon, 1982).

10) Redefine the role of government in economic activity. Its role should not only be to fine-tune the economy and provide for public goods, but also:

   a) to safeguard the balance of power in the economy so as to prevent the emergence of an oligarchy. Its role is also to create institutions that lower the risk of living precariously by, for instance, providing universal health care coverage (Azmanova, 2020; Faux, 2012; Hacker and Pierson, 2016; Mazzucato, 2015).

   b) to formulate an industrial policy so that the formation of such regions as the Rust Belt, with its human toll, can be avoided in the future (Bailey, et al., 2019; Blanchflower, 2019).

   c) to become the employer of last resort in order to eliminate the pain of unemployment (Komlos, 2019c; Tcherneva, 2020).

   d) to provide consumer protection

   e) to assure that employees receive a living wage and that workers receive equal pay for equal work.

11) Economics has to acknowledge that basic needs have priority over other forms of consumption including conspicuous consumption.

12) Acknowledge the unique characteristics of time because it is: a) an element of every economic transaction; b) nonreversible; c) the only resource uniformly distributed; and d) limited to 24 hours a day.

13) Eschew social Darwinism. We should not idolize competition, because it leads to a stressful life and because the pain it inflicts on the losers should be taken into consideration.
14) Improve corporate governance so that CEOs are unable to exploit their power and determine their own salaries (Bebchuk and Fried, 2004; Ferguson, 2012; Lazonick, 2014; Williamson, 1975). Their success is based more on luck than on merit (Frank, 2016).

15) We have to set limits to inequality and to economic activity that does not increase the common good such as rent seeking and signaling (Saez and Zucman, 2019).

**Humanistic economics, the paradigm needed for the 21st century**

It should be obvious that progressives are not going to be able to start constructing a new economics for the 21st century from scratch behind a veil of ignorance. Moreover, our goal should be the implementation of policy rather than focusing on theoretical models since “economics is supposed to be an inquiry into the world, not pure thinking” (McCloskey, 2002). Hence, realpolitik requires that we set our sights on our long-range goals for a good society and insist that we adopt a new path so that we can reach the above goals within a generation or two and catch up to Scandinavia.

Undoubtedly, conceiving and reaching such a new path “intellectually... won’t be easy” (Graeber, 2019). Nonetheless, there is an emerging consensus that the accumulation of anomalies in the normal science of economics is sufficient so that a “Kuhnian” paradigm shift is visible on the horizon (Bowles and Carlin, 2020; Decker et al., 2019; Hill and Myatt, 2010; Jo et al, 2018; Keen, 2016; Komlos, 2019b; Kuttner, 1997; Kwak, 2017; Lawson, 2016; Lee and Cronin, 2016; Madrick, 2015; Marglin, 2012; Mearman, et al., 2018a, 2018b; Morgan, 2014, 2015, 2016; Nooteboom, 2019; O’Hara, 2007; Rubinstein, 2006; 2017; Schneider, 2019; Skidelsky, 2020; Sraffa, 1960; Stiglitz 2019; Stilwell, 2011; Tirole, 2015; Turner, 2012; van Staveren, 2015). Indeed, a reformation in economics is a precondition for the survival of Western Civilization since neoliberal economists have driven us into an ideological dead end that raised the specter of populism, a real threat to democracy, and culminated in a violent insurrection on January 6, 2021. Thus, we urgently need a new Keynes for the 21st century and humanistic economics would be a robust beginning for the creation of a Capitalism with a Human Face (Arrow 1978; Lutz and Lux, 1979).

Humanistic economics implies that a kinder and more just economy is possible, one that is embedded in a truly democratic society. The goal is not to squash markets but to tame them so that we control them and not the other way around. This new economy would enable people to live their daily lives with less uncertainty, less manipulation, less stress, less deception, less conflict, and less fear that their lives could spiral out of control at the next cyclical downturn of the economy or the next bout with medical emergency. Such an economy is not utopian. It has been achieved to a considerable degree in Switzerland, in the Nordic model, and is similar to the social-market economic model of Germany and Austria.

In humanistic economics flesh-and-blood people count, as they experience their quality-of-life in the real existing economy, and not the number of inanimate commodities produced or the monetary value of abstract concepts such as GNP (Komlos, 2019b; Lutz and Lux, 1988; Brockway, 1991). Therefore, the goal should be to create an economy structured in such a way that everyone can realize their human potential, flourish, and live a dignified life.
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I. Introduction

This paper describes the need for and content of an emerging paradigm termed Social Ecological Economics (SEE). In this paper we argue that SEE is the essential future direction for the economics profession, not least because of the social-ecological crises facing humanity and the need for transformation of capital accumulating economic systems. Economics as a discipline is a failure because of a long running inability to address, and tendency to marginalise, such things as power relations, social inequities and injustice (across gender, class and race), ethical social provisioning, the role of care and reproductive processes, the social implications of advancing technology, treatment of others with silent voices (e.g. future generations, children, the non-human world).

SEE draws upon a wide range of literature with links to classical political economy and critical institutional economics. It relates environmental problems to economic structure via the work of Kapp (1950) on social costs and cost shifting, and Georgescu-Roegen (1971) on thermodynamics and dialectics, and connects to ecology to identify mechanism arising from ecosystem structure and function (Spash and Smith, 2019). These are common roots with some branches of ecological economics, but the fundamental difference is the emphasis placed on social structure. In this respect SEE shares concerns with feminist economics over care, reproduction and the role of unrecognised labour, and Marxist political theory over power, class and exploitation. The need is recognised for a social theory as well as a philosophy of science, neither of which have been adequately addressed by ecological economics.

The philosophical basis of the approach is argued to be closest to critical realism. Core aspects of correspondence here are depth ontology raising the profile of both structure and mechanisms as opposed to a sole focus on empirical facts. Structure as a metaphysical reality with multiple causal mechanisms operating in open systems then poses challenges for how economics conducts itself as a science. While following critical realism in its epistemic pluralism there is also a recognised need for structuring interdisciplinary research and uniting diverse fields via common ontological understanding leading to a structured methodological pluralism (not the eclecticism of constructionism and conventionalism). Potential methods for research are selected on the basis of the qualities of an object of study and research question and as such remain open and diverse (quantitative/qualitative, intensive/extensive, see Sayer, 2010). Economic science is then neither deductivist, empiricist nor reducible to a set of idealised methods.

We start this explanation of SEE by taking issue with the hegemonic definition of economics based on choice and offer an alternative based on social provisioning. This clarifies the failure of economics to address different forms of economies both in theory and as actualised and operational both historically and at present. The relationship of economies to needs and their satisfaction with an associated material and energy throughput then becomes part of economic analysis. As noted, a clarified relationship between the ecological economic and the
social is required and we explain some basic aspects of the relationship to social reality. This coverage is an outline of the ontological commitments of SEE, that is how reality is understood, its key constituents as far as an social-ecological economic system is concerned and some of their relationships. Next we outline the way in which economics can be conducted from the perspective of two other aspects of philosophy of science, namely epistemology and methodology.

II. Economics as the study of social provisioning

A rather obvious approach to defining what constitutes economics as a subject is to determine its primary object of study. Economics as an orthodoxy has for some time been dominated by a neo-Austrian dogma that was introduced significantly via Lionel Robbins (1932) and adopted into the mainstream, not least in microeconomic theory. This placed the concepts of resource scarcity and individual choice at the centre of a liberal political economy that was supposedly value free. The economic problem became meeting unlimited and competing wants and the supposed solution was meant to be resource allocation via “the market”, soon supplemented by (macro-)economic growth. In fact a single institutional process associated with capitalism was being advocated, namely, what Karl Polanyi (1957) termed, the price-making market. Robbins neo-Austrian definition then merged into Chicago school neoliberalism, where choice in a market setting, subject to price incentives, became the essence of economics and this has since permeated its meaning. This approach permitted an imperialistic expansion of economics into all sorts of subject areas, simply based on the idea that humans must make decisions as individuals so that any decision became an economic topic, e.g. equating everything from buying a cup of coffee to suicide (as infamously proposed by Becker, 1976).

In stark contrast, an older tradition regards the core of economics as determining the social and institutional arrangements for providing the needs of a community (or nation). Here the aim is to achieve a common good or well-being of all. What constitutes the good/well-being for a group then requires explicit ethical judgment. Modern times reduced the goal of seeking the “common weal” (i.e., the ability to fare well, prosper and have good fortune) into accumulating wealth and making money. Economics then simply became the study of capital accumulation using money and market prices and ultimately leading to economists’ claims of being able to determine optimally efficient public policy.

SEE immediately takes issue with reducing the subject down to studying something as singular as the economy, as if there were only one such entity or form. The term “the economy” is merely unthinking code for market capitalism, while denying actualised varieties of capitalism and that this is only one form of economic system (Hodgson, 2016). So rather than reduce economics to the study of one generic form meant to approximate the currently dominant system, a far broader approach is required, and not least so because this system is failing and creating catastrophic social and ecological crises.

A more comprehensive approach is to define economics as the study of social provisioning to meet human needs within an ethical framework of care and justice for others, both human and non-human. Social provisioning is a necessary activity for any social group whether a household, village, town, city, region, nation state or global collective. It concerns the ways in which people organise as social groupings to satisfy their needs. Markets as mechanisms for allocation are merely one form of arrangement and themselves diverse in structure.
Economics can then be seen as concerned with the variety of institutions for ensuring the satisfaction of needs and the reproduction of a society. Institutions here are to be understood as inclusive of conventions, norms, rules and regulations (Vatn, 2005). This immediately opens up economics for the consideration of alternatives and potentialities rather than the nihilistic claim that there are no alternatives.

A common objection to a focus on needs is that this is deterministic and fails to allow for the variety that appears evident in human society. Such a claim can be seen as confusing objective requirements with subjective means of their fulfilment. Thus Max-Neef (2009 [1992]) makes the distinction between needs and the satisfiers that enable their actualisation. He identifies nine fundamental needs – subsistence, affection, understanding, participation, leisure, creation, identity, freedom – that are regarded as universal and only changeable over extremely long time periods of species evolution (Max-Neef, 2009[1992]: 138). Meeting needs is regarded as a necessary prerequisite for human flourishing, while their means of fulfilment is socially contextual and varies across space and time (Rauschmayer and Omann, 2017).

Satisfiers relate to the institutions, norms and practices that structure the satisfaction of needs, and will influence how economic goods and services contribute to their fulfilment or inhibition (Max-Neef, 1992). As such, while needs remain objective, how they are expressed, perceived, and fulfilled will always be subjective, conditioned by institutional arrangements and wider social and cultural contexts. This embeddedness and emergence of an economy from and with social structure forms one of the foundational ontological commitments of SEE.

In turn, social and economic systems are understood as being embedded in, and fundamentally constrained by, biophysical structures (Spash, 2017; Spash and Smith, 2019). All economic processes interact with their environment. There is a straightforward and basic dependency of economic systems upon flows of materials and energy as well as sinks for the necessary removal of waste material and energy. Economies are open social-ecological systems. Their processes operate within a set of limits prescribed by ecosystems structure and functioning, and social structure represented by actors and their institutional context.

III. The biophysical in economics

A basic fact, although absent from most economic thinking, is that natural resources and waste sinks are required to ensure social provisioning. The reproduction of societies must address the maintenance of ecosystems structure and their functioning or fail. Production fundamentally requires energy, or, more precisely, available energy termed “exergy”. That is, humans require energy capable of performing useful “work”, which is defined, as in physics, to mean the exertion of a force against some form of resistance (Ayres and Warr, 2009). Such work can be performed by humans, animals or machines, but will always require some input of exergy, whether it is the solar radiation embodied in food that fuels human and animal labour, or fossil fuels to power a heat engine. This dependency of societies on flows of energy and materials is captured in the concept of “social metabolism” (Krausmann, 2017). There is no single social metabolism because it will vary depending upon the structure of an economy and its social provisioning mechanisms, and there-in lies the potential of alternative social-ecological economies.

The metabolic nature of human societies emphasises the role of materials and energy in their reproduction. This make the laws of thermodynamics central to any economic process as explored by Georgescu-Roegen (1971). The first law of thermodynamics stipulates that
energy is neither created nor destroyed but transformed from one state to another. In turn, the second law states that when used, available energy dissipates and becomes less useful. This is a qualitative and irreversible process, which implies that exergy is bound to diminish, while entropy, as a measure of energy dissipation, or disorder, will inevitably increase in an isolated system (i.e. where there is neither exchange of energy nor materials with any other system).

Human, and non-human, survival depends upon material and energy exchange which means on being open systems. Giampietro (2019) notes how Schrödinger described living organisms and ecosystems as having the capacity to seemingly avoid, or even reverse, entropic decay through interaction with their surroundings but this requires gathering available energy and concentrated materials from, and disposing of waste into, other systems. Entropy is not actually reversed because it continues in the larger system with which living organisms interact and are dependent. As biophysical entities living organisms are open systems. In general, open systems can maintain organisation, a given size and level of activity, but this has consequences for the systems with which they must interact. The growth of any organism, ecosystem or population is therefore fundamentally limited by the biophysical structure of its environment. These are termed horizontal limits by Devictor (2017: 120-121), because they relate to the spatial-temporal boundary for a given population, assemblage or ecosystem. The same principle applies to human societies and their economies, which depend upon ecosystems for flows of materials and energy as well as sinks for the waste they generate. Giampietro (2019) remarks that this implies that the processes ensuring the reproduction of elements of a “technosphere” (i.e. a social economy) must not interfere with the reproduction of elements in its associated “biosphere” (i.e. ecosystems structure and function) upon which they depend for maintaining a given scale of activity and organisation. Different societies have attempted to address this requirement in different ways with varying degrees of success in sustaining themselves.

Human history consists of a long period in which social provisioning was organised by free roaming, migratory, hunter gatherers prior to the rise of sedentary agricultural settlements. The former appear highly sustainable, long lived and relatively low impact, although some extinction of species is implicated. The latter consisted of small bioregional economies, with regional material flows and solar radiation as the main source of exergy, reliant on agriculture and forestry for various reproductive processes. The industrial revolution marked the start of a major transformation of social metabolism in human social and economic systems. The use of fossil fuels – coal then gas then oil – became the main source of exergy driving production processes, while increasing use of concentrated minerals replaced solar dependent plant and animal materials. This expansion of production, along with the development of artificial fertilizers, facilitated the growth of economic activities and populations beyond their previous limits (Spash, 2017).

This social metabolism appears highly unsustainable. After a few hundred years operating in just parts of the global provisioning system the results appear headed towards catastrophic collapse. The move away from exergy derived from solar radiation to finite stocks of concentrated minerals, combined with economic growth, has meant the social metabolism of industrialised human societies rapidly depleted the “entropic dowry” upon which it depends (Georgescu-Roegen, 1971). As a physically closed system, the Earth exchanges flows of energy but not of materials with its surrounding (at least not in any significant sense), while the reproduction of biospheric entities is made possible by the existence of various climatic systems that dispose of thermal energy into outer space, maintaining favourable conditions for life (Mayumi, 2017). Once used the stocks of low entropy are in effect irreversibly lost. In
theory, the flows of exergy from solar radiation could be harnessed to reverse the dispersal of available energy on Earth, but to date this remains science fiction, while the ability to reconcentrate all dissipated materials to original quality on a substantive scale appears equally implausible (Spash and Smith, 2019). Recognising the biophysical reality of the economic process then leads to the inevitable conclusion that industrial economies are dependent on finite stocks exergy and their continued operation, let alone continual growth, is impossible over any extended period of time.

While the exhaustion of finite resources remains an ultimate limit on human activity, an arguably more pressing limit is the accumulation of waste. Industrial social metabolism “merely transforms low entropy into waste” (Georgescu-Roegen, 1971). As such, pollution should not be treated as a problem outside the system (i.e. an externality), or an anomaly, that could somehow be solved through increased efficiency, or correcting prices, but as an integral part of the economic process (Spash, 2021b). The Laws of Conservation indicate the inevitability of pollution because mass remains the same, but the quality of materials, like energy, declines. Ecological economists such as Daly (1992) have emphasised the scale of impacts from human activity (e.g. waste accumulation). What has been given less attention is the qualitative aspect arising due to the creation of artificial substances and interventions that would not have otherwise occurred and to which natural systems and entities are unable to adjust. Such unnatural impacts on the biosphere and ecosystems lie at the heart of the ecological crisis, such as the on-going mass extinction of species. Thus, not just the scale of human activity (e.g. quantity of waste, population size) but also its qualities determine the consequences for the environment and functioning of ecosystems. The importance of the form of intervention is why technology is never neutral, and also what determines the extent to which something is unnatural (Deckers, 2021). Humans are then engaged in processes of change not equilibrium and stability.

The development of ecology in the 1970s brought new insights into the structure of complex systems and their interconnections. This was mainly driven by the realisation of the disruptive impact of human activities on ecosystems’ structure and function, which in turn affected human systems (Spash and Smith, 2019). Contrary to previous views of ecosystems as isolated, self-regulating and stable systems, they became recognised as complex and dynamic open systems. The potentiality to change ecosystem structure dramatically following systems collapse was highlighted by Holling (2009[1986]), who described this organisation and reorganisation process as part of a cyclical pattern. The evolution of an ecosystem or population can be chaotic with abrupt changes in trajectory. Besides the “horizontal limits”, mentioned earlier, “vertical limits” are emergent and arise due to interactions between ecological levels and dependencies between different components of the system (Devictor 2017). Human activities interacting with ecosystems have uncertain and indeterminate consequences for their structure and function. In the face of such partial ignorance and indeterminacy over human intervention, public policy would better be precautionary than risk taking (Stirling, 2017), and society prepared to adapt rather than lock itself in to a specific “optimal” pathway (e.g. infrastructure, technologies, energy and materials).

IV. The social dimension of economics

Social reality is the dynamic outcome of human practices from which it emerges and by which it is reproduced (Lawson, 2006). However, emergence means that social structure while dependent upon is not reducible to human practices (e.g. individual behaviour). Social
structure enables coordinated interactions through collective practices. Collective practices refer to accepted ways of doing things in a community, and can emerge in various ways, notably because of their functionality, but also simply by chance or repeated occurrences (Lawson 2012). They form a basis for individuals to form expectations as to the appropriate course of actions to follow in order to coordinate with others. Interconnected obligations and rights may evolve that are relationally constituted and constitutive of social positions (Lawson 2006). For example, the positions of employer and employee exist in relation to each other and entail associated rights and obligations for both parties.

How, and to what degree the actions of agents are pre-determined by social structure, as opposed to being autonomous, is a fundamental point of debate. Mainstream economics reduces “society” to being an aggregation of individuals who act purely out of individual self-interest (i.e. maximising their own personal utility) and are basically identical (both ethically and psychologically). As such it cannot explain the historical variety in social provisioning systems – production and consumption patterns – throughout history and across contemporary cultures. This requires understanding human variety and social relations as emergent and mediated through institutions and values that interact with, shape and form economic structures. Human action is always relative to a particular context in space and time and set within social structure. While agency is restricted it is neither denied nor entirely pre-determined.

Following Jessop’s (2001, 2005, 2007) “strategic-relational” approach, structure and agency can be viewed as dialectical concepts beyond an artificial dualism. He considers structures as strategically selective, but not absolutely constraining, leaving some room for agency. His main argument is that structures generally tend to favour some actions over others. In this sense, he emphasize the importance of a strategic context for action: agents will strategically reflect on their (usually incomplete) understanding of structural constraints and opportunities and act accordingly. Action is therefore both structured, and “structuring” as it tends to reproduce structures and their patterns of strategic selectivity. These recursive interactions between agency and structure create tendencies because structures are not absolutely constraining. There is then only relative and temporary stability to patterns of strategic selectivity, with the possibility for actions to circumvent structural constraints or change them.

As structures are the product of human agency, they are dynamic and are open to change (Lawson, 2012). Through their practices and interactions, humans continuously (and often unintentionally) reproduce and transform the social structures that influence these practices. The employer-employee relation for example has evolved, with a changing set of rights and obligations as unions have negotiated better working conditions. Likewise, the social positioning of women has changed as emancipatory movements have fought for equal rights as citizens.

That major social structures can change (if generally only slowly) is evident from the contrast between modern society and archaic societies. For example, Sahlins (1972) described how hunter-gatherer economies were characterised by a high degree of underproduction and disdain towards accumulating material possessions. Modern industrialised societies promote over production and waste in a throwaway, fashion conscious mode of conspicuous consumption. Thus, modern consumer behaviour is not an ahistorical trait of human nature, but a specific form of social structure which helps reproduce the capitalist mode of production. The change in economic and social structure during the rise of capitalism and associated market economies has sometimes been described as a change in terms of the extent to
which “the economy” is embedded in society. A prime example is the work of Karl Polanyi (1957) which argues that such modern market economies should be understood using a “formal” economic approach (i.e. individual choice in price-making markets). He regards most of human history as having been spent in “primitive” economies, where market exchange was largely or totally absent, and distribution occurred via reciprocity and kinship groups (Polanyi, 1957). Economic (provisioning) activities were described as being embedded in social relations and institutions. Understanding such economies required a “substantive” approach to economics in contrast to the formal approach, which he accepted as valid only for modern economies. The latter are governed by rational logic, efficiency, self-interest and prices which he believes means they can be regarded as disembedded from social relations (Gemici 2008; Polanyi, 1957).

While Polanyi highlights aspects of institutional differences between capitalist market economies and past economies, the division he draws between socially embedded primitive economies and socially disembedded modern economies is erroneous and only serves to reify the utopia of the “self-regulating market” that he painfully attempted to deconstruct (Spash, 2019; Gemici, 2015). The notion of (dis-)embeddedness fails to capture the changing qualities of social provisioning, and ultimately denies their social aspects. This encourages the separation of the social and economic, rather than their conceptual distinction and actual connection. Modern market economies are instituted differently than their historical counterparts, but market relations remain embedded-in, and built upon networks of social relations (Granovetter, 1985).

Indeed, the reproduction of capitalism and price-making markets depends upon various social mechanisms. Capitalism is embedded-in, and the functioning of markets requires, very specific social institutions that include well-defined private property rights guaranteed by a legal system, judiciary and State authority. As noted by Polanyi (1957[1944]), Nature and labour are “fictitious” commodities, since they cannot be produced within the capitalist system, but are essential to its reproduction. The formal definition of the economy therefore obscures the large range of care and reproductive activities that occur outside of markets, and that are generally undertaken by women and has been noted by feminist economics (Spash, 2020). Who gets paid and what is not an aspect of efficiently functioning labour markets but discriminatory practices involving gender, class and race.

Price-making markets have little, or in fact nothing, in common with perfectly competitive markets, where each firm has no power to set prices or control other factors of production. Actual market economies evidence oligopoly and monopoly power institutionalised in the corporation. Prices are the result of power relations and that includes the power to structure markets and regulations in ones own favour. Multi-national corporations and the Davos elite do not wait to be regulated; they lobby and influence government action in their favour opting for self-regulation when other choices are unavailable.

Power in the market place also means creating demand for products. Large firms have means to manipulate social attitudes, and therefore to manage what consumers buy and at what price (Galbraith, 1979; Kapp, 1978 [1963]; Spash and Dobernig, 2017). Promotion of dissatisfaction is the essence of modern marketing via normalising comparison with others, status-seeking (i.e. keeping up with the Jones’s), fashions, in-group/out-group identity, shopping as therapeutic and possessing the latest technology. Rather than industrial production leading to material satiation, and the need for less work, the consumer society has evolved with more work and more disposable products. This process has long been

V. Philosophy of economic science

Mainstream economics has attempted to employ and maintain discredited philosophical approaches to conducting itself as a science. On the one hand it aspires to finding objective truths through empiricism as if theory was unnecessary and data could speak for themselves. On the other it promotes a form of deductivism that places abstract mathematical models at its core with unquestionable foundational axioms divorced from any reality. Sometimes the two are combined in a pseudo logical empiricist approach,1 or claims to some vague form of positivism with epistemological positions such as a fact-value dichotomy, a naïve objectivism and the search for universal laws (Spash, 2012). None of this has been neutral, but has rather hidden an implicit conceptualisation of reality. Thus, the particular worldview of mainstream economics has tended to favour regarding economies as physically isolated, mechanical, self-regulating, equilibrating and predictable systems. Leaving an ontology to be defined by a methodology (whether deductivist or empiricist) means falling foul of the epistemic fallacy. That is, objects and their relationships only become accepted as valid, or even recognisable as relevant, if they conform to the methodology, e.g. if something cannot be measured it is ignored, effectively not existing in the analytical approach. Thus mainstream economics is blinkered by its methodological choices and methods (e.g. cost-benefit analysis) come to dictate understanding of reality (e.g. Nature must have a monetary price to be of value). In addition, contrary to the approaches of mainstream economists, the second half of the 20th Century saw a general recognition that science operates in a social context, and that our knowledge is fallible. However, the failings of mainstream philosophy of science are not the primary concern here (see Tacconi, 1998; Lawson, 2006; Spash, 2012, 2020), but rather we aim to suggest what would be a way forward in relation to SEE.

Ecological economics emerged as a critique of mainstream’s economics inability to account for the complexity of economies, and particularly of its underlying biophysical processes such as the Laws of Thermodynamics (Puller and Smith, 2017). However, the field has suffered from a misguided commitment to pluralism, or anything goes, that has resulted in claiming validity for knowledge claims based on opposing and contradictory assumptions and methodologies (Spash, 2012). Notably, the field has struck an uneasy line between criticism of mainstream economics and adoption of its methods and models, which has been justified as being pragmatic (Spash, 2013). The resulting confusion has left the field with a weak identity (Repke, 2005), which has neutered its radical potential and left it open to co-option and “passive revolutions”.2

The search for philosophical foundations led Tacconi (1998) to propose a combination of post-normal science and constructionism. However, in its strong form constructionism denies realism and is incompatible with the ontological commitments of ecological economists to a biophysical reality independent of the human mind. Post-normal science is also not a

1 Logical empiricism, originating within the Vienna Circle, was a diverse philosophy of science with diverging opinions among the members of the Circle (see Spash, 2012).

2 The concept of passive revolution originates from the Marxist theorist Antonio Gramsci and relates to the passive integration of counter-hegemonic elements by various means (often small concessions) to neutralise their revolutionary potential and leave the overall power structure unchanged. For an extended discussion on this topic in the context of ecological economics see Spash (2021a).
philosophy of science, but an epistemological critique of traditional naïve objectivism in the natural sciences and its transference into the social sciences. As Tacconi (1998) seems to recognise his mixture of inconsistent approaches results in contradictions. Puller and Smith (2017: 19) summarise the problem as follows:

“Ecological economists seem to be searching for a way to combine a perception of the world as independent of our knowledge, while at the same time admitting the social construction of knowledge and the role of meaning-making in the social realm”

They then detail how a philosophical well-grounded approach can be found in critical realism, which combines ontological realism with epistemic relativism.

The form of critical realism of relevance here is associated with the early works of Roy Bhaskar (1975 [2008], 1979). As explored by Lawson (1997) in relation to economics, a strong emphasis is placed on the importance of addressing ontological issues. More specifically critical realism propose a depth ontology that goes beyond empiricist and actualist philosophies to give place to structure and the causal powers of their mechanisms. Structures and mechanisms make events happen. What is actualised is merely part of the potential and the result of which mechanisms and counter mechanisms are operative and which ones dominate. The empirically observable is then merely a subset of what is actualised based on human ability to take events into account.

While social structures are human constructs they are no less real for that. Capitalism is, for example, a recognisable system with real mechanisms and effects (as described earlier). Reality is further conceived as stratified, with hierarchically ordered strata, starting from a physical dimension, followed by chemical, biological, social and economic dimensions (Collier 1994b). All biological entities are physical, but physical structure is independent of biological structure. Similarly, the co-dependent social and economic strata are dependent upon the biological, the chemical and physical, but not vice versa. However, as consistent with the earlier discussion, higher strata are irreducible to lower from which they are emergent. Similarly, Georgescu-Roegen (2009[1979]) exemplifies such properties by considering how an elephant is composed of physical and biological structure but its behaviour (an emergent property) cannot be explained purely form physics or chemistry. As we have noted society is not simply the aggregation of the individuals of which it is composed.

This stratified and layered understanding of reality also results in a concept of causality that differs from traditional realist approaches. Instead of being explicable as event regularity, critical realism explains actualised events using the concept of causal powers of mechanisms based on structures and mechanisms (Collier 1994a). In open systems, there are multiple mechanisms at play that can either enable or prevent the actualisation of potentialities. Rather than seeking universal and timeless “laws” of Nature there are law like conditions where certain tendencies of mechanisms become actualized (Puller and Smith, 2017).

Bhaskar describes the scientific process as “the social production of knowledge by means of knowledge” (Collier, 1994a: 54). In this view, “transitive” knowledge or thought objects, provide the concepts, models and theories that are simultaneously the raw material and the product of science, and which seek to explain “intransitive” reality or real objects (Sayer, 2010). Science seeks descriptive and explanatory knowledge if natural and social entities, phenomena, events and their relationships. While social structure is subject to change it is not
so easily or quickly, it has durability (Lawson, 2006), and that means the same transitive / intransitive approach to understanding knowledge can be applied. Those who emphasise change as undermining all knowledge (e.g. Goddard, Kallis and Norgaard, 2019) fail to allow for durable structure and mechanisms which are the essence of the ability to know anything. There is also a tendency to over play the role of social scientists in affecting their objects of study.

As Sayer (2010: 33) states “social scientists and historians produce interpretations of objects, but do not generally produce the objects themselves”. He argues that a clear distinction is required between an object of inquiry and our knowledge of it, which consists in the language, concepts or images that we use to describe reality. Thought objects are therefore referents to their “real” counterparts, but he regards knowledge of true correspondence as impossible, i.e. all knowledge is fallible.

Experience of the external world consists of ideas (percepts, sense data, qualia) involving socially contextual conceptualisation (e.g. language, culture, prior knowledge). The extension of knowledge involves reconceptualization and involves the role of metaphors and analogies which relate to existing ways of thinking e.g. the current prevalence of computing metaphors and analogies. The transitive or thought object in critical realism involves weak constructionism and is termed epistemic relativity or (sometimes) epistemological relativism. This weak constructionism contrast with the radical relativism of strong constructionism where knowledge is simply a matter of shared conventions among researchers. In such accounts the relation to real structures, mechanisms and objects is regarded as irrelevant or even the existence of a reality beyond the human mind is denied.

Although knowledge is fallible, it is not equally so. Choices can be and are made between difference explanations and descriptions. Representations of the world are of practical use and their employment in our actions and practices has consequences which can be evaluated, help us navigate it and enable us to have an impact on it. We judge what works well and what does not. In Sayer’s (2010: 48) terms intersubjectively shared conventions must prove themselves to be practically adequate, so that our expectations about the world and results of our actions are actually realised. This is more than just the usefulness of a theory, because the adequacy of knowledge is also judge in terms of descriptive realism relative to the structure of reality. Thus critical realism is distinct from instrumentalism (such as found in American Pragmatism) because the aim is not simply prediction but causal explanation. Prediction can be equated with explanation only if one assumes event regularity, which fails to hold in open systems like economies. Indeed, prediction is unnecessary for the explanation of a phenomenon (Collier, 1994a).

Investigation of open systems requires a distinct approach from the idealised laboratory experiment which tries to create a partially isolated system through controlling mechanisms. The limited applicability of such methods for social phenomenon means alternative methods are typically required, such as the use of counterfactuals. However, as Danemark et al. (2002b) point out, there is no specific “method of critical realism”. Indeed the method for investigation is relative to the object of study and research question. Critical realism also recognises a wider range of modes of inference than the traditional induction and deduction. It includes the roles of retroduction and abduction (see Danermark et al., 2002a), as forming part of the process of providing causal explanation, which opens up the methodological toolbox of social sciences and changes understanding of methodology as supposedly (but not actually) conducted in traditional sciences. An inference always implies a form of
generalisation and can either refer to extrapolation in an empiricist sense or to conceptualisation of the “hidden essence of things” in a realist sense. Danemark et al. (2002a: 100) suggest five strategies that can help us discern the hidden underlying structures and mechanisms: (1) counterfactual thinking; (2) social experiments; (3) studies of pathological cases; (4) studies of extreme cases and (5) comparative studies.

There are also grounds for judging which methods are appropriate. Methods and related theories must be adequate to their objects of study (Puller and Smith, 2017; Spash, 2012). For example, evolutionary theory, and its associated tools for analysis, is inadequate for understanding the operation of a mechanical clock. Thus, Hodgson’s (2008) argument that evolutionary theory should replace mechanistic theory in economics is flawed because it simply repeats the same mistaken belief that all objects of relevance to economic must be of one form (i.e. evolutionary rather than mechanical). Similarly the imposition of mathematical formalism as defining economics fails not because the methods is inherently wrong but because it cannot address the object of study, i.e. the characteristics of economic systems. More specifically quantifying everything with arithmomorphic concepts excludes all qualitative aspects (Georgescu-Roegen, 2009[1979]). This indicates the need for a structured methodological pluralism, where theories and methods are informed by the qualities of the object under study and cooperation occurs between those with common understanding (Spash, 2012).

A final aspect of note is the emancipatory role of social science research. Investigating the real (structural) cause(s) of a social phenomenon means the explanation of the social scientist will inevitably clash with the existing ideas of some people, that is new evidence may appear, theories brought into question, previously confirmed positions be undermined. Such is the nature of scientific research. Social scientists criticise those holding fallacious ideas. If there are institutions holding those false ideas then the research is also a criticism of them and the social scientists has a role in removing wrong beliefs. Collier (1994a) argues the role of the social scientist is not just to criticize but should be to undermine institutions promoting false ideas. Emancipation is then seen as transforming structure. When considering environmental research the case being made here is clear because research showing beliefs about the benefits of economic growth, fossil fuels, chemicals, plastic, asbestos, genetic modification and so on, to be false then criticise the institutions promoting such things. Research is neither neutral nor value free and facts have ethical implications for both the researcher and society.

VI. Conclusion

The multiple social, ecological and economic crises of our age, and the failings of mainstream economics to explain or address the structural causes of these crises, means new approaches to economics are essential. SEE has been outlined here as a necessary and emerging paradigm. Economics has become increasingly detached from its object of study and the orthodoxy is fundamentally flawed as a social science because it advocates a prescriptive methodology while lacking any serious engagement with epistemology and ontology. The resulting epistemic fallacy means it promotes a narrow implicit world view as if a factual truth. Failures here include imposition of limited quantitative methods and mathematically formalist methodology that exclude qualitative aspects of reality and the use of isolated/closed systems thinking for an open system reality.
Economies are the socially structured institutional process involving the interaction of humans with the natural world. Social reproduction is achieved only within the bounds of the given structure and mechanisms of biophysical reality. The form and scale of economic processes depends upon a set of spatially and temporally contextual social institutions. That is economics concerns the form and function of social provisioning process which can take various forms and are far from limited to price-making market or capitalist institutions. Starting from processes of social provisioning, economics becomes the study of plural historical, actual and potential economies with their underlying institutional arrangements and biophysical basis rather than a singular abstract idealised “economy”. This broadens analysis not only to what institutions, norms and values shape the economic process and agents’ behaviours, but also to what are socially desirable and ecologically sustainable systems of social provisioning. Economics is neither value free nor ethically neutral but its stance on both should be made explicit. It must also be realist about how economies are reproduced via social and ecological mechanisms. That means linking to both power relations and ethical and just means of provisioning, but also material and energy throughput that respects others (human and non-human). The aspirations of economists to provide for the well-being of humanity, if taken seriously, mean a revolutionary change in economics is long overdue.

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https://doi.org/10.1016/j.ecolecon.2019.05.001


https://doi.org/10.1016/j.ecolecon.2019.106420


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Oikonomics: towards a new paradigm in economics
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Introduction

A major failing in economics is reducing the study of the “oikonomic process” to “chrematistics” and then, in neoclassical economics, the further reduction to a purely mathematical and model-based approach. Elsewhere I have sketched out the methodological and ideological implications of this choice.¹ But here, the focus will be on what has been left out of our view and how an alternative, historical and phenomenological approach to economics as oikonomics may look like. I begin by setting out aspects of the reduction and key terms before exploring oikonomy in a broader sense drawing on the work of Karl Polanyi. By doing so, I recover the original meaning given to the word oikonomy by ancient Greek philosophy, notably Aristotle, which has been lost within modern economics. This is, as I will further argue in this chapter, a work that is desperately needed if we wish to recover a real-world, historical and ecological perspective of the economic process beyond the ideological defence of free markets by neoliberal economists under the disguise of science. As argued here, post-neoliberal oikonomics has to be grounded on a much broader understanding of the oikonomic process, which does not isolate the oikonomy from the historical, social, cultural and political dynamics, nor separates oikonomy from ecology, humans from Nature. Moreover, it has to be grounded on a deeper understanding of the meaning and nature of freedom itself.

How it all started

When Adam Smith wrote his An Inquiry into the Causes and Origin of the Wealth of Nations, he clearly defined wealth in use-value terms. Defining use-value as “the utility of a particular object”, he went on to argue that “every man is rich or poor according to the degree in which he can afford to enjoy the necessaries, conveniencies, and amusements of human life.”² By doing so, Smith followed Aristotle, who, already nearly two thousand years earlier in his Politics,³ made a crucial distinction between what was then called the oikonomy ⁴ (considered

⁴ The etymology of the word is now clearly established, reaching back to the Greek word oikovouco/oikonomos (i.e. “household management”), a composite word derived from oikos/oikos ("house") and vțjuul/nemein ("to manage; distribute") by way of oikovoujos/oikonomia. While the original meaning of “Oikonomou” was a home owner (following Aristotle who starts from the family as the smallest oikonomic unit), it evolved to denote someone who was responsible for all resources on the estate, a steward. The first recorded use of the word economy in the modern sense can be found in a work composed in a monastery in 1440, meaning the management of resources. Since the proper management of resources would use the minimal amount to reach a given aim, “economy” has also taken on the meaning of frugality: “an economical use of resources”, “to economise” or someone being “economical” in their spending habits. These meanings can be found in our modern standard textbook definition of the economy when economy’s aims are defined as to “maximise utility through the best use
to be “the art of living and living well”) and *chrematistics* (“the art of acquisition”). The former was concerned with all the ways whereby we humans produce, distribute and consume wealth. It included different activities like mining, fishing, farming, manufacturing and even warfare and slavery. Thus, the oikonomy was defined by what was done, not by how it was done. Indeed, chrematistics or commerce was seen as constituting one of its tools, as were others. Aristotle even went as far as considering that whence acquisition is not ultimately subordinated to fulfil a human need by obtaining a use-value we love more in exchange for others we value less, it has to be considered external to the broader oikonomy. Thus, he believed that there was one kind of chrematistics that pertained to the oikonomy and another which did not. The former was subordinated to the use-value logic. The latter was solely concerned with accumulating more money and exchange-values, which the Greeks considered constituting the “art of getting rich” but not the “art of living and living well”, (Figure 1).

We may better understand this if we look at the central distinction in Aristotle’s philosophy between primary and secondary functions or uses of something. While use-value refers to the primary function and precedes exchange-value, the latter represents a secondary use of something, being just a means-to-an-end. As is known, use-values may exist independently of having an exchange-value. Indeed, most use-values central to sustaining our lives and well-being are of that kind: the air we breathe, the climate stability we enjoy, the myriad of environmental services supporting our lives, and our social relations. They all attend to numerous fundamental needs without necessarily – and mostly so – having to be paid for.

**Figure 1.** Aristotle’s definition of oikonomy

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of available scarce resources”. Or, in more simple terms, how to live as best as possible given the limited available resources we have at hand.

5 From the Greek χρηματιστική/κρηματιστική. According to Thales of Miletus, chrematistics is “the art of getting rich”. It derives from the Greek χρήμα/chrēma for money (but also meaning “thing” or even denoting “needed things”) as well as χρηματά/χρηματά, acquiring wealth, still used for money and funds, as in χρηματοδότω/χρηματοδοτώ for finance in modern Greek. Thus, it is clearly concerned with money and market relations, akin to modern economics which, therefore, should more properly be termed “chrematistics” instead of economics.
The problem, as Aristotle saw it, is to mistake the means for the ends. As he observed,

"when once the use of coin had been discovered, out of the barter of necessary articles arose the art of wealth-getting, namely retail trade; which was at first probably a simple matter, but became more complicated as soon as men learned by experience whence and by what exchanges the greatest profit might be made."\(^6\)

From this misconception, as Aristotle warned, people could end up taking accumulating money for the oikonomy instead as a means.

"Hence men seek after a better notion of riches and of the art of getting wealth than the mere acquisition of coin, and they are right. For natural riches and the natural art of wealth-getting are a different thing; in their true form they are part of the management of a household; whereas retail trade is the art of producing wealth, not in every way, but by exchange. (…) The source of the confusion is the near connection between the two kinds of wealth-getting (…). Hence some persons are led to believe that getting wealth is the object of household management, and the whole idea of their lives is that they ought either to increase their money without limit, or at any rate not lose it. The origin of this disposition in men is that they are intent upon living only, and not upon living well (…). Some men turn every quality or art into a means of getting wealth; this they conceive to be the end, and to the promotion of the end they think all things must contribute.

Thus, then, we have considered the art of wealth-getting which is unnecessary, and why men want it; and also the necessary art of wealth-getting, which we have seen to be different from the other, and to be a natural part of the art of managing household (…) not, however, like the former kind, unlimited, but having a limit."\(^7\)

From this quote, we can see that for Aristotle, as for the ancient Greeks, the word oikonomy found its meaning and purpose in the (re)production, distribution, and final consumption of wealth as use-values. By contrast, chrematistics, whereby we trade and exchange with others our possessions, if not subordinated in the last instance to help us lead rich and meaningful lives, was not considered part of the overall oikonomy.

Notwithstanding, here Smith, and modern economic science he fathered, departed from Aristotle and indeed the very notion of what the oikonomy is all about. Although he defined “wealth” in qualitatively and relational use-value terms, he rapidly centred his focus on the markets and the measurable dimension of wealth, namely exchange-values. This focus on the quantitative market dimension of the oikonomic process rather than on its qualitative relational dimension was justified by Smith – as it would be by those economists of all colours and orientations who came after him – by arguing that

"when the division of labour has been once thoroughly established, it is but a very small part of man’s wants which the produce of his own labour can

\(^6\) Ibid., p. 15.
\(^7\) Ibid., p. 16
supply. He supplies the far greater part of them by exchanging that surplus part of the produce of his own labour, which is over and above his own consumption, for such part of the produce of other men’s labour as he has occasion for. Every man thus lives by exchanging, or becomes in some measure a merchant, and the society itself grows to be what is properly a commercial society.”

By taking as the norm a particular historical reality (the establishment of modern commercial societies and capitalism) and by implicitly taking it as the only norm, Smith and those who followed him dismissed all other forms of oikonomy in which humans aim to “live and live well” through (re)producing, distributing and consuming the “necessaries, conveniencies, and amusements of human life”. Thereby, in practice, he set out to inquire into the Origin and Cause of the Exchange-Values of Nations, more than into their wealth, as the title of his book would suggest.

This reversal is even more striking if we consider that Adam Smith saw no direct correlation between use- and exchange-values. Consequently, in his own view, the former cannot be reduced or subsumed to the latter. That is, following his reasoning, the exchange-values an individual possessed or obtained through becoming “in some measure a merchant” in modern society should not be taken as a measure of his wealth. After all, it was he who put forward what is known as the “water and diamond paradox”, arguing that:

“The things which have the greatest value in use have frequently little or no value in exchange; and on the contrary, those which have the greatest value in exchange have frequently little or no value in use. Nothing is more useful than water: but it will purchase scarce any thing; scarce any thing can be had in exchange for it. A diamond, on the contrary, has scarce any value in use; but a very great quantity of other goods may frequently be had in exchange for it.”

He could undoubtedly have extended these examples to a myriad of other freely available use-values, like the fresh air he breathed continuously to stay alive, the stable climate he lived in, the social and familiar networks that sustained him or even the academic relations and friendships that nurtured both his emotional and intellectual needs, and his professional career and the related incomes he obtained from it. The same can be said for all these use-values self-produced by him, gifted to him, redistributed to him by state policy or according to his academic positions. They were indeed not just a “small part” of the “necessaries, conveniencies and amusements” sustaining his life and well-being.

Nonetheless, it was immediately after defining “wealth” in use-value terms and stating his paradox that Smith set out the nature of his undertaking: “to investigate the principles which regulate the exchangeable value of commodities”. In this way, he restricted his inquiry to chrematistics instead of the whole of the oikonomic process. Thus, giving up any coherent attempt to examine the origins and causes of wealth as such. What is even more striking is that no one has seemed to notice this inconsistency. At least not the economists and modern industrial society, immersed as we have become in accumulating exchange-values and

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8 Smith, op. cit., p. 22.
9 Ibid., p. 28.
10 Ibid., p. 28.
following the chrematistic “art of getting rich” instead of “the art of living and living well”. No one seems to have noticed that what we call economics nowadays should more appropriately be called chrematistics. However profound and far-reaching the implications of this departure have been.

First of all, looking solely at exchange-values, we came to confound “goods” with “bads”. Exchange-values related to positive use-values with those related to negative ones like when a car crashes on a highway, cancer rates due to higher contamination increase, or rivers and waters have to be depolluted. In all these cases, more exchange-values are traded. Still, it does not mean that we are doing better in terms of “enjoying the necessaries, conveniencies, and amusements of human life”.

Moreover, as ecological economists like to point out, we do not just ignore the, somehow euphemistically, so-called “externalities”, but we have ignored Nature’s contribution to the oikonomic process altogether. Indeed, we miss the physical and ecological fundamentals, the oiko-logos, on which any proper “house management”, oiko-nomos, must be grounded. By not paying for the so-called ecosystem’s services and natural resources freely obtained from Nature, it simply disappears from the economist’s field of vision. By looking only at the monetary, market-related dimension of the oikonomic process, we ignore that the free and balanced functioning of ecosystems and our biosphere as a whole are the primary sources of wealth in use-value terms sustaining our lives and our well-being. We forget that there cannot be any economy, indeed any human life, without ecology. We ignore, as well, the broader human ecology and all these individual and social processes whereby we humans (re)produce, distribute and consume wealth and riches without passing through the markets. Although not having been traded, all those use-values represent a critical aspect of our wealth and how our lives and well-being are reproduced.

Simultaneously, focusing on exchange-values and monetary prices allowed modern economics to consider only the economic process’s quantitative dimension. While use-values are relational and differing qualities are of their essence, exchange-values refer to a quantitative relation between objects. Thereby, by considering prices and quantitative exchange relations solely, economics could be established at the image and resemblance of Newton’s mechanics: centred on abstract, simplified models of reality, and the establishment of linear quantifiable causal relations between variables. This process already started with the British Political Economy, with Smith and Ricardo’s arguments based not on actual historical observation but logical arguments applied to abstract models of reality instead. But it went on to be adopted by Marx and Marxist economists too.

What is the oikonomy all about?

Had economists taken an empirical and phenomenological approach to the oikonomic process and looked at it as what it is, a historical, ever-changing creative process instead of searching for “universal laws” and regularities, they would have noticed, as Aristotle already knew, that the “origin and causes of wealth” go much beyond prices and quantitative relations in the markets. That development, as Schumpeter argued, is an irreversible “creative-destruction” process that is not akin to the movement of passive bodies as those studied by Newton. Moreover, they would have realized, as argued by the historical school in economics, also known as the Prussian School, still hegemonic in the German academy and elsewhere
Economists would have better understood Wilhelm Dilthey’s hermeneutic and phenomenological approach, firmly rejecting applying a methodology formed exclusively from the natural sciences (Naturwissenschaften) to the human sciences (Geisteswissenschaften). While the former is centred on explaining natural phenomena subjected to unvarying natural laws, the latter has to deal with life’s creative manifestation and historical change. While within the natural sciences we seek to explain phenomena in terms of observable cause and effect, which repeats itself universally in space and time, in the human sciences, we strive to understand them in terms of the relations of the part and the whole, as a living, changing reality. Thus, according to Dilthey, a distinctly hermeneutic and phenomenological approach must be applied to understand the Geisteswissenschaften (or “spiritual sciences”). The oikonomic process, of course, enters into this category. It constitutes a complex, multidimensional creative historical process, which cannot adequately be approached by reducing our focus to some artificially isolated variables, assuming everything else as unchanging and external to the model by supposing the ceteris paribus assumption. As done by all other social sciences – and, indeed, any life-science dealing with creative, irreversible qualitative changes like biology, ecology or even, to some extent, thermodynamics – economics should be approached from a hermeneutic and phenomenological perspective. It is a permanently changing whole in which ecological, social, cultural, political and individual dynamics converge and affect each other reciprocally. Thus, complexity, feedback loops, novelty and the emergence of new contexts and realities characterise the oikonomic process, not unchanging universal laws.

Had the economists looked at historical reality instead of their abstract imaginary models, they would have realized, as Karl Polanyi, a late representative of the historical school did, that chrematistics, producing use-values for the markets and buying and selling them there, is just one among other ways we humans pursue our oikonomic aims. As he argued, human oikonomic systems have existed throughout history in varying historically and geographically specific nuances, although invariably combining four primary oikonomic forms: self-sufficiency, reciprocity, redistribution and commerce. We may add to this list a fifth form of oikonomic practice and behaviour, not mentioned by Polanyi, which also played an essential role in human oikonomic behaviour and practices: namely, plunder. That is, forced acquisition.

Acknowledging that, we may propose a new schematic representation of the oikonomic process (Figure 2). It shows the five primary forms whereby, throughout history and still nowadays, we humans produce, distribute, and consume wealth to sustain our lives and well-being. In this representation, we encompass what already Aristotle saw as constituting the oikonomic process. Of course, it should be the appropriate study field of economics if economists seriously aim to understand the Cause and Origins of Wealth in the real world. Or, as stated in modern economics textbooks, “how humans use scarce resources to meet their needs.” Even for neoclassic economics, had they been truthful to their economics

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12 The nature of this phenomenological approach to the oikonomic process is explained more in length in Stahel (2020a), op. cit., chapter 1.5, pp. 141-168. The methodological and epistemological implications of the use and abuse of the ceteris paribus assumption in economics can be found there too, part one pp. 34-141 and Stahel (2020b), op. cit.
definition, market-centred oikonomy is far from being the only one out there. As Alfred Marshall, another of the founding pillars of the neoclassic approach defined it: “political economy or economics is a study of mankind in the ordinary business of life; it examines that part of individual and social action which is most closely connected with the attainment and with the use of the material requisites of well-being.”

Are self-sufficiency, reciprocity, redistribution and even plunder not “individual and social actions closely connected with the attainment of well-being”?

Figure 2. The five basic forms of oikonomy

1. Self sufficiency

Of the five fundamental forms of oikonomy, producing for our own consumption is the most basic one. It is the primary form whereby humans, like other living beings, provide for their needs. As the biologists Maturana and Varela defined it, life itself is an autopoietic, self-(re)producing process. At a fundamental level, therefore, we shall find self-sufficiency at work at the basis of all oikonomic activities and forms of behaviour. People self-sufficiently provide for a myriad of use-values or satisfiers, which may later be self-consumed, sold, gifted or redistributed; or else taken by others forcefully.

The essential requirement for self-sufficiency is freedom, having the autonomy to do so, coupled with the ability or capacity to do it. In the 1980s, Amartya Sen developed what became known as the “capability approach”. The idea that according to each one’s capabilities and potential, freedom of choice and thus the possibility of manifesting it is of central importance to a person’s quality of life. Once an individual or, for this purpose, a small group possesses the means to produce, they can self-sufficiently provide for their self-

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consumption. Whether wealth thus produced is then self-consumed, gifted, redistributed or simply taken by someone else is secondary, not a primary aspect.

The so-called Schrebergarten in Germany and elsewhere are an excellent example of it. Nowadays, around nine-hundred-sixty-thousand allotment gardens or “small gardens” (Kleingarten) exist in Germany alone, occupying 46,000 hectares. These small gardens, found in many cities, are the inheritors of a movement that started in the early XIX Century. At that time, the strong migration from the rural areas to the growing industrial urban centres meant that they were an important food source for the many impoverished families. Among others, they ended up playing an essential role in providing food during the two World Wars. Nowadays, food security no longer being the biggest concern, they still play a significant social, cultural, environmental and economic role in these countries. They also illustrate how, by self-organizing and autonomously pursuing our oikonomic aims, people act in holistic, integral and organic ways, trying to satisfy and balance a series of different needs simultaneously. Thus, it is not just a linear, singular calculus assumed by economists but also a multidimensional intuitive, changing dance whereby different needs are looked after simultaneously. Autonomy, leisure, understanding, participation and identity are just some of the needs self-sufficiently attended by the garden activities and care.

In the 1970s and the 1980s, André Gorz, born Gerhart Hirsh and known by his pen names Gérard Horst and Miquel Bosquet, an early defender of basic income, made an important distinction between autonomous and heteronomous work. The former is all those labour activities we do out of our free initiative and will. The latter is related to work done on behalf of others like slave or wage-labour, following external design and aims. The old English travail for labour, which still is used in Latin languages (Portuguese trabalho, Spanish trabajo and French travail) has its origin in a Roman torture instrument, the tripalium (derived from the Latin roots, tri- and pālus – literally, “three stakes”). Its use to designate heteronomous labour reflects how labour is perceived in our modern world: a burden and something imposed from the outside, attending an external need and not respecting and according to our inner requirements. By contrast, autonomous labour has an entirely different feeling, following a multidimensional logic and not just the exchange-value one, maximizing chrematistic profits. That is something everyone who pursues a productive activity out of hobby experiences and knows.

Although the formal spaces for self-production are not as prevalent as they could be had we the personal and collective will to do so, still essential parts of our oikonomic life are based on and regulated by self-sufficiency. Thus, for example, we self-educate ourselves and our children beyond institutionalised education in the same way that we may take care of our health beyond public or private social security and health institutions. By walking, we self-sufficiently provide for our mobility, and by hanging around with a friend, we self-sufficiently provide for our fundamental needs of affection, participation, identity and leisure. Indeed, there is a vast amount of non-waged labour thanks to which we self-sufficiently provide for our needs.

Simultaneously, this capacity to self-produce is often used to increase profits and is, thus, subordinated to the exchange-value logic, being colonized by chrematistics. As Ivan Illich

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pointed out, while focusing on wage labour and dismissing other forms of unpaid, self-sufficient forms of production:

“one completely overlooked the fact that the commodities made by wage labor required further labor to make them into useful things. Commodities, purchased and brought into the family through the expenditure of wages, required more and more programmed and predetermined inputs in order to become something useful. And these forms of labor became mandatory. (…) 

The availability of unpaid labor that would add to the product the amount of human activity necessary to make it useful was the only reason why wage labor could be paid in the first place. I called this unpaid contribution shadow work, and I pointed out that, due to the polarization of social sex characteristics in the nineteenth century, it was initially more incumbent on women than on men. It now touches also men more and more.”

Nowadays, this use of shadow work is central to the so-called IKEA model whereby “do it yourself” is added to the commodity's (re)production process. Moreover, with modern information tools like personal computers, smartphones, and the Internet, individuals are increasingly called upon to add their labour already at the production stage, providing services previously provided by the producer. Indeed, through internet banking, online shopping, ATMs and bar-code reading devices at malls, stores and airports, companies manage increasingly to outsource previously paid labour directly to consumers who, consequently, self-produce a vital part of the product they are buying.

Nonetheless, as Illich pointed out, this kind of self-sufficient production as something mandatory and ordered by companies’ chrematistic logic providing for these services and products cannot be seen as self-sufficiency in its pure form. It is not a free, autonomous activity performed self-sufficiently by the individual; but rather a heteronomous activity outsourced to consumers. It, therefore, represents the subordination of self-sufficiency itself to chrematistic logic in that outsourcing of paid to unpaid labour becomes an integral part of the chrematistic “art of getting rich”, on which companies like IKEA, low-cost air carriers and indeed contemporary information-centred capitalism thrive.

Simultaneously, it affects personal wealth according to the different individuals and groups capacity to autonomously provide for their needs. For example, while older generations may struggle to get by in our increasingly digitalised world, the millennial native digitals access plenty of their satisfiers by using what we refer to as “new technologies”. Therefore, a wealth inequality gap in terms of self-sufficiency exists between generations and people due to the ever-growing “digital gap” – some managing to provide more efficiently and entirely to themselves in our digitalized world than others.

Standard economists simply do not consider this kind of production relevant, following Smith, who defined “productive labour” or just “labour” as only those market-oriented activities and not all those use-value producing ones. Moreover, they ignore that even in our modern market economies, the “causes and origin” of our wealth and riches are defined not only by our earnings but also (and perhaps even more fundamentally so) by our capacity to self-

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sufficiently provide for ourselves, amidst other non-market-based ways whereby wealth is produced, distributed and consumed.

Thereby, by looking solely at monetary income, the real wealth of individuals and countries is misrepresented. Particularly when considering traditional societies, where self-sufficiency and gift are sometimes the main oikonomic motives. This is a kind of myopia that starts with the very definition of wealth and what the oikonomy is all about in economics and has become central to the Post-War development era. It affects NGOs, development practitioners, international agencies, governments and people of all colours alike. As Wolfgang Sachs graphically put it,

“on 20 January 1949, it was President Harry Truman who, in his inauguration speech before Congress, drawing the attention of his audience to conditions in poorer countries, for the first time defined them as ‘underdeveloped areas’. Suddenly, a seemingly indelible concept was established, cramming the immeasurable diversity of the South into one single category – the underdeveloped. (…) An image that the economic societies of the North had labelled themselves was thus negatively projected onto the rest of the world: the degree of civilization in a country is to be indicated by the level of its production. Starting from that premise, Truman conceived the world as an economic arena where nations compete for a better position on the GNP scale. No matter what ideals inspired Kikuyus, Peruvians or Filipinos, Truman recognized them only as stragglers whose historical task was to participate in the development race and catch up with the lead runners. (…)

Turning the South’s societies into economic competitors required not only the injection of capital and the transfer of technology, but a cultural transformation, for many ‘old ways’ of living turned out to be ‘obstacles to development’. The ideals and mental habits, patterns of work and modes of knowing, webs of loyalty and rules of governance in which the South’s people were steeped were usually at odds with the ethos of an economic society. In the attempt to overcome these barriers to growth, the traditional social fabric was often dissected and reassembled according to the textbook models of macroeconomics. To be sure, ‘development’ had many effects, but one of its most insidious was the dissolution of cultures that were not built around a frenzy of accumulation. (…) Whenever development experts set their sights on a country, they fell victims to a particular myopia: rather than a society that had an economy, they saw a society that was an economy. As a result, they ended up revamping all kind of institutions, such as work, schools or the law, in the service of productivity, degrading the indigenous style of doing things in the process.”

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2. Reciprocity

Besides self-sufficiency, traditionally, there has always been another fundamental way of distributing and having access to the needed use-values to sustain our lives and well-being, namely reciprocity. Several anthropologists call it the gift economy.\textsuperscript{17} Here something (a use-value) is given to someone else without any expected immediate retribution. It includes intangible gifts like politeness, hospitality, trust, affection, and invitations to participate in rituals, parties and celebrations. But it also encompasses a myriad of material gifts like food, physical shelter, objects and, like in our modern society when we invite people to weddings and feasts, all kind of celebrations and gatherings in which a host may invite people and even strangers. Humans are a social species, something which standard economics ignore by assuming “rational chrematistic behaviour” instead of observing actual human behaviour. Indeed, contrary to the dogma of human essentially selfish behaviour found in economics and the belief that rational economic agents act motivated by purely short-term chrematistic interests, everywhere we can see how people, valuing their social relations, try to attend multiple objectives by their oikonomic behaviour. As Polanyi stated:

"the outstanding discovery of recent historical and anthropological research is that man’s economy, as a rule, is submerged in his social relationships. He does not act so as to safeguard his individual interest in the possession of material goods; he acts to safeguard his social standing, his social claims, his social assets. He values material goods only so far as they serve this end. (...) These interests will be very different in a small hunting or fishing community from those in a vast despotic society, but in either case the economic system will be run on noneconomic motives."\textsuperscript{18}

In traditional societies, gifting is a fundamental way whereby the individual’s social standing is asserted. Indeed, in many traditional cultures, accumulation is not well-seen, and people who do so without sharing their riches risk being ostracised. Therefore, instead of accumulating exchange-values, people rather share and gift use-values with those who may profit from them.

Marcel Mauss calls gifting a “total social act”. Cultural values and practices, social bonds and networks, power relations and hierarchies, as well as individual identities are all intrinsic and inseparable parts of the way people give and share their riches with others. A gift creates and enforces a relationship, a social bond between the giver and receiver. Within a gift economy framework, the oikonomic dimension materialises and reinforces social and cultural relations and identities by providing what Manfred Max-Neef called synergetic satisfiers. Like true self-sufficiency, as we saw above, gifts are subjected to a multidimensional logic, and they satisfy different fundamental needs simultaneously. Hospitality, as an example, does not just provide for subsistence and security for the guest, but for affection, identity, participation and understanding, among others, for the guest and the host alike.

In the context of a gift society culture, refusing to give or refusing to accept means denying the bond and, thus, refusing communion. Reciprocity and, therefore, as Polanyi emphasises, the need for an institutional and social symmetry is fundamental to the gift oikonomy’s long-

\textsuperscript{17} This became particularly mainstream among anthropologists after Marcel Mauss’s highly influential \textit{Essai sur le don. Forme et raison de l'échange dans les sociétés archaïques}, published in 1923-24.

term survival. While a given time or geographical distance separates receiving from giving – otherwise, barter rather than true gift-making would be happening – nonetheless, a balance and symmetry in time and space are fundamental to keep the system alive. People give and receive, and, broadly speaking, a balance between these two dimensions must be struck and maintained during their lifetime. Although, at a local level and in given periods of their lives, individuals may be more at the giving or the receiving end of the chain. This is precisely the meaning of the created bond: by giving, richness is handled to the social community, which, one day and perhaps even from another direction, will flow back to the original giver in the form of received gifts. Although no direct barter occurs, globally, in time and space, symmetry tends to balance out giving and receiving at the individual level.

Through gifts, wealth flows from those able to give (and thus may spare what is gifted) to those who may need it. Wealth is thus redistributed, while social relations and bonds are reinforced. Rudolf Steiner, the founder of anthroposophy, considered what he called “the fundamental social law” the most important law for the oikonomic process. According to him, it is a law that applies to the social and oikonomic world as natural laws apply to the natural world. In his words, “the well-being of a community of people working together will be the greater, the less the individual claims for himself the proceeds of his work; that is, the more of these proceeds he makes over to his fellow-workers, and the more his own needs are satisfied, not as the result of his own work but as the result of the work done by others.” Or, said in other terms and pointing to the gifting and receiving dimension of it, “the well-being of a community is greater the more each one gives according to his possibilities and receives according to his needs.”

The Fundamental Social Law asserts that which contemporary biology and ecology are repeatedly discovering: symbiosis, cooperation, mutual aid, and a concern for others, benefit society more than self-interested behaviour, competition, and the desire for personal gain. But this is something neoliberal economists ignore. For sure, in the context of our market-dominated oikonomy, in which you cannot rely on your autonomy to produce for yourself, nor the gifting kindness of others, it ends up being a matter of having enough purchasing power and financial independence to get your satisfiers from the markets. Thus, we no longer rely on others to satisfy our needs, often not even our close relatives and friends. Even our modern technology and goods are designed to make us more and more independent from others. Thus, we may easily forget that we are still interdependent. By focusing on the market’s objectified relations, we may easily get the false impression of being independent and not needing others to get by once we possess enough money reserves. But, we still depend on the other’s capacity to provide and willingness to exchange. It is just that the amount of our bank account and the access to our credit card became an intermediate step overshadowing the essential interdependency which nowadays, even more than before, binds us all together due to the increased social division of labour and specialisation. Our well-being still depends on others’ well-being and capacity to provide. We forget that even in the context of chrematistics, the more producers receive according to their needs, the better they can provide according to their full capacity. The more we respect and even promote Nature’s ways and balance, the more vital ecosystem’s services and resources she may deliver. After all, we are interdependent, symbiotic beings.

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3. Redistribution

A third fundamental form of oikonomic life is redistribution. Unlike in reciprocity, where a gift is given horizontally, directly by the giver to the receiver, riches are centralised by a higher authority that redistributes them to the community (and themselves), according to usually predefined, fixed rules. Instead of horizontality and symmetry, like the former, it presupposes verticality and hierarchy. From the more individualistic patriarchal structures whereby the patriarch (or matriarch) redistributes to the family group or the clan, up to the ancient empires and feudal systems where the nobility and the clergy concentrated a vital part of the social product later redistributed. It has been central to the 20th-century socialist regimes like the Soviet Union, China or Cuba; and is fundamental to the post-war European Welfare States. If we take countries like France or Finland in which the proportion of government spending to GDP is at over 55% in 2019, it meant that more than half of the yearly expenditures in the oikonomy are done not following the linear maximization calculus of individuals, but according to governments’ social and political priorities. Public healthcare, public schools, agricultural subsidies or unemployment payments mean that the monetary resources have been first centralized by the government through taxation to be later redistributed.

Seen from that perspective, the differences between “socialist” and “capitalist” regimes are more a matter of degree and form than content. Both share joint believes in progress and society’s advancement through scientific and technological development, a reductionist and objectified perspective on reality and, above all, follow the same aims of industrial and material growth. However, they differ in how these aims, which can be summed up as the modern ideology of progress and industrial development, are best realized. Marx was a firm believer in industrial and technological progress but was wary of the market forces and the capitalists freely following their will, aiming to foster progress through collective planning and redistribution. Therefore, he pointed to the contradiction of those capitalists who praised order, hierarchy and control within the fabric while asking for self-regulation and anarchic freedom in the markets. Not that different from Nazi Germany, despite their political and ideological disputes. In the same line, we can see that the differences between monetarists and Keynesian economics are in degree, not in substance. It is all a matter of deciding how much oikonomic decisions are left to the markets or, instead, to redistribution based on planning and control.

Politics and institutional power relations guide the oikonomic process in redistribution, not the rational economic agent’s chrematistic calculus as portrayed by standard economics.

Notwithstanding here, as in the other forms of oikonomic behaviour we have seen so far, this realm has become increasingly colonised and subordinated to the chrematistic logic in our modern free-market society. Thus, for instances, state policy and redistribution policy are subordinated to the need to counter-balance the adverse social and ecological side effects of entirely free markets. Alternatively, it is used as a subsidy to build infrastructures or other ways of supporting private enterprises and industry.

As the Portuguese sociologist João Bernardo noticed, decision-power increasingly being left to the markets means that the traditional restricted government (referring to that which we

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associate with conventional government institutions) is increasingly being overshadowed by what he termed the “amplified state” comprising all those instances with the power of taking decisions affecting the common good related to the markets. As he argued, once private actors grow in number and power, they relate directly to the markets or subordinate traditional political actors to their interests. Thus, increasingly private actors and not elected or nominated officials and representatives become those who take relevant decisions. Thereby, increasingly, local political and administrative institutions manage only to create and manage the market framework in which decisions are taken, while private actors make the relevant choices according to their interests.

Moreover, the more capitals become transregional and transnational, crossing administrative borders, regions and countries start competing to attract investments and money. Thus, they are left to the whims, ebbs and tides of the markets and at the mercy of decisions taken by non-elected financial speculators, direction boards of multinational companies and private actors using their “purchasing power”. Seen from that perspective, neoliberal economists arguing for the supposed benefits of free markets aim to transfer political power from the restricted state to the amplified one.

Notwithstanding, governments are still called to secure the ecological, social, institutional, ideological and technical infrastructures and superstructures required to maintain and enhance the chrematistic efficiency and competitiveness of the local, national and global oikonomies. Thus, a great deal of the produced wealth is either redistributed and reinvested in new transport and information infrastructures, formal education, research, innovation, police and security, or spent as subsidies for rescuing the financial sector and particular companies “too big to fail” from the crisis and the threat of chrematistic breakdown.

The critical point to observe here is that, as Polanyi showed from an empirical and historical perspective, markets have never been entirely free, nor can they without generating grave social, oikonomic and ecological imbalances and destruction. Thus, despite modern economists models’ assumption about free-market and untainted “rational maximizing behaviour”, the reality is that the political and administrative logic behind redistribution is a significant element of the oikonomic process – even for the USA where government spending is around 40% of the total GDP.

4. Commerce

Then, there is the fourth form of oikonomic behaviour identified by Polanyi, namely commerce which, as we saw, the Greeks named chrematistics, “the art of acquisition”. We acquire what we desire more in exchange for what we want less through exchanging goods and services. Reciprocally, the other person who agrees with the transaction receives something he values more in exchange for something he needs less – otherwise, he would have no incentive to make the exchange in the first place. Thus, both parties are seen to engage freely in the exchange process, each with their motives and benefiting from the process in use-value terms. Freedom, horizontality and mutual benefit are thus integral elements of commerce.

Nevertheless, we may go a step further here by considering the nature of true freedom more in-depth. As philosophers and psychologists know, and our legal system acknowledges, freedom has to do with consciousness and capabilities, as shown by Amartya Sen. It is only by being conscious of our inner drives and the available options we may choose in true freedom. Otherwise, we are just being driven by other forces or walking in the dark. Thereby,
although formally free, when behaving in markets out of need under unequal power relations, as it happens in monopoly or monopsony conditions, or when one party is compelled to engage in a commercial transaction with insufficient information, individuals are not acting in true freedom and consciousness. People may, thus, be duped to buy a pig in a poke and be abused due to unequal information and power relations. In that case, we are witnessing acquisition through superior force or merely unequal power relations, more akin to plunder than to free commerce.

Being conscious and having all needed information is, thus, a prerequisite of freedom. But this consciousness implies as well responsibility. Indeed, response-ability refers to our ability to respond. It is, thus, another way to understand freedom. At the same time, by assuming our freedom to choose, we carry as well our responsibilities. As the saying goes, our freedom goes up to the point where the freedom of others begins. Our rights are limited by the other’s rights. Freedom, responsibility and consciousness are thus intimately related.

The connection between freedom, consciousness and responsibility is reflected in our legal system when it acknowledges as mitigating factors the lack of deliberate and conscious behaviour. Seen from that perspective, we can say that the selfish, short-term chrematistic profit-oriented behaviour is not entirely free. By looking only at the small, immediate picture, we are not conscious of the profound interdependence which characterises our existence and is at the root of our lives and well-being, thus, not taking decisions that attend to our medium and long term interests. Like King Midas, who given the opportunity to choose a reward, asked for everything he touched being transformed into gold just to see his daughter being changed in a golden statue and his food and wine becoming uneatable exchange-values, we too take exchange-values for wealth, behaving in ways which do not attend our fundamental needs adequately. Although “freely” pursuing our chrematistic aims in the markets, by ignoring the true nature of wealth and the social and ecological character of our oikonomic interdependence, we too may be acting in ignorance of our broader interests and well-being. Indeed, in search of short-term chrematistic profits, we are over-exploiting our natural resources and our fellow humans in a process that generates growing ecological and social imbalances that negatively affect our well-being instead of increasing it. By buying or selling something in a market at an agreed price, we are helping bring forth and validate the world wherein we become what we become with others. Nevertheless, if we do not consider the other’s needs in this process, we act irresponsibly. We ignore that our well-being ultimately depends on others’ wealth and well-being too. It depends on the maintenance of the social and ecological balances which sustain our lives.

Thus, we could call “enlightened selfishness” free behaviour that acknowledges and respects our own needs and freedoms and responds to others’ needs and liberties. It is based not on a short-term, selfish chrematistic accumulation drive but on an empathic connection to our inner life’s needs and the life manifesting itself outside. It pursues multiple objectives and unless the assumed behaviour of the selfish “rational economic agent” aims to preserve and enhance the ecological and social balances our lives and our well-being depend on.

An important point to stress here is that following the “fundamental social law” in our chrematistic behaviour by supporting fair-trade, ethical investments and socially and ecologically sound consumption habits are not a matter of morals, but ethical and conscious free-choice. By becoming aware of the interdependent character of life and that we are not separated but part of a more extensive social and ecological network that sustains our lives and well-being, we may become truly free and responsible. By paying producers a fair price
for their products, according to their own needs, we sustain their capacity to continue to produce at the best of their capabilities in future. By supporting entrepreneurs in their undertaking, sharing both risks and rewards, lenders will increase their possibilities to receive the invested risk capital back with interests. Finally, by donating surplus capital to artists, educators, free-thinkers and others to freely follow and manifest their creativity and consciousness, we support them to create and regenerate our culture, increasing our collective cultural heritage and wealth. We just have to ask ourselves about the wealth our cultural and intellectual heritage represents to see how vital free cultural expression is. Leibniz and Newton creating differential calculus, Van Gogh painting or Antoni Gaudi devoting himself to design and build La Sagrada Familia cathedral were not following a chrematistic calculus but were following their inspirational callings. But they had to be sustained to do so. Thus, gift, patronage and free artistic, intellectual and cultural creation are essential aspects of “the cause and origin of the wealth of Nations”.

Conversely, if we only look at our short-term chrematistic profit, we may be increasing our bank accounts but are at the same time reducing our well-being by affecting our social and ecological balances negatively, living isolated and solitary lives – each one aiming to get as much as possible for himself and giving as little to the others. As argued elsewhere, nowhere are the dangers of this myopic mistaking of the chrematistic individual profit as constituting our oikonomic behaviour’s main aim more evident than in the growing financial markets. By speculatively investing in all kinds of assets, thus increasing the financialisation of the oikonomy, excess capital generates all sorts of inflationary bubbles, which expand the monetary wealth of those able to participate in these markets. Notwithstanding, once no new wealth in use-value terms is being generated by simply buying a financial asset to sell it at a monetary profit later, this kind of enriching has to be seen as a net transfer of purchasing power to the already well-off at the expenses of those who struggle to make ends meet. As cancer cells, whose metabolic functions are no longer at the service of the larger organism, increasingly subordinating the whole organism to their growth needs instead, excess capital is increasingly being speculatively invested to “buy cheap and sell at a profit” – further concentrating purchasing power in the hand of those who already possess more than they need and deepening the income distribution.

Aristotle already pointed to the dangers of making a profit on money alone, dissociated from the use-value logic. As he argued, as long as chrematistics is concerned with the “art of living and living well”, it is

“necessary and honourable, while that which consists in exchange is justly censured; for it is unnatural, and a mode by which men gain from one another. The most hated sort, and with the greatest reason, is usury, which makes a gain out of money itself, and not from the natural object of it. For money was intended to be used in exchange, but not to increase at interest. And this term interest, which means birth of money from money, is applied to the breeding of money because the offspring resembles the parent. Wherefore of all modes of getting wealth this is the most unnatural.”


Aristotle, op. cit., p. 17.
Here too, Aristotle foresaw the dangers of financial capital, which, indeed, has become one if not the primary source of chrematistic inequality in our world, with the added drawback of being completely detached from the use-value logic. As with bitcoins who only exist in the virtual world, they have generated substantial monetary fortunes without any new wealth having been created by them. The same happens with artwork and real estate bought for speculative motives alone. It happens with all kinds of financial speculations in markets where new money is continuously being pumped in, creating inflationary bubbles detached from real new wealth. Thus, as for cancer cells, financial growth is sustaining and promoting further growth. A Midas dream come true. But, as Midas did, we ignore our myopic view at our own peril.

Chrematistics is based on the commodity form, its major prerequisite, and thus on the commodification of reality in the sense that things and processes have to be open to being possessed, sold and bought. It means objectification of reality, a separation between the possessing subject and the possessed object. We feel separated from our reality, relating to things alienated from us, sold to or bought from someone else. Humans are not rooted in the land or their home. Thereby, land and real estate are open to being bought and sold according to prices alone. We as subjects may sell our labour as something external to ourselves, carrying out a job or a function without identifying with it or even feeling related to it. Thereby, we are separating our private from our professional life. Being desacralised and losing their special aura that relates given realities and things to particular individuals or communities is a prerequisite of the commodity form and quantitative market equivalence between different qualitative relations. Thus, as Max Weber had already shown, a process of rationalisation from which modern law and institutions emerged had to occur.\(^{23}\) Reality is analysed “rationally” and objectively, in quantitative and reductionist terms, not according to our tradition, values, and morals. It requires as well the needed rational structural and institutional settings whereby the free act of transaction and private property is protected by law. Notwithstanding, we reduce our consciousness to chrematistic calculus by separating our chrematistic behaviour from our broader values and beliefs. Moreover, as Marx already showed by pointing to the fetishism of the commodity form, we do so in profoundly alienated ways. We are ignoring the social and ecological relations which underlie that which we are trading.

The known slogan “the world is not for sale” is a clear reaction to this process. By acknowledging that certain realities, lands, landscapes, or people are not simply open to being bought and sold but need to be protected, limits to the chrematistic logic are sought. A sacred site, a particular species or a living being are thus attributed and given rights as a subject, for their own rights. These limits to our freedom may be set voluntarily due to an individual ethical choice acknowledging others’ freedom and needs, or it may be imposed from the outside through laws, regulations and prohibitions limiting personal autonomy. But, it needs to be done.

Like a seed sprouting and eventually becoming a tree, life happens as a continuous adaptation to the environment. We become what we are by adapting and restraining our desires to the outer limits and circumstances, in a dance between the inner, autopoietic force

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\(^{23}\) Weber began his studies on rationalisation with his highly influential *The Protestant Ethic and the Spirit of Capitalism* (original German *Die protestantische Ethik und der Geist des Kapitalismus*, first published in 1904/1905), although it is a central theme which pervades his entire work. See also his *Economy and Society* (original German *Wirtschaft und Gesellschaft. Grundriß der verstehenden Soziologie*, first published posthumously in 1922-25).
and our environment. Living beings depend on their relations and the resources obtained from their environment. Thus, living beings thrive best when they manage to simultaneously attend to their inner needs and the balances of their environment and the needs of others on which they depend.

Notwithstanding, these needed limits to the individual short-term-focused chrematistic calculus are wholly ignored by neoliberal economists and their belief in the automatic virtues of the "invisible hand" driving personal greed towards the common good. It is also a requirement of our modern industrial society and the free-market institutional ordering of the oikonomic life. As Polanyi recalled:

"Production is interaction of man and nature; if this process is to be organised through a self-regulating mechanism of barter and exchange, then man and nature must be brought into its orbit; they must be subject to supply and demand, that is, be dealt with as commodities, as goods produced for sale.

Such precisely was the arrangement under a market system. Man under the name of labor, nature under the name of land, were made available for sale; the use of labor could be universally bought and sold at a price called wages, and the use of land could be negotiated for a price called rent. There was a market for labour as well as for land, and supply and demand in either was regulated by the level of wages and rents, respectively; the fiction that labor and land were produced for sale was consistently upheld (...)

But labour and land are no other than the human beings themselves of which every society consists and the natural surroundings in which it exists. To include them in the market mechanism means to subordinate the substance of society itself to the laws of market."24

The same goes for money, which constitutes the blood circulating within the oikonomic organism, taking nutrients and energy, stimulating growth and regeneration, while eventually irrigating others poorly. It is a fundamental element for keeping markets alive and functioning. Thus, it had to be organised into markets, called financial markets. But it is not a true commodity in the sense of being produced for sale, but something brought into being by political and administrative choice, according to different power relations and interests of the actors affected by its existence and circulation. Nevertheless, in the face of this need for markets for labour, land, natural resources and money, the simple assumption that their supply follows the chrematistic logic and can, thus, be regulated by the "invisible hand" or market forces is simply false and misleading. In Polanyi words:

"The crucial point is this: labor, land, and money are essential elements of industry; they also must be organised in markets; in fact, these markets form an absolutely vital part of the economic system. But labor, land, and money are obviously not commodities; the postulate that anything that is bought and sold must have been produced for sale is emphatically untrue in regard to them. (...)"

24 Polanyi, op. cit., pp. 130-131 and 71, respectively.
Now (…), to allow the market mechanism to be sole director of the fate of human beings and their natural environment, indeed, even of the amount and use of purchasing power, would result in the demolition of society. For the alleged commodity ‘labor power’ cannot be shoved about, used indiscriminately, or even left unused, without affecting also the human individual who happens to be the bearer of this peculiar commodity. In disposing of a man’s labor power the system would, incidentally, dispose of the physical, psychological, and moral entity ‘man’ attached to that tag. Robed of the protective covering of cultural institutions, human beings would perish from the effects of social exposure (…). Nature would be reduced to its elements, neighborhoods and landscapes defiled, rivers polluted, military safety jeopardised, the power to produce food and raw materials destroyed. Finally, the market administration of purchasing power would periodically liquidate business enterprise, for shortages and surfeits of money would prove as disastrous to business as floods and droughts in primitive societies.”

Thereby, unless we consciously set limits to our chrematistic behaviour and our “freedom” to buy and sell in markets, empathically respecting hired labourer’s and Nature’s needs to keep on providing to the best of their capacity, limits have to be set externally. The visible hand of government intervention, directing the invisible, self-organized hand of the markets. The same needs to happen if we do not control the money supply and use our purchasing power in the best interests of all.

5. Plunder

Despite the neoliberal economists’ credo and assumptions about free markets, limits and regulations to markets have always existed and still abound. Indeed, oikonomic behaviour becomes predatory in the absence of limits to individual freedom, whether internal or external. Big fishes eat the smaller ones, and those in condition abuse their so-called market position and purchasing power to acquire even more money and power.

This leads us to the fifth basic form of oikonomic behaviour, ignored by modern economics and not considered by Polanyi neither, namely plunder. Through plunder and employing their superior force, people gain their living (or part of it) not by self-production, freely given gifts, redistribution or trade, but by taking for themselves by force. Moreover, while the other forms imply a voluntarily agreed relationship between subjects, plunder involves taking without consent or knowledge. It, therefore, includes all forms whereby individuals or whole groups seek to “live and live well” by seizing use-values not freely given, but acquired by dint of applying their superior force or through deceit.

To a certain extent, plunder may be a dimension or qualification of other oikonomic forms identified by Polanyi. For example, an unequal market relation may lead those in a stronger position to exploit it to get better trade deals. It often happens that within a redistribution framework, those at the top of the hierarchical pyramid end up redistributing a disproportional share of the product for themselves or use their position to gain improper benefits. In a reciprocity framework, someone may profit from taking without reciprocally giving back to the community, creating parasitic rather than symbiotic relationships. Lastly, even producing for

25 Ibid., p. 72.
subsistence, someone may over-exploit and plunder natural resources to make his living without respecting natural cycles and ecological regenerative requirements. In all these examples, plunder is merged with other forms of oikonomic behaviour, grounded on the abuse of unequal power relations and not an independent oikonomic way in itself.

Nevertheless, plunder exists as well as an independent type of oikonomic behaviour. It is a primary oikonomic form, mirroring prey-predator relations in nature. Indeed, it is a central dimension of our chrematistic relationship with Nature. By failing to recognise it as a subject with its rights, we plunder and over-exploit it for our benefit, without giving in return. It is a central element of “wild capitalism” too, where labourers in need are over-exploited, child labour is the norm and labour conditions appalling. It is an important, sometimes central aspect, in previous times, when armies plundered wherever they fought, lands and kingdoms were conquered, pirates sailed the seas and slaves were forced into labour. It is still important today, manifested in all kinds of corrupt criminal activities in which people use their power position to enrich themselves at others’ expenses. It happens with industrial fishing, intensive industrial agriculture and all our extractive over-exploitation of natural resources, plundering Nature for profits. It occurs in the financial markets where insider trading and information asymmetry are used and abused by those in a dominant position to become even more dominant or those like Bernie Madoff to make their fortunes by cheating on others.

Where do we go from here?

Having presented these five primary oikonomic forms that should constitute the inquiry field of oikonomics, it may be essential to note that life is always whole and changing. Thereby, although each one possesses its logic and boundaries, these five primary oikonomic forms cannot be seen as separate, self-contained realities. On the contrary, individual oikonomic activities and oikonomic development constitute the emergent, visible result of different combinations, arrangements and particular modalities and forms of self-sufficiency, reciprocity, redistribution, chrematistic and plunder-dominated oikonomic behaviour. Seen on their own, they have to be seen as “ideal types” or “pure types” in the Weberian sense. Nevertheless, “ideal” is not to be confounded with “average” or related to a quantitative measure. Neither is the term “ideal” to be taken as referring to ideal in the sense of perfection. It relates to the world of ideas, of thought images (German: Gedankenbilder). As ideal types, they highlight the essential aspects of a given phenomenon by pointing to their essential elements and patterns: idea-constructs that help provide meaning to the seemingly chaotic diversity perceived by our senses. They allow us to illuminate concrete realities by pointing to some of their underlying dynamics and essential features. In this sense, they may be seen as what Goethe termed the Urphänomen, the archetypical phenomenon.

While externally engaging in chrematistic free-market competition, commercial companies are internally organized as redistributive systems. Conversely, public companies may pursue redistributive objectives while including, internally, results-based remuneration policies to stimulate higher productivity and even stimulate meritocratic and competitive internal labour relations. Although there may also be chrematistic considerations behind philanthropic activity – tax exemptions included – the main driving force behind the charitable actions of Carnegie, Rockefeller, Ford, Gates, Buffet, Carter, Clinton or Zuckerberg, is of another nature. Notwithstanding, it shows how excelling in the chrematistic art of acquiring money may be an essential means to acquire wealth to be gifted or donated, reinforcing the donors’ social status and identity within a gift-oi-konomy mind setting.

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Conversely, to give other examples, social position in Soviet nomenklatura was an essential means towards individual wealth accumulation. It is still the case of contemporary China’s communist party and Western-style democratic institutions. In all of them, a political career may be pursued for the sake of personal gain, either through more or less corrupt practices or through profiting from the so-called revolving doors between corporate and political establishments.

Thriving and growing GDP and the ability to profit from the global market economy have always been the basis of the modern redistributing welfare state (the European and particularly the Scandinavian models being a case in point). It is central to maintaining and reinforcing centralised power structures and regimes, like the oil-exporting oikonomies of the Middle East or China, where ongoing chrematistic growth has been a significant aspect of legitimising the communist’s one-party grip on power.

At the same time, nowadays, governments of all colours, from China to Switzerland, Norway and Saudi Arabia, have become major actors in the global financial markets, speculatively investing their sovereign funds for profit. At the individual level, we pursue our personal goals and try to satisfy our fundamental needs by participating in and combining these five primary oikonomic forms differently according to each individual and each period of our lives. Some needs we meet self-sufficiently, producing the necessary satisfiers for ourselves; others we may receive as gifts; others from redistribution and still others through acquisition, freely engaging in commerce. We may also take by force, pursuing the “art of living and living well” through theft, exploitation of natural resources or our fellow humans. At all times, individual and collective wealth results from the combination of all of them.

In any case, as can be seen from these examples, the oikonomic reality and our human behaviour cannot be reduced to a mathematical formula or adequately represented by abstract reductionists models. It is a changing reality that has to be approached in living, phenomenological terms as a whole. Nor can, contrary to the hegemonic, reductionist view, “the art of living and living well” be assessed and evaluated by simply looking at a person’s or nation’s chrematistic income or by the monetary value of the possessed assets. It is a process that goes far beyond easily measurable and quantifiable chrematistics. Thereby, the oikonomic process must be understood as an interdependent part of more extensive and ever-changing socio-ecological processes with rules and logic beyond purely chrematistic ones. Social structures and processes, cultural values and dynamics, environmental changes, ecological dynamics, and changing political and institutional power structures are elements that shape the oikonomic process while being transformed and (co)reproduced by it.

In the same way as the functioning of a given organ like the heart or lungs cannot be fully understood if we do not see the way they relate, transform and are transformed by the other organs and the organism as a whole, we cannot understand the oikonomic process as separate from its broader social and ecological contexts. The oikonomy is both the product and the producer of its socio-cultural and natural environment. As for an organism, the oikonomic process is essentially a continuous process of regeneration. Healthy processes leading to a healthy organism, unhealthy to unbalances, crisis and decline.

By sticking to a reduced and misleading perspective on reality in economics, we came to take the parts for the whole and the means for the ends. Moreover, we lost touch with reality by promoting oikonomic development practices at the individual and the collective level, which increasingly put us at odds with the “art of living and living well”. Growing social polarization,
Chrematistic inequality and ecological imbalances are just some of the visible results of this process and our inability to perceive the true nature of the “origin and cause of wealth”. Thus, enlarging our consciousness and removing economists and modern economics from their ivory towers to look at the real-world oikonomy is not just a matter of scientific interest. It may be a matter, if not of survival, of how we live and wish to live.

As we saw, enlarging our oikonomic consciousness and understanding is a prerequisite to preserving our freedom and autonomy. To perceive that fraternity, not as a moral imperative, but as an ethical choice based on a proper understanding of the nature of wealth and interdependence of life, is at the essence of “the art of living and living well”. By subordinating our oikonomic behaviour to the use-value logic, the satisfaction of present and future generations’ fundamental human needs, and by recognizing that environmental stability and balanced ecosystem’s dynamics are an essential goal of the oikonomos, the management of our home, we may rediscover and promote an oikonomy “as if people and life matter”.

By acknowledging the interdependency at the heart of our existence and well-being, we may voluntarily behave in empathic rather than egoistic ways. We may, thus, freely “give each one according to his needs so that each one can give according to his enhanced capacities”. But this requires an utterly different look and understanding of what the oikonomy is all about in the first place. It requires us to enlarge our consciousness, our freedom and our responsibility. The alternative is already here for all to see: growing external regulations and limits to face the growing social, ecological and financial imbalances or deepening social polarization, environmental crisis, and oikonomic inequality resulting from short-sighted abuses and plunder relations.

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You may post and read comments on this paper at https://rwer.wordpress.com/comments-on-rwer-issue-no-96/
"The world will not be destroyed by those who do evil, but by those who watch them without doing anything" – Albert Einstein.

Falsification

Science tells us that humankind is now in a state far more perilous than any it has ever known, perhaps ever imagined, and that its cause is the impact that the economy has come to have on planet Earth. Meanwhile the daily news tells us that around the world there is rapid acceleration – at least as rapid as in the 1930s – of tyranny, racism and anti-democracy linked to the economy’s forty-year upward redistribution of wealth and income.

We also know that the economy that has come to have these colossal negativities has been engineered, steered, and rationalized by the beliefs, policies, and teachings of an economics variously called “neoclassical”, “mainstream”, “orthodox” and “neoliberal”. But it was never economics’ intention to lead humanity to the cliff’s edge. Quite the opposite: it was expected to lead humans towards better and better lives forever more. But for some time now science has been telling us that the opposite will soon happen, that the economy is now an existential threat to civilization. In other words, never has a theoretical system been so thoroughly falsified as neoliberal economics.

How this falsification came about resembles major falsifications that have occurred in astronomy and physics over the centuries. It was, for example, when Newtonian physics was applied to a much larger scale of physical phenomena that the falsity of its most fundamental principles was discovered. Similarly, it is our observing the effects of the hugely increased scale of the economy and of its corporate and financial entities that has falsified traditional economics. But in economics, conceptual foundations are by tradition tied to an ideology, a system of belief, rather than conceived purely as a means of understanding reality. Whereas the conceptual foundations of physics were in the 20th century changed radically and more than once, the conceptual foundations of today’s mainstream economics are little changed from those of the 19th century.

In physics, falsifications are not a problem. To the contrary, they are something for physicists to celebrate because they mean they have come closer to understanding the physical world, and this satisfies the truth-seeking ethos that rules their profession. But, except on its fringes, the ethos that governs economics is quite different. So different that today many economists are dedicated to covering up the falsification of traditional economics, and many more to covering up the degree of its falsification, for example blanking the non-linearity and irreversibility of ecological change, referring to “climate change” or “global warming” but never to ecological collapse or extinction. And it is this latter group that is the most dangerous to humanity because there is a strong chance that they will succeed in stalling radical recreation of the economy until global tipping points are passed and it is too late to save humanity and its civilization.
We know that the economy has created these colossal negativities under the guidance of a variety of economics whose underlying theoretical system:

1. regards the economy’s and the Earth’s life support system as functioning independently of the economy,
2. conceptualizes cause and effect in the economy as functioning in the universal time of the natural world rather than in historical time,
3. assumes quantitative change to be linear and reversible,
4. treats market-value as an absolute quantitative order, rather than a relative one, and thereby fundamentally misunderstands its favorite indicator, GDP,
5. holds that an economy left to itself tends toward equilibriums and that it distributes with fairness its rewards to humanity,
6. conceptualizes humanity as consisting of autonomous units analogous to the atoms of classical mechanics, and thereby excludes society, as it does the biosphere, from its basic ontology,
7. denies the power relations that in today’s economy are the main determinants of market outcomes,
8. denies that there is an upper limit to economic growth,
9. leaves unexplained the huge upward redistribution of wealth and income of the last forty years.
10. hides downward redistribution of wealth and income as an alternative to economic growth.

Never has a set of beliefs about the real world been more comprehensively falsified nor more of a danger to humankind than neoliberal economics. But it remains the dominate intellectual force directing the global economy and continues to control the education/miseducation of the young with regards to the economy. Every year Economics 101 is used to covertly indoctrinate millions of university students into the neoliberal ideology, and thereby further reduce our chance of avoiding civilizational breakdown, population collapse and possible extinction.

This historical situation puts economists who are not post-science in a peculiar position. The foremost problem we face today is not discovering new truths about the economy, but of overcoming the censorship in our classrooms and communications with the public of what we, thanks to the natural sciences and the daily news, already know about the economy.

How can we overcome this censorship?

Censorship is an institutional problem

There has long been no shortage of new paradigms proposed for economics. In this issue, for example, there are three. However – and this also is in this issue – “In order to become reality, paradigm shifts need to be institutionalized” (Bäuerle, p. 92).

It has been naive of people like me to think that merely bringing into wider professional view the fundamental ineptitude of traditional economics for understanding and guiding today’s world would significantly change the paradigm situation. After a quarter century of effort, except for the occasional paragraph and ad hoc chapter, the basic message and conceptual
framework in the Economics 101 textbook is unchanged. At the present rate of reform it would take another 500 years before students would be taught to see the economy in a way suitable for this century.

But now with time rapidly running out, it is absolutely essential that we find a way of quickly reversing economics’ role in humanity’s greatest ever crisis. To do so it is imperative that post-neoliberal (PNL) economists immediately find a way to come together to create for economics a broad empirical-based paradigm, and deliver it to a large influential audience.

I see a possible way of doing this. I call it Economics 999. Although the content of Economics 101 has only changed superficially, the security of its institutional position is greatly reduced from what it was only a few years ago. Its vulnerability has come about through four recent historical developments: the growth of digital technology, the current pandemic, the growing public awareness of the “Climate Emergency” and, most strategic, the now emerging world-wide growth of student activism.

I will first offer a rough outline of Economics 999’s operational structure, and then explain how it could be fully created and delivered world-wide in the space of a few years.

Operational structure of 999

Textbook
- An independently published textbook of a length roughly the same as the standard Economics 101 textbook.
- Its digital edition will be free and its paperback edition low-priced.
- It will have a team of 10 to 30 authors (including at least one natural scientist) and several editors.
- The first edition will appear within a year, followed by new editions each year as post-neoliberal economics develops its paradigm.

Lectures
- Open-access online lectures corresponding to the textbook’s chapters and subchapters will be available in English and other languages.
- In-person lectures will be available at some universities, especially leading ones.

Academic Credit for Economics 999 will gradually become available at universities, especially in the United States.

Public Visibility
- Students around the world will campaign loudly for their university to offer credit and lecture hall space, not just for Economics 101, but also for Economics 999.
- Faculty, especially in the natural sciences, will provide public support for Economics 999.
- Because initially the student campaign’s requests will be rejected, there will be numerous on-campus protests, and with some universities deploying violence against the 999 supporters.

1 There have been Economics 101 textbooks published that go some way toward serious reform, but rarely adopted by higher education institutions.
These ongoing happenings will bring Economics 999 and post-neoliberal economics lots of attention from both mass and social media, including explanations of the differences between 101 and 999 economics.

These ongoing happenings will also lead millions of Economics 101 students to question what they are being taught.

Creating 999

The creation of the Economics 999 movement requires no special funding. But it does require post-neoliberal economists to work together in a way we are not accustomed to doing. By tradition we usually work within small, isolated groups defined by alternative approaches to specific sections and dimensions of traditional economics. But because these groups and their achievements remain disconnected, usually both conceptually and terminologically, they lack worldly import and pose no threat to economics' traditional paradigm. Today's historical situation, however, both requires and enables us to bring these alternative approaches together under an overarching conceptual framework, in other words, to create a new paradigm for economics generally and immediately begin to institutionalize it.

The first step in creating the Economics 999 textbook could be to form a digital discussion group consisting of a representative cross-section of post-neoliberal economists who will:

1. Create a working outline of the book,
2. Compile a list of possible authors of the chapters, and
3. Select a small team of editors.

With input from blog comments, this could be done in a month. It would then be up to the editors to:

1. Refine the book’s outline,
2. Agree on a broad terminological framework,
3. Sketch the book’s introduction, which will summarize the new paradigm,
4. Decide who to invite as authors,
5. Send them invitations that have a submission deadline and that emphasize the importance of writing their chapters in the context of both the new paradigm and our historical time.

After several months of editing and formatting (the WEA could do the latter), the paperback edition could be published on Amazon’s KDP and the digital edition published probably as a PDF.

As publication of the textbook nears, people need to be recruited and filmed for the textbook’s video lecture series. Finding volunteers should not be difficult, and the textbook’s chapter authors are a natural place to start.

It will then be time to begin to hook up Economics 999 with relevant student activist groups around the world. (I have a recent graduate compiling a contact list.) Experience tells me that the best and fastest (but rarely available) way to recruit large numbers of students to idealistic causes is to show how the cause relates directly to their on-campus experience. Economics 999 would be an organizer’s dream, given that its on-campus promoters will ask that students who complete the course be given academic credit in the same way as are

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Because billionaires of all varieties will find Economics 999 threatening, it is likely they will try to subvert it in various ways, especially via donations. It is extremely important that this is not allowed to happen.
students who complete Economics 101. They will also be seeking large-screen lecture space for its video lectures, and, as interest develops, space for discussion and in-person lectures. Because of the radical changes in university teaching methods caused by the pandemic, the Economics 999’s initial online setup will be seen as ordinary.

Once Economics 999 is launched, it is difficult to predict what exactly will happen, but it is even more difficult to see, given what it means to the young, how the Economics 101 faithful could make it disappear. Meanwhile, never has intergenerational generosity been so needed.

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