

CAN ECOLOGICAL MODERNISATION CONTAIN CLIMATE CHANGE? AN ECO-SOCIALIST PERSPECTIVE

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Ecological modernisation is the process of seeking environmental sustainability and climate change mitigation and adaptation through the adoption of more efficient, environmentally sustainable, and low-carbon energy sources and manufacturing processes. It has become a virtually hegemonic stance, particularly in the European Union but also in North America, Australasia, and China (Machin 2019). Dieter Helm (2017: 245) exhibits the hubris of ecological modernisation in his bold assertion that climate change is a ‘solvable problem only with the march of new technologies’.

The key components of ecological modernisation were set out in a book on *The Politics of the Environment* (Carter 2007: 228). One is that ‘ecological criteria must be built into the production process’. On the supply side, this requires ‘improving efficiency in ways that have environmental benefits.’ Examples include savings ‘made by straightforward technological fixes to reduce waste, and hence pollution’ but also through changes in ‘manufacturing processes so that large-scale systems such as “smoke-stack” industries, that can never be made ecologically sound, are gradually phased out’. Then, on the demand side, the rise of ‘green consumerism’ is seen to be driving further change because it ‘stimulate[s] demand for goods that minimise environmental damage, both in the way they are made (by using recycled materials or minimising packaging) and in their impact when used (by containing less harmful chemicals such as phosphate free washing powders)’.

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An eco-socialist perspective’**

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Putting the supply and demand side effects together points to ‘growing markets in green technologies such as air pollution abatement equipment and alternative forms of energy’.

During the last decade, changes of this sort have gained momentum. A networked, international movement for legal action intended to prevent catastrophic climate change has promoted replacement of fossil fuels with purportedly renewable ones, particularly solar and wind power but, more recently, hydrogen and lithium-based batteries for electric vehicles too. Members of this movement include former US Vice-President Al Gore, various conservation and wilderness societies, and many environmentalists including within the climate movement. Sunrise industries that are touting energy conservation, energy efficiency, and renewable resources have been working with environmental groups to make the case for tough targets to stimulate markets for their products.

However, while renewable energy sources, including solar, wind, and geothermal, have the potential to be part of the process of mitigating climate change, they are not a panacea. These sources of energy also have the problem of what renewable-energy engineers call *Dunkelflaute*, which means the ‘dark doldrums’. At night, solar panels do not capture any energy; while wind speed is generally lower.

Moreover, renewable energy generation requires infrastructure that is produced by manufacturing processes that depend on fossil fuels, entail much embedded energy and land space, and require rare earth metals the mining of which is environmentally destructive.

Last but not least, ecological modernisation is very weak in addressing social justice issues, such as who has access to the benefits of new technologies and who does not (Singer 2019), and who most suffers the consequences of their development.

In keeping with the thinking of climate justice activists who call for ‘system change, not climate change’, this article argues that deep climate change mitigation and adaptation will require a more systemic change – indeed, a socio-ecological revolution – both globally and within nation-states.

Conceptions of ecological modernisation

There are two principal genres of ecological modernisation: reflexive modernisation and ecomodernism. The former emerged in Europe and the latter in the United States, but they have much in common. Both focus on techno-fixes, with the latter putting more focus on geo-engineering.

Reflexive modernisation

Reflexive modernisation is emphasised in the work of prominent German sociologist Ulrich Beck. His books about ‘risk society’ tended to eschew any specific reference to capitalism, repeatedly referring to it as ‘industrial modernity’ or ‘Western modernity’ (Beck 2007). Nevertheless, he recognised that:

in the light of climate change, the apparently independent and autonomous system of industrial modernisation has begun a process of self-dissolution and self-transformation. This radical turn marks the current phase in which modernisation is reflexive, which means we have to open up to global dialogues and conflicts about redefining modernity [...] It has to include multiple extra-European voices, experiences and expectations concerning the future of modernity (Beck 2010: 264).

This implies a form of ‘cosmopolitanism’ that transcends national interests and has the potential to create a green modernity.

In a somewhat similar vein, John Urry (2011: 16) has advocated a post-carbon sociology that ‘emphasizes how modernity has consisted of an essentially carbonized modern world’. He defines a post-carbon society as a society that has transcended the current reliance on fossil fuels and fossil-fuel driven technologies, such as cars dependent on the internal combustion engine. Urry (2011: 100) forcefully contends that ‘Climate change politics involves campaigning not for abundance or growing abundance now, so as to ensure reasonable abundance in the long term and in other parts of the globe’. While much of what he writes is critical of existing capitalism, he does not call for the transcendence of the capitalist world system *per se*. Instead, Urry (2011: 118) advocates ‘resource capitalism’ which relies upon ecological modernisation and recognises that ‘there is a limited capability to supply resources and to absorb pollution’.

Australian environmental social scientists Peter Christoff and Robyn Eckersley (2013) argue for both reflexive modernisation and reflexive globalisation. The globalisation aspect is inherent, given that modernisation, which has entailed population growth and technological innovation, has been the primary driver of global environmental change, a process that has been accentuated under the neoliberal phase of economic globalisation. Christoff and Eckersley (2013: 189-204) posit that these dual processes need to undergo change to incorporate the following:

- reflexive governance which entails adapting the established set of good governance principles, such as the rule of law, the absence of corruption, transparency, participation, accountability, efficiency, and effectiveness, to globalisation
- extension of the notion of accountability to responsibility that includes a ‘critical understanding of the historical conditions and the social structures that systematically produce environmental injustices across space and time’
- adoption of the ‘precautionary principle’ which reduces exposure to - and adding to-global risks, such as climate change and biodiversity loss
- reflexive consumption which incorporates the principle of ecologically responsible consumption as a form of ecological citizenship in the global system
- reflexive production which ‘requires the manufacturer to take environmental responsibility for its product throughout its entire life cycle’, including resource extraction, use, disposal, reclamation, or recycling
- greening both national and international governance

Christoff and Eckersley believe that planetary boundaries should provide ‘ecological ceilings or safe sustainability boundaries’ on economic activity that will eventually result in *absolute*, rather than relative, decoupling from resource depletion. However, in the long run, such a decoupling process may constitute wishful thinking that prevents contemplating post-capitalist alternatives. Indeed, Christoff and Eckersley (2013: 206) concede: ‘The globalisation and transnationalization of capitalism has [*sic*] made reflexive governance increasingly difficult’, particularly in the ‘advancing and new economies’, presumably such as China, where notions of ecological governance and citizenship remain weak.

Ecomodernism

This second principal current within ecological modernisation regards a wide array of technological innovations as the solution to the ecological and climate crises. It has taken on different guises, some of them politically right-of-centre and others left-of-centre.

In its conservative form, US ecomodernism tends to be more critical of environmentalism than does the European ecological modernisation which mainstream environmentalists and climate activists generally advocate. Its character and influence owe much to the establishment of the Breakthrough Institute, a US-based think tank set up by Michael Shellenberger and Ted Nordhaus in 2003. The Breakthrough Institute boldly and idealistically proclaims on its website:

We believe that ecological vibrancy results from human prosperity, not the other way around. Meeting people's needs is both an ethical imperative and a pre-condition for societal concern about nature. Technological innovation, particularly in energy and agriculture, can enable us to meet both human needs and reduce our reliance on natural resources. And clean energy technologies are key to creating a high-energy planet without overheating the climate (Breakthrough Institute 2021).

The Breakthrough Institute favours 'clean energy', which includes not only solar and wind energy but also nuclear energy, over carbon pricing mechanisms. It also promotes industrial agriculture, including genetically modified foods. It adopted a bipartisan approach in a report titled *Partisan Power*, published with the liberal Brookings Institute and the conservative American Enterprise Institute. However, much to the annoyance of traditional conservatives, that report advocated some government support for its technological proposals.

A more politically centrist version of ecomodernism is implied by the work of Jonathan Symons (2019) who regards ecomodernism to be a social democratic response to global ecological problems. He argues that 'ecomodernists generally advocate reforming, rather than overthrowing, capitalism' and 'seek to invest wealth generated by capitalism in low-carbon innovation' (Symons 2019: 61). Symons (2019: 68) also asserts that ecomodernists advocate 'greater social equality'. He offers six summary propositions for his version of ecomodernism: first, climate change constitutes a serious threat; second, it should be a public policy priority; third, aggressive climate change mitigation would be politically

impossible with existing technologies, including renewable energy sources as they presently exist; fourth, there is therefore a need for more additional low-carbon technologies; fifth, the state has played a major role in implementing technological innovations; and sixth, climate activists should therefore push for greater state involvement in low-carbon technologies (Symons 2019: 113-4).

Further to the left are some self-described socialists who have also adopted ecomodernist thinking. One of them, Leigh Phillips (2014), who is a Marxist, is a staunch advocate of economic growth and a wide array of technological innovations, such as new materials to replace steel and concrete, improved battery and energy storage technologies, and electric cars. He confidently exclaims: ‘We must push through the Anthropocene, indeed *accelerate* our modernity, and accept our species’ dominion over the Earth’ (Phillips 2014: 186).

The US-based radical magazine *Jacobin* devoted articles in the second half of its summer 2017 special issue titled *Earth, Wind, and Fire* to the analysis of ecomodernism, prompting a critical assessment by Foster and Clark (2020: 211) that argues:

The ecological crisis brought by capitalism is used here to justify the setting aside of all genuine ecological values. The issue’s contributors endorse a ‘Good Anthropocene’, or a renewed conquest of nature, as a means of perpetuating the basic contours of present-day commodity society, including most disastrously, its imperative for unlimited exponential growth.

Capitalism is a global economic system that, in its drive for profits, requires ongoing accumulation and expansion. As Harvey (2014: 222) observes, ‘[c]apital is always about growth and it necessarily grows at a compound rate’. Global capitalism fosters a treadmill of production and consumption primarily for the purpose of generating profits for the few and, in the process, because they are of lesser importance relative to profit-making, sacrifices both human needs and environmental sustainability. While some components of ecological modernisation have the potential to serve as important mitigation and adaptation strategies, unfortunately, all forms of ecological modernisation tend to be oblivious to social justice issues or, at best, pay them lip service. At the same time, its solutions fail to address the features of capitalism that created our current socio-ecological dilemma.

As Foster *et al.* (2010: 5) assert, under capitalism: ‘energy savings are used to promote new capital formations and the proliferation of commodities, demanding even more resources’. Instead, what is needed is to make technological innovations that are more environmentally sustainable and energy-efficient part of a shift to a steady-state or net zero-growth global economy. Only then are they able to circumvent the ‘Jevons paradox’ or rebound effect, which arises when technological progress or government policy increases the efficiency with which a resource is used, but the falling cost then leads to rising consumption.

Ecological modernisation as a dimension of green capitalism

Ecological modernisation has become a central component of green capitalism. Just as the capitalist economy operated on other forms of energy prior to the Industrial Revolution, capitalism could theoretically operate on renewable energy sources. With this presumed intent, the fossil-fuel rich Koch brothers have become major investors in wind farms, solar energy, and biofuel projects (Greenpeace 2010). Bill Gates is another multi-billionaire capitalist adopting ecological modernisation. Gates broadened his attention from energy poverty in developing countries to concern with climate change when he met with two former Microsoft colleagues in 2006 who were starting NGOs focusing on energy and climate change (Gates 2021: 7). In his own words, ‘the world needs to provide more energy so the poorest can thrive, but we need to provide energy without releasing any more greenhouse gases’. Despite the emissions generated directly by his own activities and the companies in which he has investments, Gates (2021: 8) boldly asserts that humanity needs to take three steps to avoid a global climate catastrophe: achieve net zero emissions; deploy existing tools, such as solar and wind energy, at a faster and smarter pace; and create and roll out ‘breakthrough technologies that can take us the rest of the way’.

To walk the talk, Gates has invested in various clean energy companies, invested \$100 million into a start-up company to design a next-generation nuclear power plant that would produce clean electricity and very little nuclear waste. He has divested all his direct holdings in oil and natural and gas companies (in 2019) – as did the trust that manages Bill and Melinda Gates Foundation’s endowment – noting that he has not had investments

in coal companies for several years (Gates 2021: 10). Shortly prior to the 2015 UN Paris change conference, Gates joined the Breakthrough Energy Coalition, now simply called Breakthrough Energy, which has invested in zero-carbon technologies and supports early-stage clean energy research.

In this context, it should be noted that subalterns around the world are increasingly having their land and labour expropriated by mining companies, including ones that are providing resources for renewable energy operations and supposedly green technologies, such as electric cars and autonomous vehicles (Arbodela 2020). This pattern, we suggest, is to be expected, given the adoption of a 'solution' that created the problem in the first place.

Renewable energy generators require equipment and buildings that must be produced by manufacturing processes that require fossil fuels and mineral resources. As Wall (2010: 11) observes, 'Even a renewable energy capitalism would still tend to degrade the environment through commodification of nature'. Ted Trainer (2007: 2) acknowledges the superiority of renewable energy sources over fossil fuels but maintains that the 'very high levels of production and consumption and therefore of energy use that we have in today's consumer-capitalist society cannot be contained by renewable sources of energy'. Wind and solar electricity generation requires very large parcels of land, which Australia for example has, much of it consisting of land over which Indigenous peoples have native title rights. In other parts of the world, such as much of Europe and Japan, a transition to 100 percent renewable energy would be difficult because of its land requirements. However, offshore wind is increasingly being used to offset land constraints.

It is also important to observe that renewable energy and the digital economy are highly reliant in their present forms upon rare earth metals (Pitron 2020). These are found in terrestrial rocks in infinitesimal amounts and are a subset of some 30 raw materials often associated with more abundant metals, such as iron, copper, zinc, bauxite and lead. Extracting rare earth metals also entails huge amounts of water in the purification process. The extraction of cobalt, which is used for lithium-ion batteries in electric cars, requires heavy physical labour with picks and shovels and has resulted in the pollution of nearby streams when implemented in the Democratic Republic of Congo. The manufacture of laptop computers and mobile phones accounts for up to 19 percent of global production of rare metals such as palladium and 23 percent of cobalt (Pitron 2020: 42). The

mining of lithium, a white metal lying below the salt flats of Bolivia, Chile, and Argentina, and a component for batteries in electric cars, requires huge volumes of water, thus depriving local communities of an essential resource for their livelihoods. As McIntosh (2020: 143) observes, the ‘shepherds of the Atacama Desert in Chile fear for their future as the battery boom opens up huge demand for the lithium mined there’. Furthermore, the extraction of rare metals may result in an array of negative health consequences, ranging from children not developing teeth to getting cancer (Pitron 2020: 27-8). Pitron argues that the scarcity of rare metals is a monumental issue that could spark geopolitical conflict, particularly given that China currently dominates their production.

That ecological modernisation constitutes the overarching agenda of climate capitalism is illustrated in two anthropological case studies. The first of these is the case of a wind power development project in the Isthmus of Tehuantepec, by Leppert and Barrio (2022) who analyse what they see as a case of *green neoliberalism* involving a public-private partnership between a renewable energy company and the Mexican state. Ecolica del Sur, a multinational renewable energy corporation supported by Japanese and Mexican investors, approached the community leaders of Binniza (pseudonym), a small Zapotec indigenous town. While the project has the potential to reduce greenhouse gas emissions, it exacerbated existing class and ethnic inequities in Binniza. Leppert and Barrio report:

The installation of wind turbines was to take place on agricultural lands, which required the company to pay a tax to the town’s local government for the change of soil use from agricultural to industrial. The municipal president at the time negotiated an amount that landowners considered dismal (3.5 million pesos). The project was deployed over two thousand hectares of land, but the president and company agreed that the tax would only be paid for each eight-square-meter area covered by the base of the turbines [...] [T]he landowners attempted to amicably resolve this matter with the state government and the company through talks, they were once again ignored, pushing them to carry out yet another blockade and halt the construction project. In this particular instance, their efforts proved futile, and the tax amount was not changed (Leppert and Barrio 2022: 325).

The installation of turbines entailed the construction of raised roads that dissected agricultural fields and adversely impacted water drainage and irrigation patterns, resulting in the flooding of some fields and lack of sufficient water for others. Some landowners also complained that the company had understated the noise generated by the wind turbines.

The second case, detailed in an ethnography by David McDermott Hughes (2021), pertains to the impact of windfarms on a small village situated near the Atlantic coast of the Andalusia, Spain. While villagers have slowly warmed to the presence of wind turbines in their vicinity, which many initially found unsightly and noisy, the only local person to have economically benefitted from them has been a large landowner who receives a handsome compensation for the turbines situated on his farm. Although Hughes (2021: 207) argues that wind power contains the potential to reduce greenhouse gas emissions, thus playing a role in mitigating climate change, no net benefit is achieved in reality *within a green capitalist framework*. While the grid density of wind power in Spain rose from one percent to 10 percent, ‘national carbon emissions soared from 242 to 338 megatons, a 40 percent jump’. In effect, wind power did not so much replace fossil fuel power as *supplement* it. Spaniards increased their electricity consumption as they operated their newly acquired household appliances, ranging from microwaves to smartphones, thereby creating a classic illustration of the previously mentioned Jevons Paradox or rebound effect. Hughes (2021: 29) therefore advocates a ‘socialism of the wind’ as an ‘alternative to this atmospheric phase of capitalism under which governments would socialise or nationalise wind energy, a step which we view as potentially being part and parcel of eco-socialism.

Eco-socialism as an alternative to capitalist ecological modernisation

Climate scientists maintain that humanity has a ten-year window to stop dramatic irreversible damage resulting from climate change. The Intergovernmental Panel on Climate Change (IPCC) distinguishes between Type I climate change, which is gradual, and Type II, which is much more abrupt, resulting in the crossing of critical tipping points (Singer 2021). Humanity and the planet may be entering a *terra incognita* that is manifest in melting of the Arctic icecap and other land ice, the possible collapse of the West Antarctic Ice Sheet, the contraction and demise of the Amazon rainforest, the acidification of the ocean, and the increasing emissions of methane from sources such as peat bogs, among other degradations.

Humanity faces at least three possible climate futures. The first of these is a dystopian future characterised more or less by ‘business-as-usual’, with

ongoing economic growth and increasing social inequality. This would be a fortress world in which the affluent attempt to protect their privileged lifestyles amidst environmental degradation and runaway climate change, although they might eventually find themselves in situations analogous to the experiences of elites during the French and Russian Revolutions, albeit on a much more global scale. This would be a future stuck in the ‘myths and modes of being’ of contemporary capitalism, incapable of acting on or accepting any other view of life, leading to a tragic outcome for humanity and other species.

The second possibility is a middle-of-the-road climate future in which ecological modernisation creates some mitigation of and adaptation to climate change, but with ongoing social inequality, albeit perhaps with some amelioration of global poverty. The society has a more flexible political economy than in the first scenario, but it is still unable to imagine and create a significant alternative to the current world order. While a large section of the international elite, both within the corporate and state sectors, comes to recognise the seriousness of anthropogenic climate change, the solutions they propose under the guise of ecological modernisation and green capitalism are insufficient to contain catastrophic climate change and social injustice.

The third climate future would be that of a society transformed through a eco-socialist revolution, creating a society with the following dimensions or desired goals: (1) a global economy oriented to meeting basic social needs, namely adequate food, clothing, shelter, and healthful conditions and resources; (2) a high degree of social equality and social fairness across classes, ethnicities, genders, and sexual minorities; (3) public or socialised ownership of productive forces at national, provincial, and local levels; (4) representative and participatory democracy; (5) environmental sustainability; and (6) a commitment to a safe climate (Loewy 2015; Baer 2018; Albritton 2019).

Climate change, perhaps more than any other form of crisis, compels us to examine the desirability and feasibility of some such systemic change. With notable exceptions such as Herbert Marcuse, Erich Fromm, E.P. Thompson and Andre Gorz, many Marxists have paid scant attention to environmental factors. John Bellamy Foster (2000) argues that Karl Marx himself recognised capitalism’s *metabolic rift* with nature, even though this was not a primary focus of Marx’s work. Over the past three decades or so, many progressives have awakened to environmental travesties in

developed and developing capitalist societies and in post-revolutionary societies.

The central challenge is to capitalism's inherent growth paradigm. Pepper (2010: 35) observes that 'eco-socialists have largely accepted the ecocentric arguments of some radical environmentalists, that there are indeed limits to economic and population growth imposed by the earth's carrying capacity'. Harvey (2014: 296) proposes (as Mandate 15 of the 17 mandates that he lists to frame political praxis for a post-capitalist society):

The economy converges on zero growth (through which room for uneven geographical developments) in a world in which the greatest possible development of both individual and collective human capacities and powers and the perpetual search for novelty prevail as social norms to displace the mania for perpetual compound growth.

This implicitly recognises that many people, particularly in the Global South, will need further growth of their economies; but that the affluent in both the Global North and the Global South will need to undergo degrowth for the global economy to approach zero growth overall.

A different line is taken by Huber (2022) who takes issue with the degrowth movement and criticises radical academics who argue that working class people in the Global North have contributed to the ecological crisis through an 'imperial mode of living' that relies heavily upon resources expropriated from the Global South. However, Huber does not distinguish between segments of the working class who are compensated for their alienated labour with a wide array of consumer items and those who are deprived of the essentials necessary to maintain their sustenance and good health. Many of the latter are concentrated in the Global South but also among racial/ethnic minorities and women in both the Global South and the Global North.

As the capitalist world system continues to self-destruct due to its exploitative, oppressive, socially unjust, and environmentally unsustainable practices, eco-socialism seeks to provide a vision to mobilise people around the world, albeit in different ways, to prevent ongoing human socioeconomic and environmental destruction. Common ownership, which would blend centralism and decentralism, has the potential to place constraints on resource depletion. The construction of eco-socialism needs to be based upon a commitment to long-term sustainable balance between sociocultural systems and the natural environment.

Although at present, or in the near future, the notion that eco-socialism may be implemented in any society, developed or developing, or a number of societies, may seem unlikely, history tells us that social changes can occur quickly once economic, political, social structural and environmental conditions have reached a tipping point – adapting that term from climate science (Wijkman and Rockstroem 2011). Current patterns of ecological degradation and the mounting pressure of social inequality, along with emerging infectious diseases, have been evident in the form of the COVID-19 pandemic. Continuation on the current pathway will lead to deeper and deeper crises, including an ever-escalating climate change crisis, the result of continuing emissions spewed by the capitalist treadmill of production and consumption, despite numerous efforts to both mitigate and adapt to this process in the form of emissions trading schemes and techno-fixes.

Combating both climate change and global capitalism go hand in hand. While the more enlightened corporate elites and their political allies may permit some measures that contribute to climate change mitigation and adaptation, such as renewable energy sources, energy efficiency, and electric cars, they will certainly not readily permit the demise of global capitalism and the emergence of an eco-socialist world system. However, the forces for fundamental systemic change are also powerful. As Foster and Clark (2020: 287) observe:

To overcome centuries of alienation of nature and human labor, including the treatment of the global environment and most people – divided by class, gender, race, and ethnicity – as mere objects of conquest, expropriation, and exploitation, will require nothing less than a long ecological ecological revolution [...] This revolt will inevitably find its main impetus in an environmental proletariat, formed by the convergence of economic and ecological crises and the collective resistance of working communities and cultures – a new reality already emerging, particularly in the Global South.

Meanwhile, progressive people, including those in the climate justice movement, can work on various system-challenging *transitional reforms* essential to implementing a socio-ecological revolution. These include: (1) creation of new left parties designed to capture and transform the capitalist states; (2) implementation of steep emissions taxes at sites of production that include efforts to protect low-income people; (3) public ownership in various ways of the means of production; (4) increasing social equality within nation-states and between nation-states and achieving a sustainable

global population; (5) implementation of socialist planning and workers' democracy; (6) meaningful work and the shortening of the work week; (7) development of a global steady-state economy that includes overall de-growth for countries in the Global North and development for countries in the Global South; (8) adoption of renewable energy sources, energy efficiency, sustainable technology, and the creation of green jobs; (9) sustainable public transport and travel; (10) sustainable food production and forestry; (11) resistance to the capitalist culture of consumption; (12) sustainable trade; (13) sustainable settlement patterns and local communities; and (14) demilitarisation and denuclearisation (Baer 2018).

These transitional radical reforms constitute loose guidelines, not a rigid blueprint, for shifting human societies or countries in a global 'permanent revolution', one that would include a radical climate governance regime that addresses both processes of climate mitigation and adaptation. Ultimately achieving most of the transitional radical reforms listed above would require that new left or socialist-oriented parties come to power and ensure that there is the political will that drives their implementation. Dean (2016: 206) argues that 'gaining control of the state [in its existing form] remains an important goal because it presents a barrier to political change'. As Jacobs (2021) also argues:

Almost all the progress in environmental technologies and consumption patterns over the past thirty years has come about as a result of government policies. Energy efficiency standards, pollution regulations, renewable energy mandates, conservation orders, product bans, green taxes, emissions trading schemes, research and development subsidies: it is the panoply of state interventions in markets that have driven such progress as we have had. And it is much more far-reaching interventions that will be needed if fossil fuels are to be squeezed out of the global economy and investment in green solutions increased to the levels required. There might even be some people who would question whether an economy subject to such intervention should still be called entirely 'capitalist'.

Eco-socialism is a radical solution in that it seeks a humane solution to an anthropocentric problem, a solution that prioritises human well-being, biodiversity, and a healthy, livable planet, all of which seem worthy goals for a species that has placed itself in harm's way. By laying the groundwork for it now, we make it possible to tip the scales toward social and ecological justice and sustainability at the critical moment of potential rapid change. In this connection, it is pertinent to recall the late Immanuel Wallerstein's (2007: 382) view:

I do not believe that our historical system is going to last much longer, for I consider it to be in terminal structural crisis, a chaotic transition to some other system (or systems), a transition that will last twenty-five to fifty years. I therefore believe that it could be possible to overcome the self-destructive patterns of global environmental change into which the world has fallen and establish alternative patterns. I emphasize however my firm assessment that the outcome of this transition is inherently uncertain and unpredictable.

We regard eco-socialism as a ‘real utopian’ alternative (Wright 2010) which climate justice activists and other radical voices will increasingly embrace as people around the world experience on-going and escalating climate change. If there is widespread recognition that techno-only fixes cannot solve the problem that was created by powerful technologies implemented under capitalist regimes, people are likely to be open to more systemic change to address climate change and social inequality. While eco-socialism is not on the immediate horizon, it provides a political perspective and framework for understanding an alternative world system based on social justice, deep democracy, environmental sustainability, and a safe climate. The continuing rise in global emissions and the proliferating climate crises – including rising temperatures, droughts, wildfires, rising sea levels, melting of glaciers and polar icecaps, intensified cyclones, torrential rains and flooding, and biodiversity destruction – make it imperative to consider this political economic alternative.

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THE CORE OF CORPORATE POWER IN AUSTRALIA

Lindy Edwards

In 2020, my book *Corporate Power in Australia: Do the 1% Rule?* was published, just as the pandemic hit. The study had been six years in the making, during which I had conducted detailed research into Australia's ten most powerful companies and their major clashes with government over ten years. At first glance, the book is a heavily empirical study of the big corporates' success at securing policies that entrench their privileges. It included details of policy initiatives and the chaotic nature of the democratic process, thereby tending to convey the impression that no one is in control, even as corporate interests triumph again and again.

However, the detail of the policy debates may have distracted readers from the conceptual and theoretical arguments that were also central to the purpose of writing the book. I wanted to contribute not just a real-world account of why inequalities of wealth and political economic power have been growing, but also a conceptual framework for making sense of those developments, hoping that might nudge political economic debate in a more progressive direction. I wanted to offer a conceptual framework for thinking about the major corporates' business models and how they interrelated with government, one that would open new ways of thinking about the 'rise of the 1%' and what different policies could be pursued. Although I took a light-touch approach to explaining the conceptual moves in the book, the argument had quite considered roots.

The inspiration for focusing on the conceptual shifts came from S.M. Amadae's book, *Rationalizing Democratic Capitalism* (2003), which documented ideological battles over the nature of democracy against the backdrop of the Cold War. Amadae argues that neoliberals in the inter-war

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period saw the rise of democracy as a political blow. The ethos of the collective deliberation on the common good was deemed to be aligned with socialism, and the popularity and effectiveness it was experiencing presented a significant threat. She describes how theorists responded by accepting the practical benefits that were flowing from democracy and set out to re-theorise democracies' strengths to align with neoliberal values. She describes how rational choice scholars re-theorised the core of democracy as being a means for mediating between competing interests.¹ She describes how the body of rational choice literature slowly re-theorised democracy until the analysis of politics and the dominant economic analysis of capitalism came into line. She notes that it was not until the 1970s that it began to be consistently argued that there was a natural affinity between capitalism and democracy.

Once neoliberals had made the argument that their values were at the core of democracy, they then proceeded to advocate regulating democratic practice in line with those values. They were able to make the case for a more limited role for government by framing those engaging in democratic politics as 'rent seekers' in pursuit of self-interested advantage. Liberation movements that were agitating for democratic reform to increase social inclusion on the grounds of race and gender were re-cast as narrow interest groups engaged in those rent seeking behaviours. In the Australian context, recall John Howard's descriptions of the 'Aboriginal Industry' and the other 'grievance industries' as sectional interests seeking special privileges (Hindess and Sawer 2004).

The insight I took from Amadae was that, as the political left attempts to rebuild its intellectual foundations in the wake of the collapse of 'actually existing socialism', it needs to take a leaf from the neoliberals' book. Faced with the evident ongoing strength and resilience of capitalism, we need to re-theorise the character of those strengths and offer alternate explanations of how its processes operate. Perhaps by foregrounding alternative explanations of its strengths, we can then create the intellectual space to separate out its more undesirable elements. It may then become possible

¹ Not all neoliberals were rational choice theorists and not all rational choice theorists were neoliberals. However, there was a cross pollination of the two, with rational choice theory emerging as a preferred methodology partly, if not primarily, because of its role in the ideological contest of the era.

to consider how to regulate and minimise the exploitative and damaging practices.

Coming from this perspective, the common progressive focus on debates about the size of government has limitations. Focusing too much on the role of government cedes the ground to neoliberals that their description of the market is accurate. As long as we accept that it is the competition between self-interested individuals, as mediated through the market, that drives wealth and prosperity, we have vacated the most important ground. Instead, the main focus should be on how to best understand how the economy functions to create wealth and prosperity.

There is a lot of opportunity for such re-theorisation. Significantly, much can be learned from the internal concerns of capitalist businesses themselves. Their characteristic emphasis is on teamwork, rather than individual self-interest, as the means to drive higher productivity. Trust is also regarded as being just as important as competition in making markets work. These features contrast with neoclassical economic frameworks that focus on matters of allocative efficiency but have less to offer to discussions of growth. The business perspective creates considerable scope to re-theorise the essential mechanics of the economy.

Corporate power as evidence for a different frame

The process of re-theorisation can most fruitfully occur at the most fundamental level, focusing on foundational theoretical heuristics. The simplifying heuristics of academic theories are important in how we make sense of complex phenomena. As Paul Krugman (1997: 173) noted:

the strategic omissions in building a model [theory] almost always involve throwing away some real information [...] and yet once you have a model it is almost impossible to avoid seeing the world in terms of that model – which means focusing on the forces and effects your model can represent and ignoring or giving short shrift to those it cannot. The result is that the very act of modelling has the effect of destroying knowledge as well as creating it. A successful model enhances our vision but it also creates blindspots.

Foundational heuristics of academic theories become the foundations on which more complex frameworks are built. The blindspots of the simplifying heuristics become the blindspots of the frameworks that guide public policy making and political debate.

Corporate Power in Australia sought to advance a reframing that replaces the common neoclassical approach. The key argument is that to advance a progressive way of analysing the economy requires shifting from talking about ‘market economies’ to talking about ‘long chain economies’. The central economic image in the neoclassical view is intersecting demand and supply curves, leading neoliberals to argue for more ‘market freedoms’ that allow the forces of demand and supply to work more efficiently. In contrast, an institutional political economic approach can usefully focus is on the long production and supply chains that characterise all complex economic systems, thereby opening up space to highlight the factors that shape how wealth is distributed along the chains.

Corporate Power in Australia sought to justify this reframing through detailed empirical analysis, demonstrating that this was useful for understanding increasing inequality. The book noted that the top 100 firms listed on the Australian Stock Exchange accounted for 47% of GDP (Sims 2016). Further taking account of the production by large multinationals not on the Australian stock exchange, the Australia’s economy is clearly dominated by a small number of very large companies. The internal chains, as well as external links, of these companies are substantial.

Zooming in to examine Australia’s ten largest and most powerful corporates, the study found that they all operated in industry sectors dominated by 1-4 businesses. Each of these companies tower over long production and supply chains, and a significant element of their corporate strategy centres on scraping the wealth out of those chains and concentrating it in their own hands. Furthermore, their conflicts with government have been over laws that determine where the wealth is realised in the chains.

During the period of the study, the biggest of the companies in Australia were the major retailers, centring on the supermarkets Coles and Woolworths. My research examined their ongoing clashes with farmers and other suppliers over the need for a code of conduct to govern inter-business relations in the sector. First, the research analysed the extent to which the supermarkets’ business strategy centred on redistributing wealth along the chain. It revealed the extent of the aggressive tactics to squeeze the prices being paid to suppliers. Second, it revealed that the public policy debate was over laws that would regulate where the wealth would be realised in the chain and whether the government would put curbs on their

predatory behaviour. The study found the supermarkets were shockingly successful at avoiding effective regulation of their behaviour.

Other case studies in the book looked at battles over laws that shape where the profits are realised along the chain. One was the now infamous dispute over newly proposed mining taxes during the Rudd-Gillard periods of government. A central issue was whether the new taxation would be borne primarily by the small and often Australian-owned exploration companies that did the high-risk work of finding deposits, or by the major international mining companies that exploited the deposits and exported the ore. The major miners won this battle at the cost of both the Crown and the small exploration miners.

Another chapter considered the case of the banks and the financial advice scandals, showing that the central issue at stake was how investment wealth would be distributed along the wealth management sector chain. The question was how the profits would be distributed between the banks that produced most of the wealth management products, the banks' in-house financial advisers, the commissioned financial advisers that acted as their distribution network, non-commissioned financial advisers, and customers. Again, we saw an outcome that strengthened the banks and their in-house advisers against the commissioned and independent financial advisers, but hopefully increased protections for customers to some degree.

Similarly, the book's case study on Telstra was also about whether the profits in the telecommunications sector would be captured by the owner of the wholesale network or the retailing companies that were supposed to be competing to provide services to customers. Telstra engaged in an extraordinary range of aggressive tactics to use their control of the wholesale market to try to capture and scrape wealth out of the retailing part of the chain.

Generalising from these case studies, the book sought to demonstrate how this conceptual reframing of the economy was useful for explaining the increasingly concentrated wealth in the hands of the most powerful economic players. It showed the flaws in the neoliberal belief that demand and supply are the sole factors determining where wealth is realised in the chains. Delving into the practical realities of the various industries and their business models revealed the broader range of factors that shaped how much leverage different players in the chain actually had, with the balance of demand and supply being only one factor in the mix.

Furthermore, the case studies highlighted how neoliberals' neglect of the role of power meant that they turned a blind eye, effectively enabling the most powerful players to scrape wealth out of the chains. The businesses were then able to use the leverage of their wealth and economic importance to lobby for regulatory environments that further entrenched their privileges. It found Australia is teetering on the edge of a 'Medici Cycle' where economic and political power has become mutually reinforcing, and the largest companies use their political power to secure laws to further entrench their economic dominance.

This reframing of these economic debates to focus on sectoral chains may seem like uncontroversial common-sense in these cases. Yet, in using this framework to explain why we are seeing increasing wealth being held by the most powerful segment of society, I was seeking to focus attention on a framing of the economy that has more progressive potential than might immediately meet the eye. To understand this potential, it is useful to unpack the method in the context of the debates over the fundamental framing contests between progressives and neoliberals.

The framing contest

Basic framing assumptions have significant flow-through effects, acting as foundations on which other analyses and arguments are built. Amadae demonstrated how important the contest over these fundamental frames were in thinking about the value of democracy. Here I seek to build on Amadae's observations about the framing debates between left and right over democracy in the Cold War, and then apply them to the analysis of the market. This is intended to explain how the long chain framing of the economy makes progressive critiques of the market more visible in public debate, and how it opens the opportunity to distinguish between productive and exploitative profits.

Identifying the left frame: What are progressive values?

If we are to re-theorise capitalism to identify its strengths in alignment with progressive values, we need firstly to consider what those progressive values might be. After all, by many definitions, finding strengths in capitalism is an anathema to left thought. In Amadae's analysis of the post war ideological debates, she associated the left with collectivism.

Although state socialism is no longer appealing to most on the left, a strong commitment to notions of co-operation persists. Seeing collective deliberation on the common good as the best way of organising social relations continues to be a key thread uniting the diverse array of progressive thought (Edwards 2013).

The ongoing centrality of co-operation in left thinking is most apparent when pitted against the ideological competitors (Edwards, 2018). On the one hand, conservative ideologies tend to emphasise the importance of authority and hierarchy in policing traditional social norms that dictate peoples' roles in society. On the other hand, neoliberalism has come to focus on competitive individualism as mediated through mechanisms such as the market and competitive democracy. These are both clearly at odds with co-operative approaches that are either implicit or explicit in almost all progressive movements.

Indeed, the emphasis on co-operation is a key feature of the 'family resemblances' among the increasingly diverse progressive political movements, ranging from the 'thick co-operation' associated with collectivism to the 'thin co-operation' associated with commitments to social inclusion, mutual respect, and equality that are characteristic of many liberation movements. The connecting theme is that, as people are inevitably embedded in social relationships, cooperation is essential for organising relations between people that deliver dignity and justice for all. Thus, people should ideally come together as equals, collectively deliberating on how to solve shared problems, with a view to advancing the common good. The legitimacy and stability of any co-operative agreement stems from treating all parties justly (Edwards 2009).

The Cold War ideological debates about whether co-operation and competition provide the better way to solve social relations are still relevant to current debates, even though modern progressive movements seek to apply cooperative ideals in very different ways to very different contexts.

How 'rational choice' theorists decentred the left frame

Consideration of neoliberal critiques of co-operation and collective action can help to identify the pivotal conceptual moves of which we need to be mindful when considering a re-formulation of the strengths of capitalism. 'Rational choice' theorists, for example, engaged in a concerted effort to

undermine the notion that co-operation for the common good could be an effective form of social order during the post war period (Arrow 1951; Buchanan 1984; Downs 1957; Olson 1965; Riker 1968). These arguments began with Arrow's 'social choice' theorem, which sought to demonstrate that there was no way that individual interests could be aggregated to produce a measure of the common good. They continued with Olson's consideration of the problems of collective action, seeking to show why it is not rational to co-operate even if an individual stands to gain from that co-operative action.

These rational choice critiques of co-operation turn on two critical points. The first relates to gains from co-operation. These gains are essential to the co-operative paradigm, even if the gains are simply the security and confidence of knowing things will be handled systematically, competently, and fairly. Key neoliberal critiques of co-operation, such as Arrow's, turn on excluding the notion of gains from co-operation and instead paint political and economic choices as zero-sum games (Edwards 2005). Secondly, rational choice scholars such as Olson - who did concede gains from co-operation - built their arguments by redefining what constituted rationality (Tuck 1999). They constructed rationality as a focus on a narrow short-term interest, whereby individuals exclude from their calculations any consideration of how their behaviour would affect the behaviour of others.

Critical elements in the framing of the economy

There is a long tradition of critiquing foundational constructs, such as the assumptions of scarcity and perfect competition, and the use of intersecting demand and supply curves to describe how allocative efficiency is achieved. Such criticisms of the neoclassical model go back at least as far as Thorstein Veblen (1912). J.K. Galbraith (1973) was particularly scathing, not only because of the limited extent to which these assumptions described the world, but also because of the political purposes served by what these models concealed.

Significantly, for our purposes, taking scarcity as the universal problem sets up the central economic question as a zero-sum game. It establishes a view about how resources are distributed among people that assumes their interests are fundamentally competitive. Furthermore, perfect competition assumes actors pursue their short-term self-interest without considering

the possible impact of their behaviour on the choices and wellbeing of others. These are framings that exclude any role for co-operation in understanding the economy or in explaining its strengths.

A further framing device that needs to be de-centred in our analysis of the economy is the use of demand and supply analysis. It is not possible for conventional demand and supply curves to represent systematically different behaviours of different groups, power imbalances, class conflict or gender and racial norms. Aggregating people's behaviours into demand and supply analyses has a 'flattening' effect, removing group differentiation and silencing many institutionalist concerns. This is highly problematic as a political construct.

I only realised in retrospect that the effectiveness of my first book, *How to Argue with an Economist* (2002), hinged on having been able to explain the ideal of allocative efficiency without using demand and supply curves (2007). The book explained how the pursuit of profit led entrepreneurs to identify products that were highly valued and cheapest to make; and to prioritise production accordingly. It argued that this was why the pursuit of profit can be a socially useful method of decentralised coordination. However, because the explanation did not presume a market equilibrium, it was able to integrate institutionalist critiques of the consumer sovereignty 'ideal' within the same conceptual frame. Displacing, or at least de-centring, demand and supply is an important element in any re-theorisation of the economy that seeks to foreground progressive concerns.

The importance of 'long chain' framing of the economy

The crux of the proposed reframing of the central questions of microeconomics is deceptively simple and is targeted primarily at classically trained economists. For students of political economy, it is about making explicit something that is often implicit (Gibbon *et al.* 2008; Pistor 2019). The argument builds on the traditional left critique of exploitation in production chains within firms, extending it to include the supply chains within a sector. In this view, what counts as a link in a production chain and what is a link in a supply chain is fluid, recognising that corporates regularly alter which parts of production they out-source or bring in-house. The view also challenges some of the assumptions about where power lies in the chains. Small businesspeople might be owners of capital, but they may have considerably less power in the chain than

executives in the larger corporates who are technically salaried but manage vast amounts of capital. It is the ownership of capital that has traditionally been seen as the ultimate source of leverage and power; yet this framing suggests that, while this *may* be the case, it isn't necessarily so in the world of mega-corporates.

In summary, the long chain heuristic is important in three ways. Firstly, *it foregrounds co-operation rather than competition as the key ingredient in driving increased prosperity*. Traditional microeconomics focusses on the problem of scarcity and argues that competitive markets resolve this challenge. In contrast, with a long chain approach we return to Adam Smith's view of the division of labour as the principal driver of increased productivity. It is the gains from specialisation, including embedding specialised knowledge in capital goods, that continues to drive the growth in societal wealth. The specialised economy presents a string of co-ordination challenges, relating to how we combine the efforts of specialised workers and how we decide what products to produce. As humans, we can manage those co-ordination challenges in a variety of ways, ranging from hierarchies and bureaucracies that may be overseen by corporate boards, non-profit boards or democratic government, through to regulations, markets and price competition. No matter which way these specialised workers are coordinated, the creation of the final product is reliant on each of their unique contributions. As such, the proposed re-framing, opens up consideration of how co-produced wealth should be shared, in a way that speaks more directly to neoclassically trained economists and to the different people in the chain.

Secondly, the long chain model *offers an overarching framework for progressive critiques of neoliberalism to be articulated* in a way that is intelligible to mainstream economists and accessible to both expert and non-expert audiences. In the long chain model, neoliberal approaches to the economy assume that impartial market forces of demand and supply determine how wealth is distributed along those chains, presuming that each link in the chain gets paid what they are worth. Neoclassical theory posits that each worker – indeed, each of the 'factors of production' – is paid their marginal product. In contrast, the progressive alternative sees economic power, class relationships, government laws and regulations, together with cultural norms including attitudes to race, gender and the environment, all impacting on how wealth is distributed along the chain. In this latter view, the demand and supply situation is just one potential leverage factor, but not the only one nor necessarily the most important.

Theorising the economy in this way foregrounds progressive concerns and highlights the insights of institutionalist political economic analysis in our thinking about the economy.

Thirdly, and most importantly, the long chain heuristic *allows us to conceptually distinguish between productive and exploitative sources of profits*. Productive profits arise when new chains are created to meet new demands. In this context, the co-ordinating function of the pursuit of profit is that it incentivizes entrepreneurs to identify unmet needs in society and to construct chains that deliver a product to meet that need. The more people value the unmet need the higher price they are prepared to pay; and the entrepreneur is rewarded for finding the lowest cost way to meet that need. This type of socially productive profit seeking can be distinguished from exploitative sources of profit which arise, for instance, when business leaders take existing chains and use their leverage and power to redistribute wealth along those chains. Such forms of exploitative profit making - or what I refer to as 'profit bludging' - move money around rather than creating new wealth. Worse still, the resources spent in the process of redistribution may reduce the overall wealth.

Distinguishing between productive and non-productive profit making opens the conceptual space for debating which areas of the economy benefit from being 'for-profit activities' and in which areas a profit motive serves little productive purpose and is most likely to result in profit bludging. Furthermore, by allowing us to clearly identify exploitative profit bludging as distinct from productive profits, it creates the intellectual space to consider public policies that regulate against, or otherwise constrain, exploitative profit seeking.

The future of 'long chain' theoretical framing

The initial impetus in writing *Corporate Power in Australia* was that my previous work on the history of ideology (Edwards 2013) had shown that ideological change stemmed from ideas that could make sense of emerging social crises. In demonstrating how a conceptual reframing of the economy could make sense of the flashpoint criticism of neoliberalism, I had hoped to nudge economic thinking post-neoliberalism. However, it is now clear that neoliberalism's demise is less likely to stem from its own internal contradictions than from external events. The geo-political economic environment has been radically transformed in the wake of the pandemic,

the Russian invasion of Ukraine, the increased assertiveness of China, and the crisis in US democracy. These are now the more likely drivers of a new economic age.

Nonetheless, the issue of long economic chains is likely to be central to economic debates going forward, just not in the way that I anticipated. As parts of the world de-couple and move to shorten or relocate global supply chains to ensure greater national control, discussions about the pros and cons of long chains are likely to be pervasive. I hope that readers of this article may consider the utility of its progressive re-framing of the central questions of microeconomics as we grapple with what a new economic order might look like.

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