



Routledge Studies in Sustainable Development

ECOLOGICAL LIMITS OF DEVELOPMENT

LIVING WITH THE SUSTAINABLE DEVELOPMENT GOALS

Kaitlin Kish and Stephen Quilley



Ecological Limits of Development

Embracing the reality of biophysical limits to growth, this volume uses the technical tools from ecological economics to recast the Sustainable Development Goals (SDGs) as Ecological Livelihood Goals – policy agendas and trajectories that seek to reconcile the social and spatial mobility and liberty of individuals, with both material security and ecological integrity.

Since the 1970s, mainstream approaches to sustainable development have sought to reconcile ecological constraints with modernization through much vaunted and seldom demonstrated strategies of ‘decoupling’ and ‘dematerialization’. In this context, the UN SDGs have become the orchestrating drivers of sustainability governance. However, biophysical limits are not so easily side-stepped. Building on an ecological-economic critique of mainstream economics and a historical-sociological understanding of state formation, this book explores the implications of ecological limits for modern progressive politics. Each chapter outlines leverage points for municipal engagement in local and regional contexts. Systems theory and community development perspectives are used to explore under-appreciated avenues for the kind of social and cultural change that would be necessary for any accommodation between modernity and ecological limits. Drawing on ideas from H.T. Odum, Herman Daly, Zigmunt Bauman, and many others, this book provides guiding research for a convergence between North and South that is bottom-up, household-centred, and predicated on a re-emerging domain of Livelihood. In each chapter, the authors provide recommendations for reconfiguring the UN’s SDGs as Ecological Livelihood Goals – a framework for sustainable development in an era of limits.

This book will be of great interest to students and scholars of ecological economics, socio-ecological systems, political economy, international and community development, global governance, and sustainable development.

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Part I

**Energy, complexity, and
livelihood**



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1 Introduction

‘Me, myself, I’ and the political economy of the Sustainable Development Goals

Positioning the Earth against the vast darkness of space, Carl Sagan asked us to ‘Look again at that dot. That’s here. That’s home. That’s us’ (1994). The tiny pixel-image of the Earth sent back by *Voyager 1* intimates a potentially devastating insignificance. But against the unfolding dynamics of what evolutionist Jacques Monod referred to as ‘chance and necessity’, the same disconcerting frame also testifies to an almost incredible degree of serendipity.

On the one hand, we are each only a tiny blip within a micro-fraction of a vast and aloof universe. On the other hand, we are the outcome of an infinitesimally improbable string of complex, interconnected events. Recognizing the cosmic felicity of ‘Goldilocks conditions’ that make possible the spiralling complexity of life on Earth and our capacity to understand our place in the order of things, it is beholden on our species to revel in our cosmic good luck and to extend our run for as long as possible. Most fundamentally, this means recognizing the limits of our luck. We are dependent on those Goldilocks conditions at every scale, from the structure of the universe to our local biosphere’s operating conditions. We will never be able to affect the ‘cosmological constant’, but the reality of the Anthropocene is that humanity has become a significant driver of geochemical and biological evolution. In this context, ‘extending our run’ means actively steering human impacts to keep the metabolism of the biosphere within operating parameters consistent with those Goldilocks conditions. More concretely, this means managing our economy and society to sustain the complexity and diversity of life on Earth and the system’s potential for continuing evolution into the deep future. This is a monumental and sobering problem. Over the past 150 years, humanity has tested its luck. The short-term positive outcomes of our careering trajectory of growth make it hard to stop. It is not just the material outcomes that are addictive – our cell phones, cars, and homes – but also freedom. Over recent centuries, growth has created the conditions for unprecedented individual social and spatial mobility, a condition that Bauman refers to as ‘liquid modernity’ and foundational for cherished visions of freedom, social and political rights, personal autonomy, and progress. The ecological crisis associated with the ‘great acceleration’ is a wicked problem precisely because it is linked so internally and inextricably

with real and non-negotiable improvements in the material and civil well-being of people on every continent (Pinker 2018).

‘The individual’ is something about which we talk a great deal in this book. Just as we live in an age of specialization in which the world is fragmented into ever smaller parts of an increasingly complex whole, modern life effects an equally corrosive fragmentation of social relations. There is an internal relation between the rationalizing logic of science, which aspires to provide a universal explanatory framework, and the atomizing impact of the disembedded markets, which push to make everything fungible and commensurable, and which construe social life as the mechanical aggregation of individual transactions. Economic, educational, legal, and even family systems centre around the individual’s success, rather than the household, let alone the community. The rights, liberty, and sovereignty of the modern individual is both the measure and telos of Western liberal thought – a taken-for-granted axiom of societal organization.

Moreover, from this point of departure, innumerable actors and institutions work tirelessly to buttress the society of individuals (Elias and Kilminster 1991) and promote equity of opportunity and circumstance.

These are ostensibly noble goals. The desire of ordinary people to live a maximally happy life seems an incontrovertible common sense and a starting point for most modern (utilitarian, relativist, emotivist, and deontological) ethical theories. But the emphasis on individuals is very problematic. From a historical-sociological perspective, privileging the modern Cartesian individual limits the political-economic imaginary and upholds colonial legacies. Elias likened this ‘closed individual’ (*Homo clausus*) to Rodin’s ‘thinking statue’. The disembedded, mobile individual (Bauman 2000, 200; Elias and Kilminster 1991; Polanyi 1944) intimated by the *Homo economicus* of economic theory texts and game theory is a thoroughly modern. Elias contrasted the contemporary *H. clausus* fixation with individual autonomy, as it manifests in the law, philosophy, ethical theories, economic institutions, and education, with *Homines aperti* – pluralities of interdependent, open individuals. Whether construed in deontological, utilitarian, or social contractual terms, the priority accorded to autonomy necessarily narrows the anthropological options for re-organizing society, removing from consideration examples from the historical past, the anthropological present as well as hypothetical future arrangements predicated on nested and interdependent units, attachments, and patterns of mutual identification. Reductionist individualist approaches to empowering people have had dire consequences precisely because they subordinate social and psychological restraint to an ontology of freedom and self-actualization (Quilley 2009) and also leads to very real material consequences of ongoing colonial violence.

Environmentalists have called for restraint for nearly half a decade. In 1972, *Limits to Growth* (Meadows et al. 1972) presented clear and compelling data warning that the Earth would not support ‘business as usual’ growth and development for much longer. The Global North ignored these warnings mainly because the social compact that had secured both the class and geopolitical

peace since World War II depended on both fiscal transfers from a growing economy (Quilley 2017) and a cycle of consumerism linking mass production and mass consumption (Boyer and Saillard 2005). Likewise, the imperatives of development and priorities of a massive, emerging middle class (in countries such as India, China and, more latterly, Nigeria and Kenya) made any notion of limits a political anathema in the Global South. In 1982, a middle way, the saving grace of ‘sustainable development’ was presented to the world by the World Commission on Environment and Development (World Commission on Environment and Development 1982). Predicated on cooperative global governance and rapid technical change, this eco-modernist charter for green growth envisaged a sustainable future by 2000 and beyond. At the risk of spoiling the surprise, it did not work. It emphasized development as a critical motivator for future goals and as an alternative to fundamental behavioural changes.

After a decade of international conferences and legislative assemblies (Elliott 2004), the year 2000 came and went, and no environmental politic was able to gain significant and widespread traction. Regarding climate and emissions control, the Kyoto Protocol (1997, 2005) and more recently the Paris Agreement (2016) provided a focus for optimism. But at each stage, systemic political dependence on growth has proved to be unmovable. By design, sustainable development had not challenged the modern commitment to progress and development through growth. But in the end, the constant threat of what Habermas described as a ‘legitimation crisis’ (Boyer and Saillard 2005; Habermas 1975) ensured that sustainable growth differed little from simple growth, allowing for widespread adoption and movement towards corporate greenwashing and eco-branding strategies that give the impression for paradigmatic change while only delivering new opportunities for product development and dissemination. In this context, corporate, state, and non-governmental organization (NGO) actors combined actively to obscure the underlying reality of biophysical limits.

Despite this manifest failure, sustainable development will continue to be the mainstream framework for policy as the term has traction precisely because it is vague. Glossing over unavoidable trade-offs, sustainable development combines liberal ideals of intergenerational equity, social justice, and individual liberty alongside ecological protection and economic growth (Dryzek 2005, 145). Rather than an activating cause for concern, it has morphed into a vague catch-all term for economic and technological innovation compatible with environmental integrity (Mol, Sonnenfeld, and Spaargaren 2009).

Despite the overwhelming practical hegemony of the growth agenda, some academic institutions continue to focus on biophysical limits. One of the most influential contributions comes from the Stockholm Resilience Center in their work on planetary boundaries (Rockstrom et al. 2009; Steffen et al. 2015). The concept of ‘planetary boundaries’ draws attention to critical Earth system parameters – for example, stratospheric ozone depletion, freshwater use, carbon emissions – arguing that failure to respect will result in catastrophic global environmental change. Although highly influential, the approach is firmly rooted in biophysical sciences and does little to incorporate social or cultural dimensions

of limit to growth. In response, the UN Sustainable Development Goals (UN SDGs) were developed to integrate social well-being alongside these biophysical growth boundaries.

The UN SDGs are a set of goals and targets agreed to by the 193 UN member states that claim to promote holistic action on social, economic, and environmental issues ('OECD and the Sustainable Development Goals' 2013). The ambitious goals cover most of the economic and social domains necessary for a future of enhanced social well-being, including water, food, education, and peace and governance. Unfortunately, it has become evident that as countries achieve social well-being benchmarks, the metabolic footprint of their economies invariably soar past available biocapacity (O'Neill, Fanning, Lamb, and Steinberger 2018). In a 2018 study, Fanning et al. present data showing progress on 11 social thresholds in relation to six biophysical thresholds for 109 countries. Germany and the Netherlands have achieved all social thresholds and surpassed five and six biophysical boundaries, respectively. Vietnam has the best ratio, achieving six social thresholds while only surpassing one biophysical threshold.

These figures are sobering. The goal of allowing everyone to live a good and prosperous life will not be achieved without a fundamental reconsideration of what constitutes a good life. As things stand, sustainability and development seem to be mutually exclusive rather than a reinforcing conceptual couplet. Any such close examination of what we understand by progress and the idea of a good life – is likely to open a philosophical can of worms. The Aristotelian idea of flourishing (*eudaimonia*) would redirect attention to conscience and character formation and the formation of people in the context of ascriptive societal models. However, rooted in virtue ethics, such an approach would reverse the early-modern paradigm shift that has deeply entrenched social contract, utilitarian, and deontological forms of moral individualism. One of the arguments that we will make is that, in order to be successful, UN SDGs would necessitate a paradigm shift in the ethical underpinnings of Western society on a scale anticipated by Alistair MacIntyre (2016). Furthermore, we question the climate crisis narratives at large, not least because these stories help maintain colonial histories through the desire to maintain the 'good life', which, in many Western societies, has been built on the oppression and genocide of Indigenous Peoples (Whyte 2018).

In the end, the tacit commitment to growth and continuing modernization compromises the SDGs' function to achieve desired end goals. While flawed, the SDGs are laudable and currently represent the only serious international commitment to some degree of environmental change. Although worthy of the attention they receive, to serve as an orienting framework for societal change, the SDGs need reformulating. Without fully embracing the reality of limits, humanity will continue to slide down towards an end that brings humanity to an 'abyss of a new dark age' (Odum and Odum 2001, 12). However, any heuristic rooted in the ecological-economy problematic of scale implies a significant shift away from ontological and moral individualism in favour of a more

communitarian sensibility rooted in virtue ethics and a conception of interdependent figurations of connected individuals, within nested attachments of family, community, place, and nation (Daly, Jr, and Cobb 1994).

We embed our approach and outcomes of this book within the field of ecological economics. Ecological economics developed in tandem with systems thinking and systems ecology. From this perspective, the metabolic ‘space’ for society’s organization vis-a-vis those ‘operating boundaries’ are defined by material and energy flows; the emergence of higher- from lower-level dynamics; hierarchies of nested subsystems; feedback loops; and non-linear change. Small changes can lead to unintended cascading change across multiple hierarchical domains. Our approach to SDGs is predicated on the essentially unpredictable nature of such dynamics and the likelihood that, in their systemic relation, different goals are likely to tilt in different directions. Our goal is to outline:

- 1 the non-negotiable recognition of bio-spherical limits;
- 2 the deep recognition that any paradigm shift regarding environmental well-being will necessarily involve new and distinctive ideas and institutions;
- 3 (from historical sociology) the unavoidable tensions between the (communitarian) social production of meaning and integration in place on the one hand, and the (state-backed, liberal) mobility and autonomy of rights-bearing individuals on the other (Quilley 2011; 2013);
- 4 the extent to which these tensions map on to the scale of material and energy flows; and
- 5 the system dynamics of any conceivable transition.

To do this, we combine insights from complexity theory, ecological economics, and historical sociology to argue for a reformulation of the existing SDGs. In doing so, we strengthen the ecological-economic response to the SDGs by more profoundly integrating social thought. The SDGs already incorporate some ecological, economic theory, and practice elements, so it is time for ecological economists to put forward more ideas for deep systems change. We approach this critique with a theoretical framework rooted in historical sociology and economic anthropology, and particularly the work of Norbert Elias, Karl Polanyi, and Ernest Gellner.

In this sense, we are making a case about the viability and future of modernity, that is, ‘to modes of social life or organization which emerged in Europe from about the seventeenth century onwards and which subsequently became more or less worldwide in their influence’ (Giddens 1990, 1). A viable ecological-economic regime would require: (i) a partial re-embedding of economic life; (ii) the re-emergence of substantively distinct and semipermeable domains of production and consumption; (iii) the partial re-assertion of non-materialist frameworks of shared meaning (including religion); (iv) a new balance between the dignity and sovereignty of autonomous rights-bearing individuals, and duties and obligations consequent upon other nested forms of association; and

(v) forms of mutual security associated with the domain of *livelihood* and distinct from both the formal *market* and *state* welfare safety nets.

As they stand, the SDGs are predicated on a conception of individual freedoms and rights that is a product of the industrial revolution and the subsequent process of capitalist modernization. At the outset of any modernization process, the wicked dilemma was captured rather starkly by the English countryside's slow-burning enclosure movement. Following Marx, Polanyi (1944, 1968) showed that the emergence of a class of nominally free citizen-workers was achieved only through violent disappropriation and the coercive dissolution of common-pool resources. This involved the destruction of 'survival units' based not on the state or price-setting markets but enduring livelihood forms of association carried over from the unequal and hierarchical matrix of social relations and mutual obligations that characterized the rural social order under feudalism. As Polanyi showed, the logic of Market Society was corrosive and destabilizing. New market conditions undermined social cohesion and left millions of what were considered free-wage labourers to the mercy of volatile markets. Over many decades in what Polanyi refers to as the 'countervailing movement for societal protection', the new system was stabilized by state regulation, market-based insurance systems, and a raft of protections that eventually coalesced as the foundation for a modern welfare state. It is worth noting that European colonialism was an integral element in the development of the welfare state, with patterns of exclusion persistent to this day (Bhambra and Holmwood 2018).

Viewed through the microscope, the most significant result of this great transformation was the emergence of a society of transacting individuals, freed from the ascriptive ties of 'blood tie, legal compulsion, religious obligation, fealty or magic compels participation in economic life' (Polanyi 1968, 81) and cooperating based on market contracts or adherence to abstract civic-legal codes. Aspects of social life – the reproduction of culture, forms of security and basic 'survival units', domestic production, leisure, and care – previously achieved through the domain of *Livelihood* (family and place-based association, religious organization, informal and place-bound markets, guilds, friendly societies) – were commodified and outsourced to the abstract and impersonal provisions of the *State* and the *Market*. At the same time, open, interdependent, and highly embedded habitus of attachment characteristics of pre-modern agrarian societies were displaced by norms of individual mobility, freedom, and autonomy, and restrained habitus of Elias's 'thinking statues' (1991).

However, this narrative of freedom and autonomy, which has gradually come to dominate Western art and philosophy, greatly underplays the dependence of this society of individuals not only on the structures of the modern market economy and state but also on ever expanding flows of materials and energy. Everywhere the pattern has been the same. In the provision of goods, services, and the securing of essential societal functions, less complex, informal and relational, familial, and community-based structures of provision are replaced by complex, impersonal, transactional institutions tied to the formal economy and

the state. Individuals access these services in their capacity as citizens, consumers, employees, or shareholders, but rarely as kin, family, friends, or neighbours.

For example, we now supplement or replace familial childcare and acculturation with public education systems, boarding schools, complex legal regulation systems, and state-provided childcare. People applaud these systems because they increase the freedom of individuals, particularly women. However, and we tread very lightly here, this pattern of social life absorbed by the state locks in dependence on fiscal transfers from a growing economy. Clearly, women's emancipation is and will remain a desirable goal. From an ecological-economic perspective, the extension of the existing model to the whole world is probably impossible and requires new innovative approaches to care, women's emancipation, men's role in childcare, and family structures overall that question individualism.

Any global approach to an ecological society needs to be more honest and explicit about the implications of social limits. Ecological economics is defined by a more embedded view of the world: the economy is nested within social systems, which are, in turn, contained by the energy and material flows of the biosphere. Defining planetary boundaries is far less complicated and uncomfortable than looking at social thresholds. Although complex, planetary boundaries can more easily be measured. We know, for example, how much ozone depletion is acceptable; we can estimate the impact of soil erosion, but social boundaries are invariably more complex. At least nominally, a poverty line can easily be measured. However, because poverty is also a subjective experience and relative to the standards operative within a social group, it quickly becomes very complex and bureaucratic standards invariably miss the mark. Many intangible aspects of social life (sociality, friendship networks, social capital, religious belief, participative rituals) have an enormous bearing on the impact and experience of being poor. Other aspects of social experience and well-being – for example, depression, anxiety, and alienation from work – are even more challenging to measure. Such realism as to the entropic cost of complexity is disconcerting because it raises difficult questions about cherished liberal commitments to individual autonomy – freedoms guaranteed by State and Market structures. The challenge in defining realistic SDGs is to move beyond the horns of this dilemma, which pits the dignity and sovereignty of rights-bearing individuals against ecological integrity. In this apparent dilemma, the 'sweet spot' that defines the space for innovation turns on the fact that the abstract Cartesian understanding of the individual as rational and utility-maximizing has always been at best a misleading half-truth. As marketing professionals know, the preferences of even the footloose individuals who participate in the consumer society are routinely swayed by irrational forms of social neuroticism, peer networks and deep-seated psychological drivers relating to sexual desire or fear of death (Becker 1973).

The latter is particularly illuminating. Building on Becker's hypothesis, 'terror management theory' (TMT) has proposed that existential fear of death is an unavoidable side-effect of sentience and language – adaptations that

are otherwise formidable advantages in the Darwinian struggle to survive. Experimental studies support the idea that an important, and perhaps even the central, role of human culture is to ameliorate death anxiety and engender existential meaning by providing societally sanctioned hero and immortality projects. To the extent that the 'liquid' (Bauman 2000) character of modern consumer societies undermines the shared ascriptive cultural narratives of traditional society, individuals are faced with endless choices – about occupation, education, lifestyle, religion, political beliefs, sexual identity, whether to have children, and so on. But with the processes of secularization, pluralization, and what Max Weber referred to as disenchantment, the traditional hero and immortality projects (e.g. religious belief and practice) have become devalued.

This is the context in which crude materialism has become the central legitimation mechanism and the sole universal framework for hero and immortality projects. Every subculture's meaning-making strategies, political affiliation, and even new religious movement are mediated by consumption (think, for example, skateboards; Make America Great Again (MAGA) hats; football shirts; reiki crystals). A need to exude a vision of the self is created by cultural relativism and secularization characteristic of movement into modernity undermined cultural benchmarks of identity (Giddens 1991). This dynamic now mediates and transforms every relationship and social role. Consider the archetypal role of the mother. Being a good mother is no longer about ensuring a child is loved and fed. Instead, mothers are bombarded with a host of conflicting information to help make the best decisions concerning nutrition, appropriate toys, cribs, monitors and a host of gadgets – all new necessities. In this context, consumerism becomes the primary way mothers navigate uncertainty and legitimize their parenting decisions (Arndt et al. 2004). Fears are assuaged when choosing the highest safety-rated product. Demonstration of this good choice and good sense to their peer group becomes a means to bolster a fragile and consumer-mediated self-image of performing well in the maternal role. And as Bourdieu showed, conspicuous consumption is a vehicle for social 'distinction strategies', bolstering social capital and the projection of economic and cultural status (Bourdieu 2010).

In this context, any ecologically motivated retail restraint flies in the face of the deep-seated psychological commitment to consumption. Consumer culture defines the archetype of good motherhood from without, and the experience of care and love from within, through the individual purchase of things.

Moreover, this pattern of response is implicated in the central psychological defences against the implacable existential reality of death (Dickinson 2009). To have any hope at all of countering such entrenched psychological predisposition to consume, SDG strategy would undoubtedly have to foster alternative sources of self-esteem through organic, familial, relational, and place-based relationships. This in turn suggests a political economy in which what we refer to as Livelihood – an informal economy organized around diverse, incommensurable and non-fungible 'substantive' rationalities (Polanyi 1968) – re-expands

to balance the abstract, transactional and growth dynamics of both State and Market. In relation to SDG 5 on gender, alongside/opposed to formal entitlements to childcare, benefits, and so on, this might translate into

- targets relating to mother self-esteem;
- the role of the father in mothering;
- intergenerational and community social capital;
- access to informal associations in civil society;
- greatly reduced advertising with regard to nutrition infant toys and parenting gadgetry;
- the civic and cultural valorization of motherhood;
- rethinking work (part-time normalized) and pay (care incomes);
- targets for the expansion of the household as a site for production and processing, and domestic capital (e.g. kitchen, garden, garage) as a ‘means of production’; and
- emphasis on the multi-generational household rather than the individual as the economic unit of analysis.

In this way, by addressing the underlying social conditions that lead to conspicuous consumption and life dissatisfaction, it’s possible to develop more systemic solutions. Framing the SDGs within these kinds of sociological frames helps establish more imaginative targets that will have cascading impacts on reduced pressure on the biosphere. However, it should also be apparent that this path is necessarily controversial. Some within mainstream feminism, such as UN Women, focus on gender equality, justice, and women’s autonomy as individuals (UN Women Headquarters 2018) – which is to say, it is rooted in the high-energy, high-throughput assumptions of twentieth-century liberalism. From an ecological-economic perspective, the value of autonomy viewed in this way emerges in wicked tension with systemic ecological integrity. And from a sociological perspective, it is also true that the society of individuals has engendered many ‘diseases of affluence’ not least higher rates of depression, suicide, narcissistic personality disorders, crises of identity, and unhappiness (Lasch 1991; Luthar 2003).

In this book, we take for granted that the field of ecological economics (Daly 1997; Farley, Erickson, and Daly 2004; Spash 2017) provides an appropriate starting point but that it can be improved by development of a more political-economic analysis in which the binary lens of *state* (left) versus *market* (right) is balanced by a renewed emphasis on the domain of *livelihood* as understood by Karl Polanyi. We have developed this theoretical framework extensively elsewhere (Kish 2019; Orr, Kish, and Jennings 2020; Quilley 2012, 2019b, 2019a; Quilley and Zywert 2019; Zywert and Quilley 2020). This four-dimensional approach to ‘oikos’ leavens transactions in both the public and private formal economies with a renewed role for the embedded exchanges associated with the hearth, household, community, and gift economy. In Figures 1.1, 1.2, and 1.3 we chart out the progression from an embedded economy (Figure 1.1), to

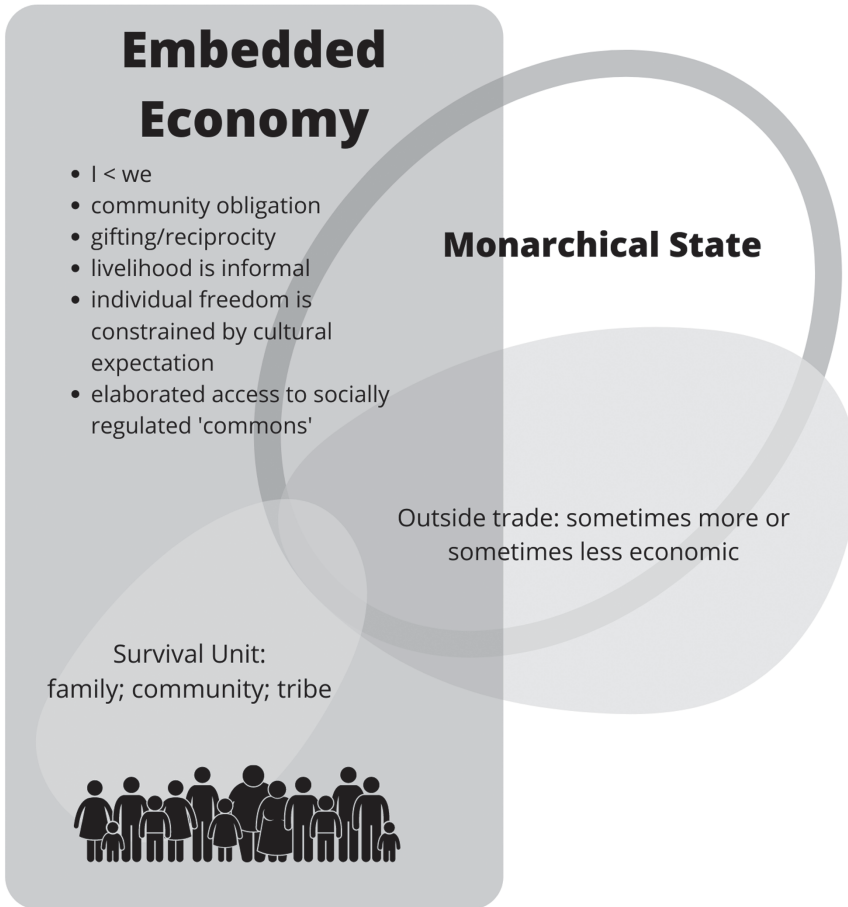


Figure 1.1 Traditional society: The embedded economy.

the current disembedded capitalist economy (Figure 1.2), and our vision for an alternative modernity (Figure 1.3).

Alternative modernity: Partial re-embedding

In this book, we attempt to delineate the contours of this adjacent possible, drawing attention to both the potential and the associated wicked dilemmas and dangers. The project is a contribution to the political economy of post-liberalism in so far as it addresses, simultaneously, the problems of market and social liberalism and questions the fiction of autonomous individualism that animates both. Drawing on historical sociology, we argue that taken-for-granted assumptions

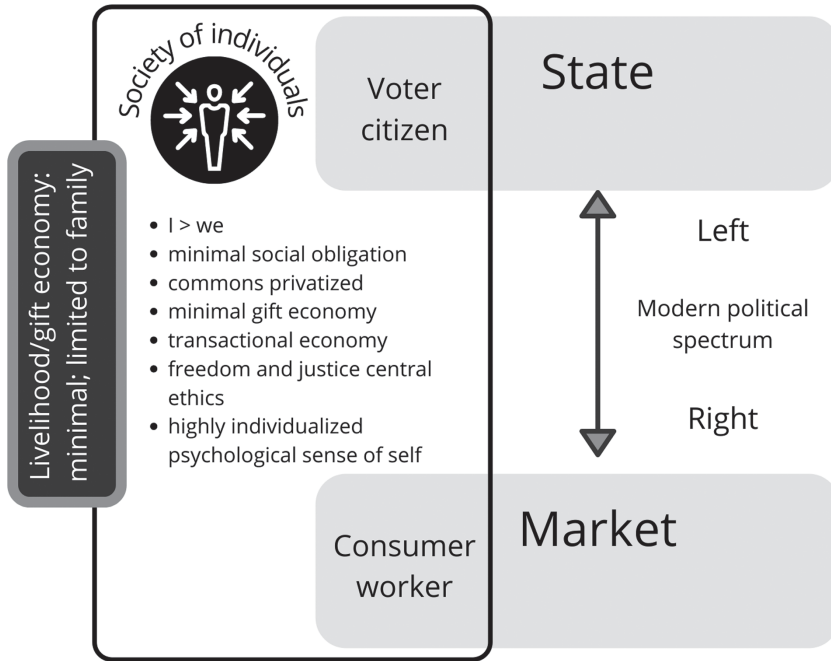


Figure 1.2 Modern capitalist society: Disembedded economy, state, and market.

about individual psychology, the structures of motivation and the nature of social-psychological interdependence, naturalize what is in fact a historically and societally specific configuration of economy and society. The existing understanding of the UN SDGs attempts to generalize these assumptions and to render development as a process of liberalization. Whether or not such a project is laudable in its own terms is rendered moot by the associated ecological costs and that the goals maintain problematic social systems.

The implicit liberalism of the SDG programme is evident in the commitment to ontological and political individualism and the valorization of rights and entitlements separate from social obligations linked to attachments of family, place, and community. This framework now presents a significant barrier to deep ecological-economic change.

Part I of the book elaborates our theory of change and concepts necessary for understanding the suggestions that we put forward. Chapter 2 draws upon socio-ecological systems theory to ground our argument that energy and material throughput is the most critical parameter for social and economic complexity. Such an energetic model of complexity provides the basis for a tripartite model of political economy with a renewed emphasis on Livelihood as a response to State and Market, outlined in Chapter 3. In Chapter 4 we discuss

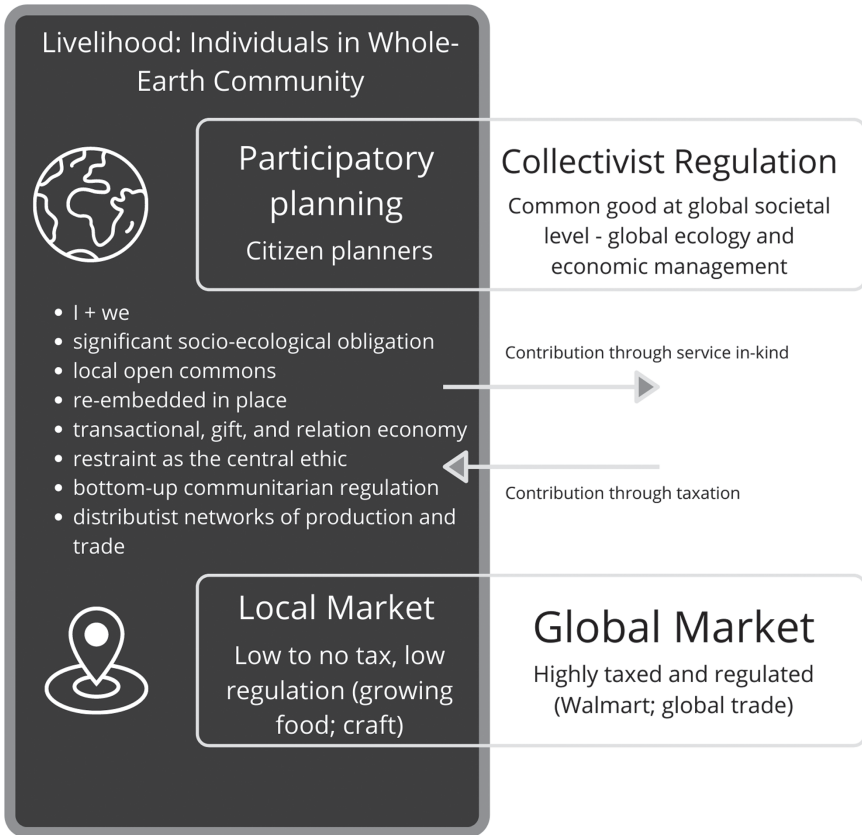


Figure 1.3 Ecological Livelihood Society: Partial re-embedding.

how this also exemplifies the necessity of sustainability goals that implicitly or explicitly engender behavioural restraints – through transformations in culture, psychology, and the structure of incentives, in the Global North.

The remainder of the book is organized based on the SDGs, with a case study in each section – including agroecology in Chapter 8, Makers in Chapter 13, and the Canadian Society for Ecological Economics Biennial conference in Chapter 15. Part II focuses on life provisioning SDGs such as poverty, water, and food. This part includes a guest contribution on energy from Matthew Burke and Rigo Melgar-Melgar. Part III explores the role of more culturally specific SDGs, including the role of cultural genocide and colonialization within modern education and a guest contribution on health and well-being from Katharine Zywert. In the final section, we look at the macro SDGs as they relate to the political economy outlined in Part I. Given the nature of these SDGs, we have two guest contributions, including one on inequality

from Jennifer Gobby, Rachel Ivey, and Samantha Maillhot and a second on partnerships by Sophia Sanniti and Sarah-Louise Ruder. The final section also includes an exploration of the role of ecological law in advancing the SDGs, by guest contributor Kathryn Gwiazdon.

A major criticism of the SDGs is lack of integration; solutions cannot happen in separate domains. We have dealt with the various goals mostly separately because this is how they are presented. However, as will be clear from the theoretical framework and from the discussion, although we are presenting a radically different approach, we are still looking to engage with the existing debate and institutional arrangements. Rather than only recommending a complete replacement of the existing framework, we prefer to suggest additions and modifications to the current SDGs. Having said this, a post-liberal, ecological economy would in the end require radically different conceptions of development and progress. This is intimated in contrast between SDGs and Ecological Livelihood Goals (ELGs) – a contrast that is elaborated and formalized in the conclusion.

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2 Energy and social complexity

A primer in ecological economics

This chapter charts out the history and main concepts relating to ecological economics. Ecological economics is an interdisciplinary project to understand the interconnections between natural and social systems, particularly economics and ecology (Daly, Jr, and Cobb 1994; Boulding 1970; Prigogine 1984; Odum 2007). In the mid-nineteenth century, the term ‘ecology’ was introduced by the German zoologist Ernst Haeckel. Translated as the study ‘of the household of nature’, Haeckel had in mind the relationships between organisms and their biophysical environments, consisting of interrelating biotic and abiotic elements. A significant focus for ecological analysis was the study of energy and nutrient flows through ecosystems – a term first used by Tansley (1935). As new tools and techniques became available, ecologists could precisely track energy through the whole ecosystem. This development led to the subfield of systems ecology.

Systems ecology and society

Systems ecology is the study of ecosystems through systems theory. System science disciplines are predicated on the holistic focus on interactions, relationships, and transactions between parts (sub-systems) of a more extensive system. Attending to interdependent scales in nested geological, biological, and anthropological systems, systems ecologists are distinguished by their insistence on treating biophysical and social-anthropological dimensions in tandem. This involves recognizing that human activities significantly impact ecosystems and that economic activity is a fundamental and constitutive dimension of all ecosystems. One of the first comprehensive approaches to the coupling of socio-ecological systems, the discipline absorbed insights from and built upon insights from process philosophy (Bergson and Gunn 1907), early Earth systems biology (Lotka 1956, Vernadsky 1944), evolutionary humanism (Huxley 1955; Roy 1931), Catholic evolutionary teleology (Chardin 1966), and first-generation systems theory (Bertalanffy 1969). Concerning cross-scale dynamics between different systemic ‘levels of integration’, there was also an important resonance with theoretical work by Waddington (1942, 1957) in relation to the heuristic of landscape metaphors and in epigenetics and Joseph Needham, who first advanced the idea

of levels of integration in the context of embryology.¹ Contemporary systems ecology applies various disciplinary insights from physics, mathematics, and the life sciences to economics, political economy, and sustainability. This work is an aspect of the broader project to understand the fundamental workings of multifaceted and complex Earth systems.

Both systems ecology and ecological economics reject methodological reductionism and individualism that have dominated the natural and social sciences, particularly economics. Following an injunction first elaborated by Francis Bacon to ‘vex nature’ such that she would give up her secrets (Merchant, 2008), modern science’s successes have been achieved on the back of analysis, dissection, vivisection, and controlled experimentation. The default approach to the scientific study of complex problems has been to break the system down into its component parts to understand how they fit together as a whole. However, by the 1970s, the most influential pioneer of ecological systems science, Ilya Prigogine (1984) had recognized that to address the problems raised by complex systems (from the weather and ecosystem dynamics to the evolution of the economy), science would have to develop new methods. In particular, Prigogine questioned the assumptions of stability, order, and equilibrium that were frequently imposed to make models tractable. As he pointed out, the more scientists who understood either nature or society, the greater their appreciation of the role of dynamic instability and the propensity for ‘order to emerge from chaos’.

Complex systems analysis

In complex systems, the interaction of sub-systems and parts generates emergent macroscopic behaviours that are unpredictable – certainly from any knowledge of the constituent components, however detailed and reliable (for a review, see Fieguth 2017). Such systems are subject to *nonlinear dynamics* that are often associated with *hysteresis* and path-dependent *irreversibility*. In such cases, when *bifurcation* – the discontinuous or catastrophic transition to a new system-state – has been triggered by the change in the value of one or a small number of parameters, merely reversing the value of those parameters will not reverse the state of the system. These features of complex systems make them susceptible to *chaotic behaviour* as a result of sensitivity to initial conditions. These dynamics are driven by feedback loops in which the outputs or parameter changes caused by system change amplify (positive feedback) or dampen (negative feedback) the process. Complex systems also frequently exhibit *self-organized criticality*, that is, a natural and endogenous progression towards a critical *threshold* for bifurcation and the emergence of a new system-state. Finally, a characteristic of many complex systems is their propensity for multiple stable or metastable equilibria. *Metastability* refers to a fragile equilibrium on the cusp of a major transition. Complex systems in both nature and society are often either not at equilibrium or are metastable. Anthropogenic climate change is an instance of the expanding economic sub-system transforming the dynamic inter-relation of

ice-age and interglacial climates that have been two metastable states for our planet for millions of years.

The mathematical characteristics of complex systems are such that similar patterns are observable in biophysical and social domains at every spatial and temporal scale – from the operation of a single cell to complex organisms, weather systems, the functional and evolutionary dynamics of ecosystems, urban traffic systems, food and agriculture and the global economy. Using a common conceptual language of *stocks and flows*, *feedback loops*, *delays*, *bifurcations*, *hysteresis*, and *thresholds*, complex systems approaches have particular traction on problems relating to social-ecological systems (Gunderson, Peterson, and Holling 2008). Regarding ecological economics, a systems ecology that includes social-ecological systems is of central importance precisely because it addresses whole Earth dynamics. At the same time, as Holling and Gunderson (Gunderson and Holling 2001) showed, social-ecological sub-systems of the biosphere are arranged in nested hierarchies or ‘panarchies’. The interlocking patterns of fast and slow cycling in these nested systems and sub-systems creates the potential for cascading, cross-scale transformation.

In representing complex systems, ecological economics and systems ecology typically use a gravitational state-space metaphor. A landscape of possible system-states is represented as a three-dimensional terrain of valleys or ‘basins of attraction’ (attractors) separated by peaks. The basins are points of maximum stability; the peaks maximum instability; and the gradient of a basin’s sides an index of the relative propensity of the system to change. In Figure 2.1 this would involve the ball (the system-state) being more or less likely to move from equilibrium point A to equilibrium point B depending on the resilience of the system-state.

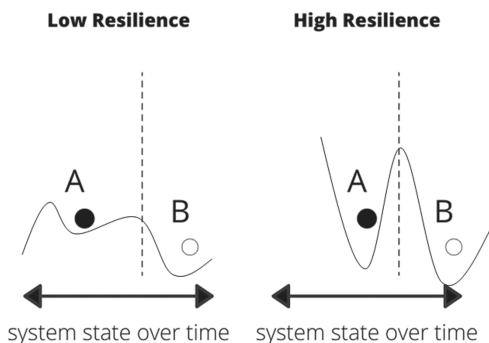


Figure 2.1 Basins of attraction: Construed as a ‘gravitational state space’, different societal configurations are represented as balls drawn towards stable ‘basins of attraction’. The resilience of arrangements is represented by the depth of the basin and ease with which the balls, as representative of system states, can move into a putative alternative basin.

In ecological economics, such ball and basin heuristics are frequently used to conceptualize relative resilience, which is to say, its capacity to absorb shocks or parametric change. The resilience of the economic growth regime is understood to impede sustainability strategies, whereas the resilience of local communities and economies in the face of economic and ecological change is system-characteristic to be nurtured (Pelling, Navarrete, and Redcliff 2012).

Ecological economics and societal energetics

Another essential element of systems ecology is energetics and thermodynamics. Systems ecology centres on the structure of ecosystems as it is engendered by the flows of energy and materials throughout the nested and evolving networks. A closed system with respect to matter, the biosphere is an open system with regard to energy. The constant influx of solar energy amounts to 173,000 TWh per hour (slightly more than total annual human energy consumption). This energy powers the weather system, sustains Earth temperatures with the Goldilocks parameters conducive to life, and powers the entire biosphere. Over two million years of hunter-gathering, as a subset of this total planetary energy budget, human energy systems were entirely dependent upon and a function of this solar flux – whether from:

- Ambient environmental energy: the direct warming effect of sunlight;
- Food: foraging solar energy locked up in plants as a result of photosynthesis or hunting more concentrated forms of solar energy captured by organisms feeding on such primary producers (endo-somatic chemical ‘combustion’ via cellular respiration);
- Fire: extra-somatic combustion to supplement a micro-environment (hearth, home, shelter) and to facilitate the technological;
- Clothing/shelter: to slow down thermal energy losses and maximize the efficient use of food.

For most of the last ten thousand years, as humans engaged in horticulture, pastoralism, and irrigational agriculture, this dependence on the biosphere’s solar budget did not change. Early innovations in renewable energy in mechanical water and windmills did not change this, depending on banks of potential energy locked up in the weather system and hydrological cycle but derived ultimately from the solar influx (Vitousek et al. 1986; Rojstaczer, Sterling, and Moore 2001). Although the population rose rapidly with the onset of agriculture, the solar budget functioned as a ceiling for the expansion of what Goudsblom (1992) referred to as the expansion of the ‘anthroposphere’ within the biosphere. This changed with the advent of fossil fuels and more recently industrial-scale geothermal and nuclear energy. From the late eighteenth century, this order of magnitude increase in the energy flows available to economy and society temporarily dissolved constraints on growth and resulted in an

economy of seemingly perpetual expansion. With growth came an exponential increase in social complexity.

The ecological consequences of this transformation have been profound. In facilitating ‘symbol emancipation’ (Elias and Kilminster 1991) and the emergence of what Christian calls ‘collective learning’ (2011), language and culture facilitated *extensive growth* (Goudsblom 1992). From 100,000 years ago, early humans began to innovate a diverse material culture that made possible expansion into new territories – a process that only came to an end with the settlement of remote Polynesian islands in the Pacific around 500 years ago. Such adaptations saw a steady increase in the overall population but without a significant increase in density or social complexity. In particular, fire as landscape management in ecology saw an evolutionary alliance between humans, perennial grasses, and herbivores (Eisenberg 2000). Such ‘firestick farming’ (Petty 2012) amounted to a distinct energy regime toward agrarianization (Tudge and Tudge 1999).

Farming allowed the human share of total biotic energy flows to increase steadily. Estimates of humanity’s share of the total terrestrial photosynthetic product at the end of the twentieth century vary from 40 per cent (Vitousek et al. 1986) to between 10 and 55 per cent (Rojstaczer, Sterling, and Moore 2001). The calculations are complex (Haberl, Erb, and Krausmann 2014), but the direction of travel is very clear. Steadily increasing access to flows of energy saw a dramatic increase in social complexity.

H.T. Odum: Energy embodied across distributed and hierarchical flow networks

According to Tainter (1988), civilization’s history is punctuated with episodes of systemic collapse and loss of complexity. At some point, our global civilization will surely experience the same, possibly sooner than many might imagine (Turner and Alexander 2014). Although an incremental ‘S-shaped’ process of stagnation (Victor 2008) and/or decline (Greer 2009) is feasible (Davidson 2000), the dynamics of complex systems in ecology would suggest that it would be unduly optimistic to discount the possibility and even likelihood of nonlinear change. Drawing attention to the modern dependence on energy, ecologists and energy specialists routinely point to the ‘embodied energy’ associated with this or that human artefact. For decades, systems ecologists have drawn attention to the networked and hierarchically structured organization (e.g. trophic levels) of energy flows through communities of interdependent species.

Ecological economics has developed an essentially thermodynamic understanding of the economy (Georgescu-Roegen 1971; Daly and Farley 2011; Faber, Manstetten, and Proops 1998). This perspective was elaborated most fully and to the most significant effect in the work of H.T. Odum (2007), who, during the 1970s and 1980s, sought to develop an energy accounting framework that tracked and quantified these flows. From Odum’s perspective,

social complexity refers to diverse phenomena, including the extended division of labour; the number of goods and services produced; the number of languages in play; the number of distinct occupational and social roles; the sophistication and volume of information flows; the ratio of social and cultural specialists to those working in primary production. Complexity is fragile in the sense that, as dissipative structures (Prigogine and Lefever 1973),² 'far from equilibrium' societal configurations are disproportionately vulnerable to disruptions in the flows of energy and materials. The maintenance of 'low entropy' in the form of higher levels of organization and order also incurs costs in the form of zero-sum trade-offs – usually in the form of a loss of complexity or an increase in entropy elsewhere in the biosphere (e.g. pollution, deforestation, dying coral reefs).

For Odum, any form of complexity generated a thermodynamic signature, or 'transformity' (2007) – representing the cumulative energy transformations and associated losses necessary to produce and sustain a given unit of complexity. Transformities thus represented embodied energy ('eMergy'), but not just that locked up in the material a particular artefact (e.g. the chemical energy in the organic material of a lion; aluminium, plastic, silicon, copper etc. in a computer) but in all of the myriad networked energy transformations associated with every single economic or ecological activity involved in the production of that artefact. For the lion, this means the solar energy trapped by sufficient grassland to feed large enough functioning herds of herbivores, which can in turn feed a viable population of inter-breeding prides of lions. For the computer, the transformity value would include mining and processing of the raw materials; manufacturing plants; machines to build such plants; packaging materials; packaging material plant; advertising companies; the social and economic reproduction of advertising executives; workers for every other activity and function; schools; hospitals; universities; lorries; fuel; lorry drivers etc. *ad infinitum*.

The concept of transformity value for a material object and activity such as operating a computer or reading a book is perhaps easy to understand. Less intuitively, it also applies to intangible phenomena which may seem immaterial. At least as a heuristic, it applies to the idea and institutions of democracy; equality under the law; the ideology and programme of any 'ism'; universal human rights; animal rights; and social media.

In theory, this kind of energy accounting realizes the theoretical dream in Tansley's first articulation of the idea of an ecosystem – that the precise dynamic structure of the network could be impressed in the single, universal currency of energy (SolarEmJoules), that is, the units of embodied solar energy necessary for the maintenance and reproduction of any 'node' in the system. The higher any such node (activity, artefact, entity) sits in the nested integration and energy transformation levels, the greater the associated transformity value and the more expensive and fragile the phenomenon. In principle, the accounting framework allows systematic comparison of hitherto incommensurable, qualitative phenomena: apples with oranges; computers with Orangutangs. And in this way, Odum's theory of eMergy, energy hierarchies and transformity values

makes possible a penetrating analysis of the trade-offs and interactions between different and competing values and social phenomena. As a heuristic, it puts a price on politics.

A good example of this is Rifkin's (2009) account of the paradox whereby global eco-centric values and a greater capacity for empathy emerge necessarily in tandem with massive energy flows and the ecological crisis associated with modern growth economics. Ecocentrism and empathy are associated with a high transformity value – which is not surprising if one considers the education levels, technological sophistication, and complexity of societies that have spawned Earth. First, Friends of the Earth and Oxfam. Neither empathy (Rifkin) nor the decline of interpersonal violence (Pinker), nor the internalization of a more pacified psychological habitus (Elias) are innate nor universal. Instead, they have developed as both an unintended consequence and driver of social complexity. And in principle, each comes with a price tag in the form of a transformity value.

Steering and channelling: Unintentional and intentional human regulation of the Earth system

The laws of thermodynamics govern all human and natural systems. The emergence of complexity and the proliferating diversity of entities and processes – whether in evolutionary ecology or the economy – is a function of myriad interdependent balancing processes, in which stocks, flows, outputs, and inputs across all parts of the network regulate each other by way of positive and negative feedback loops. Over time, it is such processes that generate the emergent order that defines any particular system. Biologists refer to this dynamic equilibrium as homeostasis in the context of the physiological regulatory systems of individual organisms.

To the chagrin of many of his colleagues, James Lovelock, with his Gaia concept, suggested that the biosphere's feedback systems operated in a quasi-homeostatic way such that the Earth could be viewed as a self-regulating organism (2000). Now widely accepted, the theory of 'sybiogenesis' advanced by Lyn Margulis (2008) focused attention on multiple, nested units of analysis – mitochondria and chloroplasts within eukaryotic cells; functional gut bacteria within vertebrate intestines; coral reefs; forest systems within the biosphere.

The apparent stability of such systems is in part a function of temporal scale. As Daniel Botkin (1990) showed, rupture and discontinuity are a regular and intrinsic dimension of natural (and by extension) human systems. Metastability over a given period masks continuous change: a propensity for oscillation between relatively stable states (in the case of ice-ages and interglacials during the Pleistocene); the progressive increase in complexity in relation to the evolutionary ecology of the biosphere over 4 billion years; and in the case of humanity, an accelerating and runaway propensity for technical innovation,

cultural change, and population growth (Wills 1998). Nevertheless, during long periods of metastability, the configuration of these systems and the values of keystone parameters (such as temperature in Lovelock's Gaia) is kept within limits compatible with system integrity by the operation of feedback loops. By definition, more complex systems can generate more complex stabilizing mechanisms; but by the same token, they are vulnerable to more unpredictable, destabilizing patterns of reinforcing feedback. They are also more fragile simply because feedback networks' complexity is a direct function of energy throughput. This is particularly significant for human culture because human activities and institutions, being the most information-rich (at least, as far as we know) in the universe, are associated with massive energy flows and transformities.

Human beings have always been a component of ecosystems. As we have seen, the pattern of extensive growth that led our species out of Africa into more or less every ecosystem on Earth was a function of culture and 'collective leaning' – a facility made possible by language (and song, storytelling), given enormous additional leverage by writing and exponential traction with digital information and the Internet. As the metabolic weight and ecological significance of human activities have risen over time the anthroposphere's role in the regulation of the metabolism of the biosphere has increased dramatically. This is the essence of Rockstrom et al.'s (2009) focus on a 'safe operating space'. The danger comes from degrading the network of balancing feedback loops that have evolved over hundreds of millions of years. The greater the ratio of anthroposphere to biosphere, the more that humanity will be forced to take over the management of the system. This is the prospect raised by geoengineering as a response to climate change.

Far-future prospects notwithstanding, however, the severity of the current bottleneck is real. From an ecological – economic perspective, this is a result of 'pigeons coming home to roost' – in other words, the trajectory of extensive and intensive growth associated with the anthroposphere, and more recently, the exponential growth of the modern market economy finally coming up against hard biophysical limits. Systems become unstable when feedback loops are no longer able to regulate component sub-systems. With industrial modernity, humanity's intrinsic propensity to increase our share of global energy flows has become more catastrophic and impossible to ignore. In systems terms, the decoupling of natural and human systems has become complete. The project of sustainability is to recouple the anthroposphere within the biosphere.

To the extent that this process might be managed and planned, 'recoupling' implies choices about the extent to which humanity (i) consciously takes over and replaces evolved regulatory systems (geoengineering), or on the other hand (ii) operates a much higher degree of restraint, reduces the metabolic scale and the flows of materials and energy associated with our activities, restores natural ecosystem function on a planetary scale, and accepts the reality of biophysical limits.

Ecological economics

Foundational researchers who frame disciplinary commitment to the primacy of limits (Victor 2008; Jackson 2009; Rockstrom et al. 2009) are becoming more open regarding the social implications of changing primary feedback loops connecting culturally and politically non-negotiable outcomes and the metabolism of growth (Jackson and Victor 2011). However, it is still less common that we see serious consideration of the balance between informal markets/marketplaces (Livelihood), the bureaucratic institutions and redistributive mechanisms of the public sector (State), and the abstract movement of goods, people, and capital in the price-setting markets of the formal economy (Market) (Ament 2020; Akbulut and Adaman 2020; Ruder and Sanniti 2019; Spencer, Perkins, and Erickson 2018; Pirgmaier and Steinberger 2019; Quilley and Zywert 2019; Kish and Farley 2021; Fevrier 2020; Bliss and Egler 2020; Vargas Roncancio et al. 2019).

Such a broad focus requires interdisciplinary inputs and perspectives. Ecological economics (EE) emerged as an interdisciplinary approach to those social and ecological systems underpinning the economy. Modelling the feedback loops and regulations within socio-ecological systems at varying scales, the field has traditionally started from a methodological and programmatic injunction that metabolic *scale* should be prioritized over questions of allocative/distributional *justice*, which in turn, frames problems of market *efficiency*. See Table 2.1 for an overview of the approaches in ecological economics.

Drawing on systems ecology, EE has been able to deploy a more decadent array of methodologies than are available to mainstream economists. Techniques such as dynamic modelling and material flow analysis have been applied to social-ecological problems. However, the self-consciously quantitative and scientific orientation of the discipline has meant that the research programme has often prioritized biological over social systems – the latter being intrinsically less tractable to such methods (Kish and Farley 2021).

In a paper included in the recent EE agenda-setting project, Melgar-Melgar and Hall argue that EE needs to return to its ‘biophysical roots’, and sustainability will not happen if researchers do not prioritize ‘proper’ biophysical realities (2020). To the extent that this means that the problem of metabolic scale must provide the framework for innovations and transformations concerning justice or the regulation of markets, it is hard to disagree. However, the implication that biophysical foundations of socio-economic systems must be at the centre for societal solutions and justice is misleading because of what it leaves out. A case in point would be Melgar-Melgar and Hall’s assertion that:

Many important issues pertaining to the quality of life, including SDGs for gender equality, peace, justice, and strong institutions do not require economic growth or large increases in energy consumption for their implementation, and may be more important and realistic social goals than a continual increasing material wealth.

Table 2.1 A non-exhaustive list of approaches in ecological economics

<i>Classification</i>	<i>Examples of tools, methods, and approaches</i>	<i>Comments and critiques</i>
Quantitative	Natural and cultural capital	Argue we need to ensure cultural capacity for adaptation rather than adapting the economy for a healthy culture (Berkes and Folke 2000).
	Ecosystem services	Applying monetary valuation to Earth systems in relation to how they help humans (Costanza et al. 1997; 2017).
	Modelling	Shows how stocks and flows of resources and economic systems function in a reductive manner that ignores cultural dynamics (Victor 2008).
	Willingness to pay	Individual motivations Reduces cultural place-based meaning to economic monetary value (Pate and Loomis 1997; Johansson–Stenman 1998).
	Carbon pricing	Placing a cost on the contribution to carbon (Rhodes and Jaccard 2013).
Qualitative and cultural progressive	Coevolution	Demonstrate interconnection but not what a healthy society might be (Kallis and Norgaard 2010).
	Metrics	Measuring culture and planetary systems to be included in a metric for how well a country is doing (O’Neill et al. 2018; Wackernagel et al. 1999; Bossel 1999).
	Cultural ecosystem services	Recognize the cultural value of ecosystems but not the value of culture for ecosystems (Costanza et al. 1997; Liu et al. 2007).
New radical approaches	Develop an ecosystem identity	Introduces the need for an ecosystem identity without indication on how to scale it up or to bolster such a culture (Kumar and Kumar 2008; Zavestoski 2004).
	K-Modernity	A new rendition of ‘the third way’ using sociological history and systems thinking that engages seriously with a possibility for a reembedded economy (Quilley 2017; Quilley and Zywert 2019).
	Social-ecological economics	Argues for ecological economic approaches that are heterodox in nature. Put forward social-ecological economics (SEE) (Spash 2017).
	Participatory democracy	Radical democratization of community planning (Akbulut and Adaman 2020).
	Non-market systems	The importance of trade, barter, and gift outside of market systems (Bliss and Egler 2020).
	Ecological monetary theory	A new theory of money that emphasises relationality and gender (Ament 2020).
	Non-predatory ontologies	Elimination of predatory ontologies that perpetuate systems of oppression (Ruder and Sanniti 2019).
Deep ecological economics	Includes ecofeminism and voices of those marginalised without clear steps for application (Naess 1990).	

This statement is inconsistent with the biophysical reality outlined above – namely that biophysical limits to growth arise precisely from the fact that the kind of social complexity embodied in ‘gender equality, peace, justice, and strong institutions’ comes with an entropic price tag in the form of high transformity values (Kish and Quilley 2017; O’Neill et al. 2018; Hickel 2019).

While Melgar-Melgar and Hall recognize the need for social approaches within EE, the persistent need to highlight one over the other is problematic. Both biophysical and social justice issues need to be treated as equally important. In response to the growing quantitative nature of EE, there is a more recent movement towards an emphasis on social justice and feminist ecological economics (Spencer, Perkins, and Erickson 2018; Perkins 2010; Akbulut et al. 2019; Singh 2019; Dengler and Seebacher 2019; Temper, McGarry, and Weber 2019). While this proliferating body of work takes serious strides in the efforts of recoupling, many times their arguments omit similar recognition as some of those who prioritize biophysical argumentation. Discounting the political-economic implications of metabolic scale, activist-academics with a zeal for ‘political rigour’ (Temper, McGarry, and Weber 2019) underplay, in the same way, the extent to which the projection of social justice goals rooted in the assumptions of the high-energy, ultra-individuated, mobile ‘society of individuals’ (Elias 1991; Bauman 2007) may not succeed without the corresponding material and energy flows. The tension between the maximum scale of economy conducive to ecological integrity, on the one hand, and the minimum scale necessary to sustain and enhance cherished liberal, cosmopolitan norms, on the other.³

The trade-offs implicit in this tension are illuminated by Odum’s heuristic of energy hierarchies (outlined above) precisely because this framework allows, at least in principle, very different phenomena to be made commensurable. EE has yet to take advantage of this framework mainly because little integration with historical sociology insights (which we outline in Chapter 3). While society is an explicit part of the EE framework, practitioners and theorists often ignore or misunderstand it. Placing society and culture within the biosphere’s domain creates a temptation to deal with society as a derivative of the biosphere or as taking ontological priority. With this in mind, we suggest that EE supplements the metaphor of society embedded in ecology with a dimensional view of EE (Figure 2.2). This heuristic accords with the original insights of the organicist biology and evolutionary humanism, that is, that emergent higher levels of integration are constrained by but cannot be reduced to lower levels (as with the relation between frog genome/embryological morphology; geosphere/biosphere; or biosphere/anthroposphere). But at the same time, it emerges directly from Odum’s paradigm of energy hierarchy and complexity – with information-rich processes (such as changes in values or ideas) being associated with embodied energy signatures orders of magnitude greater than the underlying/antecedent material processes upon which they depend.

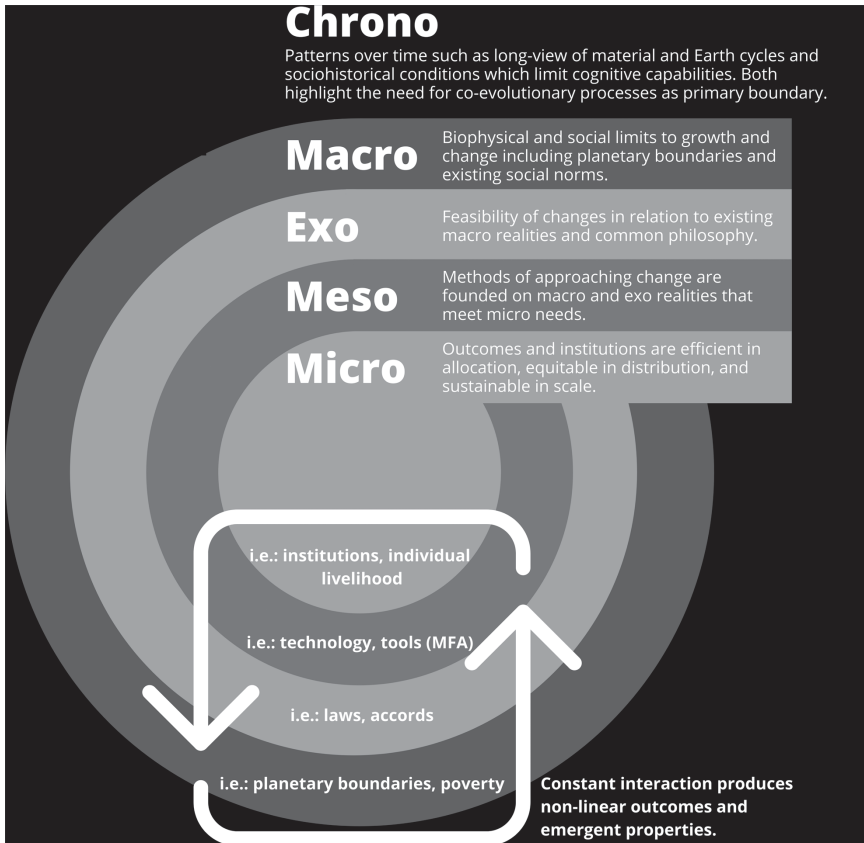


Figure 2.2 A dimensional view of ecological economic spheres of research and practice.

Development goals and levels of reality

We would like to suggest a new limits-oriented and scale-sensitive way of thinking about ecological economics and complex socio-ecological systems research. Supplementing the heuristic of nested systems and the energy hierarchy, we also need to think in terms of dimensions of reality (see Figure 2.2).

The first reality we work in, the *Chrono* dimension, acknowledges that we are working within enormously extended time scales. Modern socio-ecological systems are the outcome of evolutionary processes evolving over billions of years. By understanding humanity's problems as a moment in an unfathomably long historical process, we can centre an understanding of mutually enhancing complexification as the cosmic guiding principle. Such a 'big history' and insistence on the 'long now' provides an appropriate cognitive framing for problems and solutions at lower and more immediate scales (Christian 2011, 2018; Brand 2008).

Secondly, *macro* reality, pertains to biophysical and social limits to growth. By placing such limits within the Chrono, we can highlight the extent to which human culture has developed over millennia and incorporates a pattern language (Alexander 1977). Thus, for success and well-being that is more significant in the long run, than the priorities and axioms generated by capitalist modernization, such patterns relate to cooperation, psychological attachment (Bowlby 1997; Mate and Neufeld 2013), nutrition, exercise, the experience of natural landscapes (Louv 2008), family life, and parenting. EE has a good sense of the biophysical but an underdeveloped analysis of social, psychological, and cultural dimensions of the meaning of ‘flourishing’ and the ways that these might tie into the deep historical meaning of human development. And in this vein, historical sociology provides us with a raft of problematic social ‘boundaries’ that emerged during the great acceleration, such as alienation, disenchantment, excessive individualism, rationalization, the loss of attachments to place, and erosion of social-psychological attachment. The space between the minimum scale for humane society and the maximum scale for ecological integrity defines an ‘adjacent possible’ – an unexplored part of the landscape of political-economic possibility reflecting unimagined and possibly unimaginable societal configurations (Kauffman 2003). The UN Sustainable Development Goals (SDGs) should provide a compass bearing into the heart of this adjacent possible.

Exo reality pertains to the feasibility of change. Here, we need to ask what processes exist that constrain or and facilitate transformational ideas and policies. The *Exo*-reality refers to deep-seated norms and aspects of socialization that have become naturalized and invisible. Thus, for example, in mobile and individuated society, our commitment to universal human rights is inextricably linked to the notion of the sovereign individual subject that emerged during the Enlightenment in the work of Descartes, Locke, Kant, Rousseau, and Paine (Taylor 1992; Kant 1784; Rousseau and Gourevitch 1997). Any significant move away from the ‘liquid’ society of individuals and towards a more communitarian, place-bound form of economy and society would quickly bring this conception into question. Rights conceived separately from interdependency and mutual obligation are challenging to reconcile with a paradigm shift in eco-centric behavioural restraint. At the same time, the fact that personality structure is variable has a history and a sociology (Elias 2012) opens the way for powerful ways of engaging with social-psychological habitus and the steering of shared norms.

The fourth *meso* reality pertains to methods used to develop SDGs. Are they feasible? Are they scale-sensitive? Do they take Chrono and Macro dimensions seriously? In particular, tools and methodologies developed within the existing *Exo* reality of growth likely need re-evaluating. This caveat includes instruments such as material flow analysis and ecosystem service pricing and approaches to technology and taken-for-granted approaches to equity and justice, particularly to the extent that they embody (tacit) axiomatic assumptions about the role of the State or the Market.

Micro-reality refers to what is happening at the level of individuals and communities. The main questions about individuals and institutions become:

- Do the way humans live and the institutions we rely upon adhere to long-scale realities (cooperative)?
- Are they maintained within macro boundaries (planetary boundaries and social boundaries)?
- What assumptions existing in them make change difficult (growth)?
- Are the methods used within them to create regulatory feedback rely on methodologies that breakthrough Exo's assumptions?

It is worth saying that different people work within different levels of the diagram. Some may only do ecosystem management over the next ten years, while others may look at it over thousands of years. This kind of enormous diagram enforces the need for analysis and explicit defining of boundaries (Midgley 2000). A lot of existing debate within EE stems from inappropriate or absent boundary analysis.

In what follows, we use the precepts and tools of ecological economics as elaborated here, and the heuristic advanced in Figures 2.1 and 2.2 to investigate, evaluate, and recommend change within each SDG. The SDGs already do a decent job at integrating biophysical limits to growth and some surface-level social limits. However, many ideas are still predicated on growth economics and do not seriously take the history of sociological modernity. In Chapter 3, we explore more fully the 'social' limits to growth.

Notes

- 1 See for a review of all of these theoretical currents see Quilley (2010).
- 2 Dissipative systems refer to 'low entropy' structures that are maintained in a 'far from equilibrium' state of complexity only based on a constant throughput and exchange of energy.
- 3 These theses have been elaborated on in detail in previous publications (Kish and Quilley 2017; Quilley 2013, 2017, 2019).

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3 State, Market, and Livelihood

Ideology, politics, and political economy in an era of limits

The focus of this chapter is on the political economy of a post-growth economy and the relation between the (i) *State*, (ii) price-setting *Markets*, and the (iii) informal processes of exchange, familial care, place-bound community, mutual aid, and reciprocation – which we designate as *Livelihood*. Tracing the dynamics of commodification and the disembedding/re-embedding of economic life as dramas in the thermodynamic play of complexity and transformity, we begin by elaborating the links between the emergence of the ‘economy’ (or Market) as such and other characteristic domains of modernity such as the ‘state’ and ‘religion’ and a ‘secular civil society’. We then explore ‘social limits to growth’ before analysing the impact of a lower energy/material throughput society on politics and the ideological landscape.

Disembedding, re-embedding, and complexity

The process of capitalist modernization has engendered distinctive and specific relationships between production and consumption; informal and formal economy; household and economy; State, Market, and civil society; the secular and religious spheres, church, and State. These configurations have become so naturalized that it is hard to imagine a world in which such categories do not have any (or the same) meaning or analytical purchase. However, such a world used to exist, continues to exist marginally (Webb 2006), and may re-emerge in a different form in the future. As we have shown in Chapter 2, this edifice of institutions, ideas, laws, and taken-for-granted cultural categories constitute a high-transformity form of social complexity that depends on an unprecedented throughput of energy and materials. These categories are, or at least have been (imperfectly), congruent with the present’s ideological and political-economic landscape. However, they are potentially highly misleading when evaluating possible future configurations of society and economy. Even a partial movement down the energy hierarchy, involving a loss of complexity, would create conditions for some re-embedding of the economy and re-enchantment of social life (Odum and Odum 2006).

If, as Wittgenstein argued, the limits of language constitute ‘the limits of [my] world’, one of the most significant challenges of any putative sustainable

transition is to develop, within the discursive framework of the present, an alternative ‘language game’ (Wittgenstein 2010). If one imagines a three-dimensional heuristic ‘state-space landscape’ of political-economic configurations (or corresponding) political ideologies, then extant categories and understandings of the relationship between State and Market, in particular, will foreground a trajectory of business as usual. ‘Common sense’ descriptors will tend to draw a veil over options for which we do not have the language.

Recalling the tandem development of Elias’s ‘triad of controls’ (2012 Chapter 2), the disembedding and parsing out of ‘economy’, ‘church’, and ‘state’ involved the emergence of complexity and a paradigm shift up the energy hierarchy. A post-growth economy is likely to entail some or all of the following:

- Reconfiguration regarding expected roles and responsibilities between genders; in some instances, depending on the circumstance and culture, this may result in the re-establishment of traditional gender roles within the family, while in others, it supports a reorientation of the very notion of gendered work and prescribes responsibilities based on justice rather than gender
- The re-emergence of the domestic households as a site for (re)production and provisioning, in both low- and high-tech forms
- Subsidiarity: Enhanced size and role of community and localized states compared to national and supranational authorities.
- Global trade limited to specialized goods, foods, and services, with local production and national trade as a priority for everyday goods, foods, and services
- Supply chains with high local connectivity and dependence, linked nationally between larger regional nodes
- Restraint and normalization of reduced spatial mobility
- Diminished internalization of psychological restraints on behaviour and affective expression
- A less-constrained psychic habitus
- A re-emphasis on place-bound community as a significant frame for individual welfare and security
- Greater emphasis on localization for primary economic activity
- Re-enchantment either in the form of Earth-based spiritualities, or reinvigorated organized religions as the focus for social life, shared culture, and processes of mutual identification
- Potential for inter-group antagonism and even violence

Social limits to growth

As a corollary of biophysical limits, researchers have also speculated about possible ‘social limits to growth’, comparable to what Kate Raworth calls ‘social

foundations' (2017). Although this concept was coined as a play on words by Fred Hirsch shortly after the Meadows report came out, the underlying idea goes back to Marx's notion of the immiseration of the proletariat by market pressure on wages. As Polanyi argued in *The Great Transformation*:

Our thesis is that the idea of a self-adjusting market implied a stark utopia. Such an institution could not exist for any length of time without annihilating the human and natural substance of society; ... Inevitably, society took measures to protect itself, but whatever measures it took impaired the self-regulation of the Market, disorganised industrial life, and thus endangered society in yet another way.

(2001 [1944], pp. 3–4)

At the heart of Polanyi's thesis is the wicked dilemma that markets are essential for growth but at the same time are corrosive undermine the social reproduction of labour – resulting in the familiar oscillations between deregulation of markets and the extension of state protections. Hirsch tweaked this insight arguing that advancing welfare and happiness through economic growth generated paradoxical side-effects that undermined well-being. His analysis echoed nineteenth-century diagnoses of alienation (Marx), disenchantment (Weber), anomie (Durkheim), and libidinal repression (Freud), as well as contemporary analyses of 'ontological insecurity' (Giddens 1991; Laing 1965), narcissism (Lasch 1991) and crises of meaning (Becker 1973), and anticipated more recent commentaries on 'affluenza' (Graaf, Naylor, and Wann 2002), as well as loneliness and the collapse of social capital (Putnam 2020). In the context of high levels of individuation, affluence, Hirsch observed, engendered frustration and unhappiness.

However, although the deleterious social and psychological impacts of capitalist modernization are well documented, it is difficult to argue that, in themselves, they have ever presented a serious break on growth economics. Certainly, these externalities have, as Polanyi argued, precluded the utopian project of Market Society, and are always generating 'countervailing movements for societal protection'. But these take the form of the extensions of the State and the erosion to the extinction of self-actualizing familial and community forms of protection. During the nineteenth and twentieth centuries, the *State* and *Market* emerged as the archetypal mutually reinforcing dyad of capitalist modernity. Although left- and right-wing politics might shift the balance periodically, and although some societies developed more state-centric or market-centric configurations, the underlying logic was always the same: the erosion of the domain of *Livelihood*. This process has been described in detail elsewhere (Quilley 2019; Quilley and Zywert 2019).

Following the enclosure movement, individualized incentives for economic gain overpowered livelihood. During this time, there was a shift from traditional economies to market economics (Table 3.1).

Table 3.1 The differences between traditional and market economies

<i>Traditional economy</i>	<i>Market economy</i>
Primary relationships	Secondary relationships
Small communities	Urbanization
Religious States	Secular States
Obligation	Freedom
Homogenous	Multicultural
Reciprocal	Exchange
Pre-Industrial	Industrial

In contrast to embedded economies, the market economy that emerged post-Industrial Revolution is primarily built on secondary relationships. People buy and sell products without knowing each other and often without seeing the face of the person who produced them. There is some resistance against this with more localized and artisanal product development, but most trade is usually faceless. People are often completely unaware of who has made their products or who is benefiting or suffering from the transaction. Market economies also thrive within urbanized environments as government taxation is needed to afford the infrastructure and social services such as libraries and educational systems. The relationship between the market, therefore, becomes integral to the future of adequate social services.

These early dynamics of capitalist modernity engendered social relations and further individualization patterns that epitomized and idealized the rational sovereign individual. Tied up in this process is a series of binaries discussed by sociologists as emergent from the discontinuity of individualized and progressive modernity (Giddens 1990). In many cases, social changes improve one thing while leading to unintended consequences that may be negative or positive. However, objectively, we see that modernization created a new understanding of time as progressive and linear, shifted orientation towards the future, prioritized progress, increased rates of change, brought in significant technological innovation, and included a massive shift in the experience of experience ‘of space and time, of the self and others, of life’s possibilities and perils’ (Berman 1988, p. 15). It also has challenged nearly every social foundation such as inequality, poverty, gender equity, meaningful work, and strong mental health (Anne & David, 2014; Azzellini 2016; Biesecker and Hofmeister 2010; Crehan 2016; Spann 2017; Twenge 2017). These changes in society had extreme impacts on personality structures. For example, alienation implies that our abilities qua humanity is taken over by other entities (Ollman 1977). It is a feeling of estrangement from culture, groups, situations, or work leading to deep dissatisfaction due to lack of direct involvement.

A typical example of this is the assembly line – where producers were once involved in the manufacture of the entire product, they started to contribute just one small piece and never saw the final product. They experienced little connection to their work [but were paid] ...sufficiently well such that they

could gradually ameliorate feelings of disconnection through passive consumption. Consumerism developed to fill the void of meaningful work and the loss of self within the community. Now free from the confinements of their home and family, the individual could become whomever they wanted. Greatly exaggerated over time, we now see hyper-individualism with an extreme focus on self-help, self-improvement, collected 'likes', and delaying family commitments. These are all upheld in an increasingly dissipative structure. The Sustainable Development Goals (SDGs) are very explicitly premised on a general pattern of life that emerged during this time. Freedom is a deeply engrained norm that comes with the highest price tag.

Elias (1991) observed that in a complex society of individuals, the basic 'survival unit' was no longer a place-bound, face-to-face community rooted in the family but abstract institutions and interdependent social relations of the modern State. In all pre-modern societies, individuals' physical security and welfare depend almost entirely on the kinship networks of extended family and band and supplemented in more complex agrarian societies by more place-bound subsistence communities. With greater complexity, survival units began to incorporate larger, interdependent networks of strangers – as with medieval walled cities and eventually city-states – certainly regarding military security. However, regarding health and welfare, family relationships remained paramount. Perhaps the most significant and paradigmatic change associated with modernity relates to the process of individualization.

The tension between the 'survival unit' in a society of individuals predicated upon the State (welfare benefits, social insurance, health systems, physical security, citizenship) and the Market (employment, shares, private insurance), on the one hand, and the localist, communitarian survival units associated with Livelihood, on the other, is highly relevant to the politics of growth. Biophysical limits to growth are clearly a direct threat to the Market, which would stagnate or more likely contract – as advocated by proponents of 'degrowth' and ecological economics (Chapter 2). The loss of those forms of security provided through the Market would presumably have to be compensated by an extension of the State. But since the State depends on tax transfers from the Market, it will not and could not take up the slack and contract. Degrowth would therefore have a devastating impact on the welfare and security of individuals and families – an outcome that would certainly end in violence and social disorder on a large scale – leading Quilley to observe that degrowth could not be a 'liberal project' (2013).

For Polanyi, the emergence of the 'economy' as a distinct sphere was inextricably tied to the 'disembedding' of individuals from the lattice of reciprocal obligation and constraints synonymous with traditional forms of rural, agrarian social organization (Polanyi 1957). With the emergence of the self-regulating Market, 'not blood tie, legal compulsion, religious obligation, fealty or magic [compel] participation in economic life, but specifically economic institutions such as private enterprise and the wage system' (Polanyi 1968, p. 81). However, the 'freedom' to move, work, trade, marry, and generally make a life came at the cost of the weakening or losing traditional survival units and much greater insecurity for individuals.

The State's top-down strategies centred on the regulation of labour markets, social housing, health systems, and social insurance. The latter processes came to dominate, and the archetypical survival unit for modern societies is the nation-state. Today, individuals who suffer unemployment or ill-health look much less to family, not at all to group or face-to-face community, and nor any longer, to creative, quasi-familial innovations such as the early-modern guild or the Basque gastronomic society. Modern individuals look instead to abstract citizen-based systems (i.e. social or private insurance and contracts) constructed and regulated by the State, even if sometimes provided through monopolistic market systems. This goes a long way to explaining the dyadic mutual dependency of the nation-state and the sovereign individual agent who has appeared as a foundational postulate in the great works of moral philosophy, law, political polemic, and economic theory since the eighteenth century.

Consistent with the ideas presented in Chapter 1, here we explore what a reorientation of State, Market, and Livelihood may look like, as shown in Figure 3.1.

Karl Polanyi and more viscous modernity: More embedded economic development

Capitalist modernization is always defined by the disembedding of the price-setting market mechanism; the differentiation of the formal economy from other institutions and cultural domains; market-driven processes of instrumental rationalization in which culturally construed, cosmological, and ontological 'ends' are subordinated to technical 'means'. In this process, there is an iterative and spiralling and tandem development of the *Market* and the *State*. The latter refers to regulatory institutions, monopolies and authority operating over progressively more extensive geographical territories. The mutual dependence of these domains is straightforward. The operation of the Market depends on the rule of law (contracts) guaranteed by the State's monopoly of violence, while the State depends on fiscal transfers from a growing market economy.

This virtuous cycle described in detail by Elias is accompanied by an inexorable dynamic of social and psychological individualization in which increasing spatial and social mobility and the extending division of labour are complemented by an intensification of internal psychological controls and the psychogenesis of a more restrained, contained and less permeable personality structure (*'Homo clausus'*). With greater social complexity and hyper-connectivity, such individuals operate increasingly in the 'liquid' milieu of economic and social 'flows' against the backdrop of rationalized social and economic space (Bauman 2007; Lash and Urry 1993; Lefebvre 1992). With this in mind, the most significant transformation associated with capitalist modernization is not the titanic struggle between capital and labour, between the Market and the State, or between left and right. Rather than a binary Rubicon relating to the ownership of the means of production, the defining struggle of economic modernity centres on the tension between the abstract, rationalized *space* of the disembedded formal economy and the concrete, contextual, particular *places* of

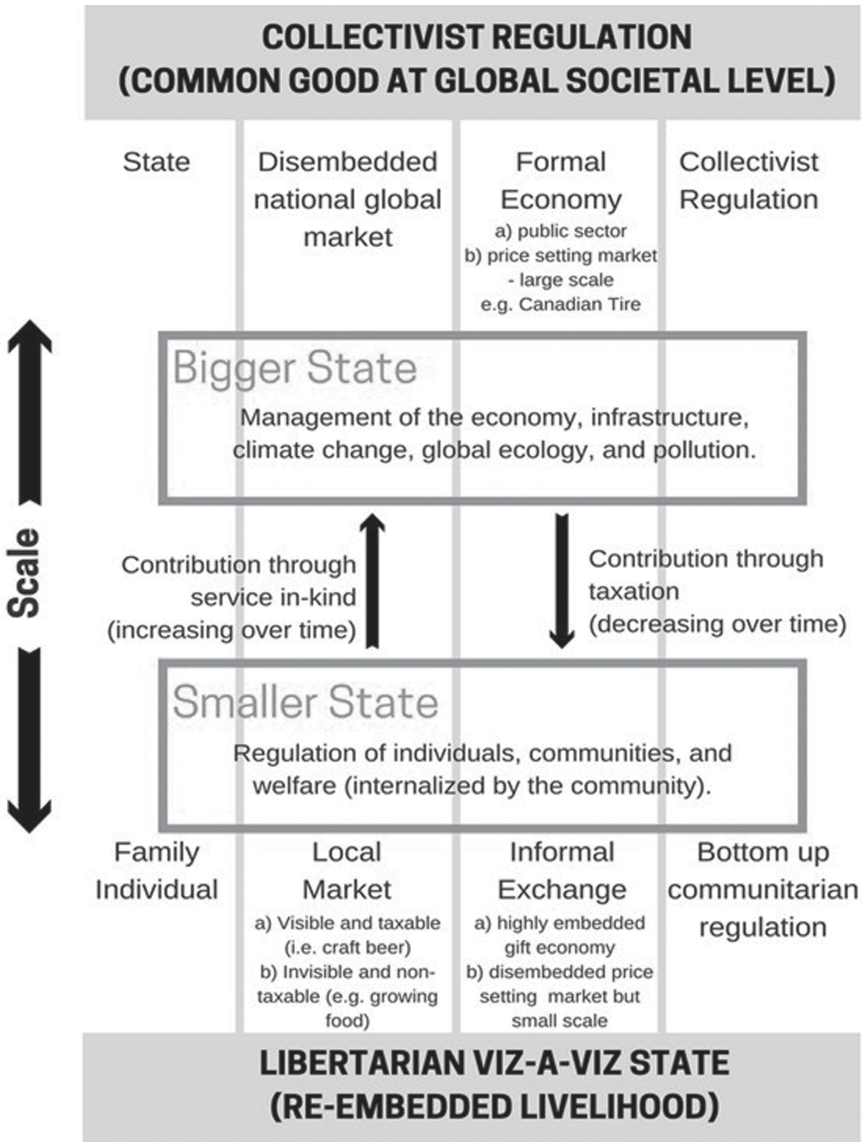


Figure 3.1 A new configuration of society that allows for localized bottom-up complexity and continued top-down regulation on major companies.

the informal economy. From this perspective, it is possible to construe a ‘state-space’ heuristic that charts the repertoire of conceivable political-economic configurations as if arrayed across a metaphorical landscape (Figure 3.2).

In this landscape, potentially innumerable variants are differentiated by the interweaving of three dimensions: State, Market and Livelihood.

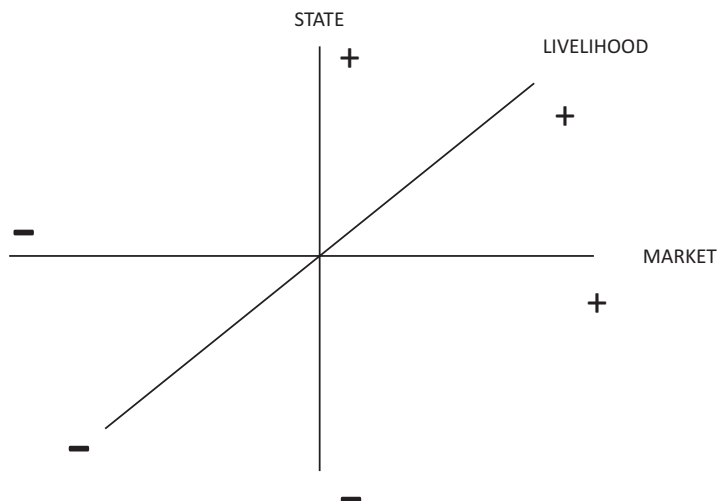


Figure 3.2 State, Market, Livelihood: Three-dimensional state space.

Figure 3.3 allows a comparison of the location of different political-economic configurations in the state space.

The experience of the state-led response to depression and total war consolidated the common-sensical appreciation of Keynesian macro-economics and demand management – and by extension, the prestige of state institutions as they increasingly intervened into other areas of social and cultural life. In this way, the post-war social compact reflected a decisive resolution of the problem of how to contain and regulate capitalism in favour of the top-down mechanisms of State and against the resurgence of bottom-up associations of family and place-bound community. This was not a foregone conclusion. Throughout the nineteenth century, societal innovations abounded, focusing on localism, sufficiency, and place, and occupational association. Nevertheless, the experience of two world wars and a global economic depression ensured that both political parties of the left and organized labour converged on an essentially corporatist approach towards the regulation of national capitalism. In many cases, this included formal tripartite bargaining between capital and labour organizations mediated by the State around structured and legal income policies and welfare bargaining (Scholten 1987; Streeck 1992). There is some similarity between both Fascist approaches to economic crisis on the one hand, and the Keynesian justification for counter-cyclical spending, as well as the wider societal project of post-war corporatism, on the other (Pinto 2017). This continuity suggests that the habitual binary of State versus Market is misleading. A comparison and synthesis of the range of historical experiences and political-economic outcomes suggest that we should rather consider the qualitative variability of the State–Market as a continuous variable. This is the logical conclusion of the ‘varieties of capitalism’ literature referred to in Chapter 4.

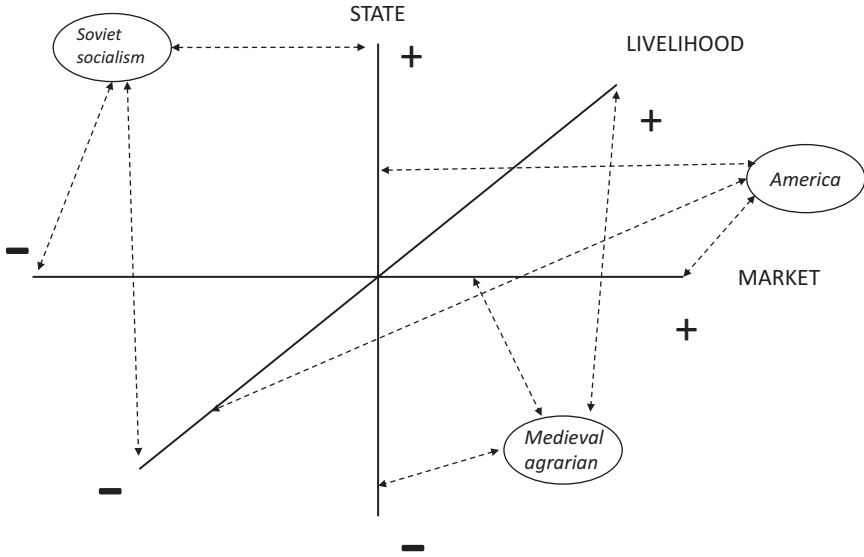


Figure 3.3 State, Market, Livelihood: Three-dimensional state space applied to Soviet socialism (central planning, absence of price-setting markets, minimal livelihood), medieval agrarianism (little State, some exposure to inter-regional price-setting markets and predominance of livelihood relations of subsistence production and exchange), and post-war American capitalism (extensive State, the predominance of price-setting Markets and minimal Livelihood). Concerning the latter, a more fine-grained analysis would see the informal, untaxed drug economy to be a dysfunctional dimension of Livelihood – and one that is highly significant for some communities.

One important distinction that needs to be kept at the forefront of the analysis is between *collectivism* and *communitarianism*. The operative we-identity in modern economies tends towards either civic nationalism, ethno-religious identification, or occupational class's social imaginary. That of pre-modern societies tends towards place-bound communities of subsistence, family, or clan. Collectivism pertains to the former and is mediated via the modern State – whether that is the aggressive theocratic State of the Islamic Republic of Iran, the state-capitalist project of the Soviet State, the civic national and class solidarities of European social democratic states, or the developmental nationalism of Kemal Ataturk in Turkey. In contrast, communitarianism is a facet of place-bound identifications and survival units. It co-exists with the modern State, and such survival units are inevitably eroded either by design or as a function of spatial and social mobility. To some extent, whether communitarianism can survive any kind of collectivism is the same question as to whether price-setting markets, once let loose, can be contained; whether economies can be partially disembedded; or the extent to which non-market forms of

exchange and reciprocity (Livelihood) can be integrated stably and sustainably with the State and the Market.

The utopia of Market Society, no less than modern neoliberalism (Hayek 2011), sought to create ‘clear blue sky’ between the vision of state collectivism and market individualism. And frequently, ideologues on the left have reiterated this binary, simply reversing the valance and valorizing the role of the State. In essence, for most of the past century, the ideological battle lines have been drawn by both sides so as to obscure the mutual dependence of State and Market. Focusing on a zero-sum contest about the relative roles of the redistributive state and price-setting markets, however, obscures the extent to which both of these institutional domains relate to the formal economy and the formal rationality of bureaucratic organizations – be these firms or institutions of State (Coase 1937). From the vantage point of economic anthropology, this narrative greatly underplays the diversity of human economic arrangements before capitalist modernity.

Polanyi delineated what he called a ‘double movement’: processes of marketization, formalization, and disembedding leading to the destruction of pre-market, pre-modern, traditional ‘*gemeinschaftlich*’ society, on the one hand; and a countervailing movement for societal protection that culminated in the emergence of the Keynesian welfare state, on the other. Although market exchange is ubiquitous in all human societies, price-setting markets are comparatively rare and only with modernity do they come to dominate the entirety of production and consumption (Polanyi 1944, p. 45). In this process, resource allocation and distribution come to be organized on the basis of individual incentives, as argued earlier in this chapter.

For Polanyi, modernity is largely a function of the extent to which the economy exists ‘as such’ as a separate, demarcated domain. This contrasts with almost the entirety of human history in which individual work and contributions were regulated by socially determined requirements to safeguard standing and/or status and to fulfil ongoing patterns of (symmetrical) reciprocity or (asymmetrical) redistribution (Quilley 2012). In such contexts, as well as being highly open and permeated with social relations of interdependency, rather than an ‘anonymous economic factor’ (Firth 2013, p. 137), the individual is highly personalized in relation to very specific others. As Malinowski (2014, p. 167) elaborated in relation to the celebrated ‘Kula’ cycle of gift exchange in the Trobriand Islands,

the whole of tribal life is permeated by constant give and take; that every ceremony, every legal and customary act is done to the accompaniment of material gift and counter-gift; that wealth, given and taken is one of the main instruments of social organization of the power of the chief, of the bonds of kinship and of relationships in law.

Such relationships, Polanyi argued, created a situation of fundamental security in which material well-being was a guaranteed consequence of membership of a particular place-bound community.

By eliminating the domain of Livelihood as a counterpoint to both State and Market, the habitual, dominant perspective greatly underplays the diversity of potential modern political-economic arrangements. Particularly in the context of emerging technological paradigms (Carson 2010; Kish, Hawreliak, and Quilley 2016; Rifkin 2014), a modernity in which Livelihood leavens the State–Market, is likely to open up significant areas of the state space that are almost imperceptible from where we are now.

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4 Core and periphery in the global economy

How does green politics in the ‘North’ relate to development in the Global South

Although in this volume we deal mainly with issues of the Global North and specifically developed societies in Europe and the Anglosphere, in this chapter, we advance an argument for the importance of locating the study in the broader context of North–South relations. As we have shown, there are important cross-overs. The theoretical model outlined in Chapter 3 owes a great deal to the economic anthropology of Karl Polanyi and the recovery of the informal economy, the domestic sphere as a site for both production and consumption – the domain we have termed ‘livelihood’. The rehabilitation of Livelihood can be traced back to work in the 1970s by E.F. Schumacher (1973), Christopher Alexander (1977), Colin Ward (1990), and Ivan Illich (1973), who in turn drew upon anarchists and community visionaries such as Kropotkin, Tolstoy, and Gandhi.

Ward and Alexander, in particular (in common with Jane Jacobs), were impressed by the vitality of the bottom-up, organic, self-organizing vernacular of the shanty towns and favelas. They argued that rather than knockdown and displace, the State should underwrite, support, and work with the grain of such development. Since the 1970s, a recurring political and intellectual thread has focused on the possibility that less-developed nations might skip the phase of despoiling, heavy industrialism, and chaotic urbanization – leapfrogging what Lewis Mumford (1971) called the ‘Palaeotechnic’ and embracing a clean (green) ‘neotechnic’ version of modernity. Until now, this vision has intersected little with the reality of economic modernization. As Pinker has argued, many societies have become more affluent, more urban, and millions of people have been lifted out of poverty. However, such development’s ecological and social costs have been enormous, little resembling the decentralist visions of Mumford or Gandhi.

This chapter explores the relation between green politics, geopolitics, and development in the Global South. Building on the political economy of State, Market, and Livelihood developed in Chapters 2 and 3. We explore a possible convergence between

- development in the Global South;

- a partial reversal of globalization including aspects of re-nationalization, regionalization, and the re-localization of economic activity;
- a trajectory of partial informalization and re-embedding of Western economies and, by extension, civic welfare systems; and
- a ‘leapfrogging’ pattern of development in the South, involving telematic information and communication technologies alongside circular micro-fabrication as drivers of highly distributed non-grid infrastructures and supply chains (Brand 2010).

In this book, we are certainly reiterating the ecological-economic case that sustainable development – the greening of ‘business as usual’ – has not delivered a viable model for society. It has delivered growth. It has also sustained considerable and ongoing growth in the Global South. However, it has most certainly not delivered ‘sustainability’, as historically defined (Brundtland 1989). If there is an area of convergence, it centres not on abolishing either capitalism or the State or even the global economy. But instead, the slowing down of global capitalism by way of (a) revivifying placeboundedness to organically reduce flows of people, goods, and money, while (b) taking advantage of the increasingly fecund flows of information and (c) re-embedding some areas of economic activity in broader cultures of reciprocation and signification.

Core and periphery: From Marx and Lenin to Frank and Wallerstein

Over the last three centuries, three processes have transformed the world, which has, in the process, been stitched together into an integrated global economy and society. Globalization is completing a process of integration that started, as David Christian (2011) points out, with humanity’s original migrations out of Africa. Production of material goods, the harnessing of energy and the level of social complexity have all reached levels that would have been inconceivable in previous eras. Making this possible, the primary driver has been developing the capitalist mode of production: the unleashing of price-setting markets as the primary mechanism of rationalization and resource allocation, promoting a relentless cycle of investment, innovation, and technical change. Finally, in this process, the rural peasant hinterlands of European economies, then settler societies of North America, Africa, and Australasia, and, in time, the entire world were sucked willingly or more often not into this restless maelstrom of never-ending development that we call modernity (Berman 1988).

Uneven development between core and peripheral regions has been integral to this process from the start (Smith and Harvey 2008) – whether between London, the industrial ‘shock cities’ of northern England and the Midlands, or the deindustrialization of Indian textile manufacturing consequent on the relation with Manchester’s power as ‘Cottonopolis’. For most of the twentieth century, Marxist critics argued that the power imbalances of colonialism and later neo-colonial development were intrinsic to the logic of capitalist development.

Marxian theories of imperialism (Lenin 1999, 2004; Luxemburg 2003; Hobson 2006), the 'development of underdevelopment' (Frank 1967), the logic of the world system (Wallerstein 1979; 1984), and theories of unequal exchange (Emmanuel 1972) – all focused on the perceived necessity of uneven development and the extent to which path-dependent mechanisms and first-mover advantages locked developing countries into more or less overt relationships of subordination to the dominant capitalist economies (Brewer 1991).

The classical Marxist tradition represented by Lenin focused on the progressive role of capitalism in developing the forces of production and creating the foundation for a later socialist transformation. Focusing on the perceived failures of development in the wake of decolonization, for Frank and Wallerstein, the unit of analysis was the capitalist world system as such. Underdevelopment is 'not a state of original backwardness [but] the result of the imposition of a particular pattern of specialization and exploitation in the periphery' (Brewer 1991, 18). Development and underdevelopment are aspects of the same process. Class liberation, from this perspective, accrues a geographical and national dimension. In contrast, theorizing a relation between two entirely different systems, Banaji (1972), Brenner (1982), and Rey (1971) characterize an unequal exchange relation between a European capitalist core and pre-capitalist agrarian societies.¹

It was never the case that the development of capitalism at the core precluded independent catch-up development. In the late nineteenth century, following a more state-regulated path of industrial development, Germany caught up with Britain and America to become a world power on the eve of World War I. Outside of Europe, Japan avoided European domination, becoming a military-industrial power in its own right, subjecting Russia to a humiliating military defeat in 1905, playing a major role in subsequent world wars, and from the 1960s emerging as an economic superpower. Dependency theorists often argued that these cases were exceptions that proved the rule. However, since the 1970s, rapid development in Asia, particularly with the spectacular success of the so-called Tiger economies (Ū. Kim 1998, 199; Davis and Gonzalez 2003; *The Economist* 2009), cast doubt on the dependency thesis; and in the 1990s, the rapid growth in parts of Africa have all but put it to pasture. By the 1990s, the range of experience and successes across the Global South eventually focused attention on the varieties of capitalism (Coates 2005; Boyer 2005) – diversities born of path-dependent developments that did not necessarily conform to any overarching structural model, whether of dependence and stagnation or simple stages of growth as with Rostow's modernization theory (Rostow 1991; Hunter 2012).

Even as late as 1991, Brewer described the mass of peasants in Asian capitalism as reduced to near starvation, and the *Economist* referred to Africa as the hopeless continent. This pessimism was unwarranted and possibly even mendacious. Household consumption in Sub-Saharan Africa was growing at between 3.4 and 3.7 per cent per year, leading to substantial declines in absolute poverty (Young 2012). The composition of the core is changing rapidly with China's

growth and, to a lesser extent, India as global powers. These two economies are recovering a position in the global economy that they last had two centuries ago when China accounted for 30 per cent of global production and India 15 per cent (National Intelligence Council 2010, 7). China's ascendancy (Yueh 2013; Shambaugh and Ashby 2016; Martin-Jacques 2012; Gerth 2011) is such that there are now serious questions about whether the liberal-modern version of capitalism is the most politically sustainable and economically dynamic model (Peerenboom 2008).

By the late 1990s, it was clear that there were varieties of capitalism (Boyer 2005), an equal variety of path-dependent trajectories for modernization and that globalization, for all its social and ecological costs, was associated with apparent processes of development and economic growth with millions of families being pulled out of absolute poverty. In light of such changes, the focus began to shift from supposedly intractable inequalities between countries to more complex relations within countries and between class fractions and elite/subaltern groups within countries. Rather than the 'third world' analysts focused on the Global South and the dynamics of uneven development within cities, a '4th world' of marginal labour is emerging within all the great global metropolises and tied to the waxing and waning of an increasingly open global economy (Sassen 2012).

In summary, development and modernization remain a real issue. The problem with global capitalism is not that it is not and cannot deliver development. The ongoing transformation of developing countries is impressive and very significant – a case made cogently by Steven Pinker (2018) in his defence of the project of Enlightenment. The problem with Pinker's case is shared implicitly by analysts of all shades of opinion from neo-liberal economists such as Milton Friedman (Dumenil and Levy 2004) through to corporatist social democrats. This continuity centres on the notion that past and present growth is indicative of an automatic capacity to deliver growth into the future. However, as we elaborated in Chapters 2 and 3, although gloomy prognoses of cliff-edge collapse have often fallen foul of the more prosaic reality in which the wheels have kept turning (as with the famous Ehrlich–Simon bet) – the reality is that continuing current growth rates are impossible. Analyses of the original limits to growth model by Turner and colleagues have repeatedly found that the world economy is very much on the 'business as usual' trajectory likely to engender a plateau by the 2040s (Turner 2008).

Highly networked regions, distributism, and re-localization as an alternative to globalization

The three-dimensional state-space model of Market, State, and Livelihood outlined in Chapter 3 relates a great deal to the problem of globalization and development in the South. Price-setting markets are corrosive and 'liquid' in that they tend to spill over into non-economic domains, rationalizing the world in their image. In the end, as Polanyi (echoing Marx) pointed out, this makes

the market mechanism unstable and self-destructive since it undermines the extra-economic natural and social foundations, which it needs to sustain and reproduce itself. He had this in mind when he argued that all varieties of Market Society are of necessity, contained or 'instituted' (Polanyi 1957) ultimately by the State. Thus, capitalist modernization has always involved a ratcheting 'arms race' between the 'liquid' and the 'container', that is, an iterative expansion in the scale and scope of market transactions coupled with a stepwise increase in the scale of state regulation. Over two hundred years, such innovations included regional and then national currencies, contract law, patent law, weights and measures acts, provision for limited companies, the regulation of stock markets, currency markets, public infrastructure and utilities, factory acts, pollution control, and eventually the full apparatus of national welfare states.

Defined economically as the *functional integration and geographical dispersal of economic activity*, globalization combines the 'liquid' social mobility of a maximally free-labour market with the ultra-fungibility associated with free movement of capital. This latest extension of price-setting markets undermines nationally regulated and instituted economic territories, creating much wider swathes of abstract economic 'space'. By the iterative logic of stepwise, coupled development described above, the era of global markets has seen a concomitant albeit faltering elaboration of new forms of global governance, international law, and soft regulation; and in the case of the European Union, a permanently crisis-stricken attempt to create a supra-national state. Thus far, this global movement for societal (and ecological) protection has been a profound failure. Successive climate change agreements have failed to deliver any significant reduction in carbon emissions. The list of failures concerning pollution control, deforestation, aquifers, the extinction crisis, and over-harvesting are egregious and show no sign of slowing.

In the face of such failures, the liberal and globalist pattern of response to global ecological problems – the taken-for-granted orientation of all the major powers of the G8, institutions such as the United Nations, the International Monetary Fund (IMF), and the European Union – is unlikely to achieve significant geopolitical order in the face of global challenges, nor effect a transition to a global paradigm of green growth, let alone the kind of degrowth that prioritizes metabolic scale. The truth is that social democratic, liberal, and green parties acquiescing to this trajectory in the name of liberalism and progressive values are signing up to an agenda of continuing neo-liberalism. For this is what globalization involves at heart: less-bridled corporate capitalism based on the global mobility of capital and labour; an unrestrained ontology of materialism, individualism and disenchantment; and a rampant Faustian developmentalism in which 'all that is solid melts to air' (Berman 1988).

Any paradigmatic response to these wicked dilemmas must centre on the manifest need of real and continuing development in the Global South and ongoing technological change and societal progress in the North. To the extent that such change involves increasing social complexity, it must entail escalating costs in embodied energy and transformity values (see Chapter 2). The central

question is whether developmental paths centre on redeploying extant forms of social complexity that involve heavy metabolic expenditures while achieving little or net-negative social welfare.²

From this point of view, a viable alternative to liberal globalism would likely be predicated on an extension of the systems-ecological principle of diversity. With globalization, the extension of the cold calculus of financial exchange and fungibility drives to make every product, service, and person in the world commensurable. Disembedding on a global scale involves precisely the same dynamic as it did in national economies from the English enclosure movement onwards. It extends formal economic rationality into all social and cultural life areas – with the repeated result that material things or activities that should not be commodified and compared are made available for exchange in a price-setting market. In the global Market, relationships, people, forest ecosystems, endangered species, water, and even our life-giving atmosphere are all routinely subject to supply and demand laws. From such an ecological-systems perspective, globalization is akin to emptying multiple separate aquarium ecosystems into a single giant pond. The inevitable result is a shakeout of diversity in an integrating system that supports a much-reduced number of local functions and specialisms.

Opportunities for a post-liberal, post-globalizing response to this problem of reconciling geopolitics, ecological integrity and global developmental justice in the South and stability in the North centre on six imperatives:

- i A partial reversal of globalization and the acceptance of lower growth consequent on a reduction in international trade, more self-sufficient, less-interdependent regional and national economies*

The wave of globalization that began in the 1980s with Thatcher and Reagan was not simply a matter of political whim. The long boom in production and consumption associated with post-war Fordism and the Keynesian welfare state was running into crisis in the 1970s – a crisis which coincided with the onset of a new Kronratiev 'long wave' of techno-economic development centring on information technology and computers (Tickell and Peck 1992; Köhler 2012). Declining rates of growth combined with the rising cost of the social compact led to a crisis in profitability for firms and recurring fiscal crises for the State, with resulting public spending cuts causing a legitimization crisis (Habermas 1975). At the same time, rigidities in the highly regulated labour market and the strength of organized labour impeded innovation and technical change, creating, in effect, a pent-up potential for what Schumpeter famously referred to as a gale of 'creative destruction'. This maelstrom arrived in due course in Thatcherism, Reagonomics, and globalization, and was given the imprimatur of intellectual economic orthodoxy by the Hayekian neo-liberalism championed by Milton Friedman. Suppose globalization allowed increasingly mobile capital to sidestep sclerotic national regulatory regimes. In that case, there is a self-evident likelihood that protectionism and more intrusive national regulation

will see the re-emergence of precisely the same problems of declining growth and productivity rates. It is also true that the global competitive regime will be quick to punish regulatory first-movers – with devaluing currencies, capital flight and balance of payments crises.

Since the 1980s, this has proved an insurmountable problem for social democratic parties, which have routinely embraced essentially neo-liberal supply-side economics at the local level (Quilley 2000) and nationally (Humphrys and Cahill 2017). However, for a putative low/no growth transition, this prospective fiscal-welfare crisis is less of a problem, precisely because it is oriented, quite explicitly, not only to a contraction in global trade and associated metabolic flows but with some reduction in the scale of both State and Market within national economies and a corollary re-balancing expansion in lower-cost (fiscal transfers, market transactions), lower-transformity (energy transformations) activities associated with the informal economy and the domain of Livelihood.

ii Re-localization and the indexing of regulation and tax to the scale and scope of economic activity

Within nation-states, a pronounced pattern of re-localization would be driven by fiscal and regulatory incentive structures that reward:

- a place-based patterns of production and consumption within communities and
- b durable, face-to-face, and ongoing, embedded relationships between producers and consumers (individuals and communities).

Scaling regulation and tax to the scale and scope of economic activity would substantially reduce the competitive advantages of large multi-region and multinational firms in the formal sector, with marginal costs declining to zero for household, community-level, and farm-gate level production.

iii Livelihood-based health and welfare solutions at lower financial costs and lower unit-complexity and associated transformity costs.

Within national economies, the reduction in the size of the welfare state and scope of state interventions is probably inevitable. The strategic and political question is whether the slack is taken up solely by the Market or by a creative expansion in the domain of Livelihood, that is, relations of mutuality and organized reciprocity within families, place-bound communities, and civic/occupational associations. Suppose there is contestation, any erosion in the social compact. In that case, the default result will be that the mobile individuals created by modernization will be deprived, to a greater or a lesser extent, of those protections associated with the (collectivist) State as the primary 'survival unit' without any compensating safety net, other than an increasingly crisis-prone labour market. This presents the fastest route to an unstable and coercive social order organized around a growing 'precariat' class (Standing 2011).

Without perpetual growth and corresponding state expenditures and a return to the conditions associated with post-war Fordism (Blyth 2002), a realistic alternative to this scenario is the re-emergence of communitarian structures of mutual identification and reciprocity rooted in relational attachments, civic and occupational associations, and place-bound community. Such an expansion of Livelihood would entail a partial reversal of processes synonymous with capitalist modernization since the sixteenth century, including a reduction in the scope of market transactions; the decommodification of many goods and services (especially care); the de-rationalization of many provisioning, care, and subsistence activities as these are uncoupled from state-regulated regulations, health and safety regimes, codes of practice, and administrative norms. Such a trajectory amounts to the partial informalization and re-embedding of Western economies and, by extension, civic welfare systems.

iv Mobilization of technical opportunities arising from the arising local production through micro-manufacturing

In the rise of the collaborative production commons and innovations in micro-manufacturing, a new form of the means of production is gaining increased attention elaborated on in Chapter 13 (Rifkin 2014a; Okazaki, Mishima, and Ashida 2004; Redlich et al. 2016). This new system of global micro-producers responds to the efficiency and mass production of capitalist production tendencies. Rather than overproduction to meet the price efficiencies of economies of scale, micro-producers produce based on demand through radically distributed networks organized through Internet empowered participatory planning and democratized production. These new production schemes are founded on the commons' philosophy, both in terms of shared physical space and in open knowledge sharing of 3D schematics, designs, and how-to's. Rather than facilitating consumption, these new production logics enhance presumption in communities that spills out into educational settings, community relationships, and organization of the formal and informal markets.³

v Radically distributed innovation, production, and raw material sourcing and (re) cycling and the lowering of unit transformity/complexity costs

How is it possible to reconcile steady or increasing social and technical complexity with decreased metabolic throughput of information, energy, and materials? For most of human history, technological sophistication, social complexity and metabolic throughput rose (and sometimes fell) in tandem. Other things being equal, any dramatic reduction in metabolic scale and social complexity will likely be associated with the loss of whole suites of technologies and systems (Quilley 2013; Greer 2009; Heinberg 2010; Odum and Odum 2006). As Ophuls (2011) points out, the notion that a radical vision of degrowth might be compatible with the maintenance of modern dentistry or technologies such as the Internet flies in the face of thermodynamic reality. As Richard

Heinberg is fond of pointing out, it is difficult to see how one could make modern wind turbines using power from only wind turbines.

As we elaborated in Chapter 2, all forms of complexity are associated with what Odum calls a ‘transformity value’ that is, the energy embodied not only in the artefact, but the entire production system and the series of qualitative energy transformations required to produce the artefact. However, other things are not equal. Odum’s insight applies to the system as a whole. A reduction in overall metabolic scale and throughput does not preclude changing the allocation of low-entropy complexity to particular functions. The contention here is that technical changes relating to digital information processing and microfabrication are radically reducing the minimum scale of production – allowing complex products to be produced with much-reduced complexity overhead (Carson 2010, 2013).

At present, we stand on the edge of an incipient technical revolution. The moment that 3D additive manufacturing can ‘print’ electronic circuitry and even microchips, the possibilities for what Carson calls low overhead production will increase exponentially – allowing massive and even accelerating technical complexity with a reduction in overall social complexity, and in the eMerger footprint of the system as a whole. With this, open-sourced, hyper-networked, and distributed micro-innovation and production systems are now creating an opportunity to reduce the unit costs of social complexity by orders of magnitude in three ways. Firstly, *open design for use* – that is, for longevity, repair, re-use, and recycling – may be able to cut out swathes through the throwaway economy by radically undermining the incentive and requirement for profit-oriented business models. Secondly, by significantly reducing the geographical scale and dispersal of those ‘just in time’ production systems that have been synonymous with globalization. Thirdly, by partially detaching production and consumption from intensive throwaway consumer retailing models, reducing the cycling of products (through longevity and repair) and curtailing the extent of the geographical networks, all sorts of significant metabolic expenditures associated with *packaging and retailing* are likely to fall.

vi Post-grid development in the Global South

Finally, based on the three-legged political economy outlined in Chapter 3, it is possible to delineate an orthogonal development path in which the Global South and the West converge at the political-economic nexus of Market, State, and Livelihood. In the case of many countries in the Global South, this may mean consolidating and building on what is already present in both rural peasant economies and the localized versions of informal economies. As far back as the 1970s, commentators argued against modernist slum clearance programmes, precisely because these were designed to effect a wholesale transition away from communitarian structures of Livelihood and self-organized community provisioning towards both the State and regulated jobs in the formal market economy (Ward 1990; Turner 1977; Turner and Fichter 1972; Bower 2016;

Habraken 1999; Alexander 1977; Jiang 2019). In both cases the rationalization of social life involved a push towards individualization, mobility, dependence on the State and the Market and the disorganization of organic community. The alternative was, they argued in different ways, to recognize and value the social capital and resilience generated by communitarian structures of traditional society.

With the Internet and suite of microfabrication technologies come opportunities for countries to embrace a converging ‘leapfrogging’ pattern of development that bypasses the transport, logistical, informational, and technical grids that have dominated the Western pattern of development for 200 years (Bunt-Kokhuis 2001; H. Kim and Jung 2018; Almshqab and Ustun 2019; van der Zwaan et al. 2018; Kedia 2016).

Conclusion

Over the last century, the process of capitalist modernization has extended modernity, in one form or another, to nearly every society on Earth. One ironic consequence of this capitalist individuation is that it arguably creates a moral impetus for a political economy of global levelling. From this perspective, if an ecological-economy requires a plateauing of growth and is conceived as a zero-sum, countries in the Global South have some moral and political claim to a disproportionate share of the ‘entropic space’ – that is, the throughput of energy and materials and pollution sinks compatible with biosphere integrity. More developed countries should then take a more significant share of the burden of restraint. Many aspects of the SDGs, such as poverty, hunger, and access to clean water and sanitation, speak more specifically to the Global South. The recommendations throughout this book are more directly related to restraint in the Global North and possibilities for innovative futures in the Global South.

Notes

- 1 There have also been significant attempts to understand unequal exchange in ecological-energetic terms and specifically, drawing upon Odum, in entropic terms as the uneven spatial distribution of entropic disorder and high eMergy transformity values across specific production, distribution and consumption networks (Foster and Holleman 2014).
- 2 Prominent examples include elaborate institutional and societal resources diverted to deal with drugs and addiction, depression, and eating disorders; conspicuous consumption of ephemeral products designed for failure and fast-fashion-led replacement; packaging and transport associated with global food systems oriented to convenience and individual mobility; ubiquitous individual spatial mobility; expensive institutional forms of health care and schooling (Zywert and Quilley 2020, 2019).
- 3 Rifkin (2014b) argues that the entire education system is ripe for root and branch transformation. Internet connectivity is creating opportunities for self-organizing, collaborative education communities – home-schooling, start-up colleges, YouTube

communities, online degree programmes – which can potentially disrupt and undermine the business models and modus operandi of traditional schools and universities along with state-regulated curricula and teaching methods.

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Part II

Basic systems sustaining life



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5 Human culture and life on land and sea

Attachment and scale in ecology and society

Sustainable Development Goal (SDG) 11: Make cities and human settlements inclusive, safe, resilient, and sustainable

SDG 14: Conserve and sustainably use the oceans, seas, and marine resources for sustainable development

SDG 15: Protect, restore, and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss

Ecology and society: The problem of the ‘complete act’

One problem with the SDGs’ existing construction is that they separate and silo ecological and socio-economic systems that are interdependent and inextricably connected. Thus, many of the targets associated with SDG 11 focus on urban planning and development, and superficial recoupling of human activity with natural spaces, while SDGs 14 and 15 target traditional restoration and conservation practices associated with land use, water governance, and forest management, and problems such as desertification, ocean acidification, and overfishing. There are bland commitments to safeguard natural heritage (#11.4) and integrate ecological values into economic and social planning regimes (#15.19). However, there is certainly no recognition or acknowledgement of the cultural reorientation required to achieve these goals.

Nevertheless, as we have argued in the opening chapters, an ecological economics predicated on metabolic scale would necessitate a radical restructuring of the relation between disembedded global markets, nation-states, and local, community, and familial contexts of less formal patterns production and consumption. We expanded on at length in Chapters 3 and 4. As noted in Chapter 3, the ‘economy’ is a modern word for a historically recent and novel societal configuration. As Polanyi (1968) pointed out, the idea of production, exchange, and provisioning, separate from family and neighbouring relations, would have been incomprehensible for premodern groups of people. The ‘disembedding’ of the economy was the primary process that brought modernity into being. Andrew

Willard Jones (2017) makes the same point concerning modern categories of ‘state’ and ‘religion’ that, he argues, did not exist and cannot be applied to medieval society. The now taken-for-granted concept of the separation of church and state would have been, quite literally, incomprehensible to thirteenth-century denizens of Louis IX’s France. In making this argument, Jones refers to the inextricable permeation and entwining of social, psychological, economic, economic, ritual, familial, and political categories, practices, habits of mind, legal frameworks, and cultural narratives as ‘a complete act’.

This concept of the ‘complete act’ as an integral configuration emerging from the intersection of all the framing parameters of a particular socio-historical situation is a fine-grained iteration of Norbert Elias’s (1978) more general proposition relating to the ‘triad of controls’, that is, that ecological, social-economic, and psychological controls develop in tandem and cannot be uncoupled. Ecological footprint, energy flows, the scale and intensity of relations of social and economic interdependence, and the scope and penetration of both Market and State are intimately connected with the character of the individual and ‘average personality’ (see Chapters 2 and 3). During the ‘great transformation’ – the birth of the modern world described by Polanyi (1944) – Western society experienced an initially gradual, and then more rapid, dissolution of one ‘complete act’, and the emergence and consolidation of another. In Chapter 3, we described the political economy of this new framing of action and thought in terms of the weakening of the informal social relations of *Livelihood*; its practical elimination as the primary survival unit; and the concomitant expansion, firstly of the (price-setting, disembedded) *Market*, and subsequently (as part of the ‘countervailing movement for societal protection’) of the administrative *State*. The ‘complete act’ associated with this new societal configuration, which has spread to all areas of the world, centres on: transactional relations; ubiquitous fungibility and the (inappropriate) relation of commensurability between previously separate domains of life; an overt and self-conscious individualism; a more subtle, idolatry, or enchantment focused on personal success, individual consumption; and highly individualized metrics for social esteem and prestige.

The ubiquity of this culture, and its intrinsic and internal relation to all other dimensions of the societal order, make it deeply resilient and intractable. The prefigurative ‘transition problem’ facing all would-be revolutionaries seeking to facilitate paradigmatic change is that even the change-makers themselves cannot wholly conceptualize or envisage the new society’s contours that they seek to create. By definition, living within one ‘complete act’, by definition, precludes access to another. To the extent that their actions are intentional, the pattern of unintended consequences in complex systems ensures that future outcomes are surprising, and to a great extent, unknowable in advance. A medieval peasant farmer, craftsman, or trader enmeshed in the embedded patterns of exchange, mutual identification, and reciprocation (Casson, Casson, Lee, and Phillips 2020; Jones 2017) would have found even the prospect of social and spatial mobility of twentieth-century France not just disorienting or cognitively dissonant, but unintelligible and unimaginable. More than this, the

Cartesian sense of self – separate, impermeable, detached, autonomous, integral (*Homo clausus*; *Homo economicus*) – that is naturalized, universalized, and taken for granted by diverse modern disciplines, domains, and commentators is itself an emergent function of modern complexity (Bauman 2007; Elias 1991; Giddens 1991; Taylor 1992). A more permeating, open, participative, and less detached consciousness (Barfield 1988; Vernon 2019) would find it difficult to apprehend or engage with the modern self's psychological autonomy and closure.

However, it is precisely a change comparable in scope and intensity to this shift – between the integralism of late medieval Catholic societies in Europe and early-modern nation-states (Berman 1981; Crean and Fimister 2020; Jones 2017) – that is implied by long-term and resilient projects of sustainability. SDGs oriented towards and designed to be prefigurative of such a transformation would have simultaneously to open up a path to cultural, religious, economic, demographic, technical, aesthetic, social, and political change, while looking forward to a worldview, average personality, and psychological 'habitus' (Bourdieu 2020; Elias 2012) that, as yet, does not exist. In what follows, we explore the implications of this perspective for the idea of a more eco-centric culture and the emergence of a pattern of greater ecological restraint on the part of both individuals and groups.

Individual, community, and social-ecological attachment

Some theorize that given high levels of mobility and transactional individualism as drivers of consumerism (Arndt, Solomon, Kasser, and Sheldon 2004; Fromm 2013; Lasch 1991; Schor 1999), it is likely that strong psychological and communitarian attachments to their community (Bowlby 2008; Gill 2014) are a prerequisite for a shift towards a more embedded economy. Such an economy would be less oriented towards growth and a break in mass production/consumption cycles. From this perspective, strong community orientations are likely to be a prerequisite for improved environmental well-being as people are less driven to consume, more involved in sharing and reciprocation, and more likely to internalize a sense of local responsibility and accountability, not just to family and community, but to a local landscape and ecological system.

Wicked dilemma: Individual versus attachment

Hyper-liberal, social, and spatial mobility (Bauman 2000, 2003, 2005) provides the axiomatic foundation and driver of consumer society. Within the expanding domains of State and Market (Chapter 3), individualism and mobility foster transactional relations that approximate ever more closely the assumptions of rational choice theory and *H. economicus*. With the overarching processes of secularization and detraditionalization, and the emergence of an immanent, if unremarked, metaphysical materialism, this inexorable culture of liquidity has become the self-perpetuating driver of consumerism (Arndt et al. 2004). Pointing to the erosion of shared, communitarian, or religious rituals of

community life, and following Max Weber (2020), generations of sociologists have focused on modernization as a trajectory of disenchantment. And there seems little doubt that the individualization of existential meaning-making, the proliferation of choice and the ‘optionality’ of belief systems (Taylor 1992) place a great psychological burden of ‘ontological insecurity’ on individuals (Becker 1973; Giddens 1991; Laing 1965).

There is a trade-off between attached and immersive participation and the kind of individualism that has become synonymous with modernity. The problem turns on what Weberian sociology terms disenchantment. On the one hand, by disembedding individuals from the attachments of place, nature, social station and family, and modernity releases the full potential of the society of individuals.

Severed of any communitarian or connection to something larger than the self, the disembedded individual becomes self-referential – a condition that eventually gives rise to the kind of generalized narcissism described by Lasch (Hartt 1980; Lasch 1991). Thus, the kind of political economy that might generate a ‘complete act’ that is conducive to both individual and collective restraint, while maintaining and, in some ways, deepening the interiorized, individual consciousness, and sense of self would likely be associated with the following:

- A partial social re-attachment process: more communitarian structure of formal, visible, and ritually affirmed interdependency and reciprocity with familial, neighbourhood, community, and national networks.
- A partial process of ecological re-attachment: more direct, visceral, and immediate involvement in processes of direct or indirect management of local ecosystems and culturally meaningful landscapes, and the re-emergence of culture-laded ‘taskscape’ (Ingold 1993) linked to local, circular, and more sufficient processes of local, regional and national provisioning.
- A process of re-enchantment involving the re-emergence of public ritual and, in some cases, shared religious belief as a ground for the stabilization of the interiorized self and its deep, internal connection to a publicly shared relation to the transcendent. This does not necessitate participation in religion but rather placement within a larger cosmological story (Christian 2018; Kauffman 2008).

Given the diversity of modern societies, it is unlikely to have any traction at the nation-state level, let alone across whole continents, nor would such homogeneity serve the long-term well-being of cultures and communities, given that complexity fosters resilience. However, in a political ecology of subsidiarity, characterized by a more complex structure of nested subsystems, it is possible to think of a mosaic of communities operating in tandem, each embodying a different ‘solution’ and reflecting a different tradition. However, all would share a commitment that to flourish, in the long run, life requires a communitarian context.

Attachment and social-ecological systems

The exact process of disembedding that drives the progressive individuation of personality and makes possible the self as distinct and autonomous also undermines attachments to the natural world. Edward Wilson's hypothesis of 'biophilia', an innate, positive orientation towards the natural world, has generated a burgeoning literature concerning 'nature deficit syndrome' and human alienation from nature in modern urban contexts (McVay et al. 1995; Williams 2018; Wilson 1986). In the long view, this is understood as a corollary of the process of individualization (see above).

Here then is the wicked dilemma of liberal societies in relation to the natural world. The material and energetic throughput that is a prerequisite for high levels of social complexity carry an unavoidable ecological footprint. Social-psychological individuation undermines affective attachments to family, place-bound community, and people. However, this same process of 'social detachment' also undermines effective engagement with and participation in the natural world, creating a 'nature deficit' in the structure of modern life. As Barfield, Ong, Weber, Gellner, and Polanyi show, this is an inevitable concomitant of modernization – of writing, social and spatial mobility, urbanization, abstraction, and rationalization, and of the displacement of defined, territorial, place, and community-based 'survival units' by reliable but opaque and abstract structures of State and Market. And yet, it is 'wicked' precisely because the dignity and sovereignty of the individual central to the liberal polity is also one of the greatest achievements of human society.

Compared with subsistence or small-scale commodity farming, let alone the 'immediate return' provisioning systems of hunter-gathering, in the modern world, consumption and production are separated from daily, direct engagement with plants, animals, and local ecosystems. For most of human history, the household-oikos persisted in a state of unfolding and intertwined relation with nested social-ecological systems of agriculture, managed woodlands, wetlands, lakes, and streams, less-intensively managed upland pastures and areas of relative wilderness, that is, the ecological-oikos. Von Thunen's agricultural land-use model famously captured such relations (Figure 5.1).

Whether in Europe, Asia, or Africa, premodern settlement patterns centred on small towns and villages with a close and integral relation to a very specific agricultural hinterland. As Ingold (2000) shows in some detail, the notion of 'landscape' to some extent misconstrues this pattern of social-ecological relation. The idea of landscape is fundamentally non-participative and relates to the visual aesthetic of an independent viewer observing from without. It is the perspective of the archetypal 'moderns' – voyeur, the traveller, the artist, the planner; an abstraction produced for a variety of purposes, all of which are detached from the embedded cycles of production, consumption, and reproduction experienced by the diminishing number of people who still work the land (Lefebvre 1992). From the perspective of the latter, a better term is 'taskscape' – coined by Ingold to capture the iterative cycle of tasks and

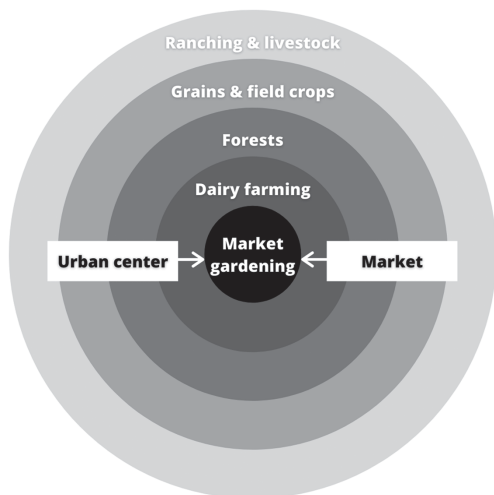


Figure 5.1 Von Thunen's agricultural land-use model.

activities that simultaneously structure both the daily, weekly, and annual life of individuals-in-communities and the habitat and ecosystemic character of swathes of countryside. The taskscape pertains to the social-ecological culture of attachment – both in terms of an individual's relation to networks of other people, and his or her visceral and aesthetic attachment to overlaid ecosystems (through metabolic exchanges), land-use patterns (through the cycle of activities and 'tasks'), and places (loci as the focus for intergenerational meaning, stories and processes of mutual identification).

Mobilizing the effects: Restorative culture and political economy

The SDGs related to life on land and below the water use functionalist targets to promote natural ecosystems' well-being. The goals state that for the land we need to 'protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss'. And for water, we need to 'conserve and sustainably use the oceans, seas and marine resources for sustainable development'. However, this objective and numerical approach does nothing to integrate humanity into ecological spaces and to combat the formation of meaning through consumption. It tends towards technocratic and top-down solutions. Although the identity of the 'we' is rarely specified in any detail in official documents, the assumption is that governments and supra-national agencies, with the help of experts, managers, and scientists, will design laws and management protocols and orchestrate local activity – an approach

which often in the end, relies on educating under-informed members of the public. It is the same approach that has dominated UN and intergovernmental approaches to decarbonization. And it does not work.

If the SDGs are to have traction, they must work with the grain of local and regional culture and with the interests of individuals and communities. Although clear enough in principle, it is difficult to specify in any detail how ecological functions at every scale, from a garden pond through to the impact of the oceans on carbon sequestration, might be integrated with societal and cultural function. In ecology, *scale* refers to both the granular and fractal, repeating structure of a system, on the one hand, and spatial/territorial extent, on the other. In what follows, we outline, if only schematically, how this more complex, nested ecological structure might be mirrored in encultured, place-sensitive, and context-bound production systems: from household, farmstead, workshop, and community factory through to globally networked, just-in-time, capitalist production chains. Applying the same logic of subsidiarity to both restoration ecology and the economy, the prospect for much ecological enhancement hinges on the close relation with re-emerging pastoral landscapes, niches, and symbiotic opportunities associated with the fractal livelihood economy (not least the proliferating ratio of 'surface areas' and edge-habitats associated with messy, small-scale production, and consumption).

Oikos: Subsidiarity and distributism in ecology and political economy

Surface area/volume ratio is a basic principle of the biological sciences because it plays such a central role in regulating the flow and exchanges of energy, materials, and information in all living structures, from lung capillaries and blood vessels, the size of cells, the structure of the brain, right through to the pattern of leaf growth on a tree or the distribution of organisms across a micro-landscape such as a shipwreck. The same principle is at work in human interactions. Premodern settlements developed according to harmonious patterns summarized by Christopher Alexander's 'pattern language' (1977) driven by much the same logic of maximizing surfaces for exchange. Motor vehicles and cheap energy destroyed the self-organizing potential of late twentieth-century cities, subsidizing costly, inefficient, and ugly exchange patterns across sprawling urban developments, which systematically undermine ecological patterns of structural regulation.¹

In the economy, as in ecology, complexity is a function of energy throughput (Chapter 2). Throughout human development, successive energy revolutions (fire, agriculture, fossil fuels, among others) have facilitated a step change in social complexity by elaborating greater degrees of specialism and a steadily increasing social division of labour. A fundamental tension in economics relates to the tension between efficiency and redundancy. The more specialized a system, the more efficient it becomes, the greater the energy return on energy invested. But at the same time, specialized systems are less able to adapt to a changing environment. Evolutionary biology is replete with evolutionary

success stories and extinction, which turn on similar trade-offs between specialization and adaptability. In both cases, the critical ‘decision point’ comes when lower-order subsystems are committed to each other for higher order coordination to survive. A liver cell is dependent for survival not just on the liver but also on the whole organism’s homeostatic integrity.

From this point of view, human development in the last ten millennia can be characterized, in some ways, in terms of the subordination and dependence of lower-order units – individuals, families, communities – to higher order provisioning systems and survival units. This process reached an apogee with the nation-state system, but the European Union and the development of modes of international law and global governance mechanisms underline the potential for further development. The difficulty is that, as with any other form of complexity, these innovations in human cooperation and collective learning come with a price tag – a ‘transformity overhead’ (see Chapter 2) in terms of growth and the fiscal transfers needed to sustain the requisite technologies and forms of social organization.

Grain and scale in the economy

Concerning the structure and function of the anthroposphere – global society and its requisite metabolism – reducing the relative scope and penetration of both Market and the State and allowing a considerable expansion of the domain of Livelihood (Chapter 3) implies a political economy of distributism and subsidiarity (Boyle 2019; Hickey 2017; Medaille 2014), which systematically favours the lowest (technically and socially) possible scale of production.

Such a transformation would allow an increase in the granularity of provisioning activities with a proliferation of small, relatively autonomous producers serving more embedded and place-bound consumers. This structure would also increase the fractal replication of networks at intermediate scales between micro, meso, and macro economies, straddling the informal and formal economies, and the local, regional, and global supply chains.

That the simultaneous disembedding and nationalization of the economy was only one option, albeit the path of least resistance, has become evident since the 1980s as globalization and the neo-liberal version of laissez faire has hollowed out national economies. However, it also suggests that in the eighteenth and nineteenth centuries there were alternative and unexplored trajectories for managing price-setting markets (Quilley 2012). Distributism is one such alternative vision. Developed by Hilaire Belloc and G.K. Chesterton, distributism was a response to both the unpalatable authoritarianism of state socialism (and later fascism) and catastrophic poverty and social disorder induced by unregulated Victorian capitalism. They argued order is only achieved through much more widespread and equitable distribution of property and creating a ‘society of owners’. For distributists, the principal problem of modern economics is the concentration of property, whether by monopolistic ownership under capitalism or a monopolistic State under any variant of socialism or communism.

Although the theory has never been implemented as the basis for a national economic strategy, this is perhaps because the social compact favoured by most was predicated on economic growth. However, once the assumption of perpetual growth comes into question, some version of distributism inevitably comes back into the frame. Therefore, it is entirely unsurprising that the idea was reprised in the context of limits to growth in the 1970s by E.F. Schumacher, whose *Small Is Beautiful* (1973), became a generation-defining manifesto for the green movement. The political order implied by distributism, substantially qualifying the monopolies inherent in large nation-states was also evoked by Leopold Kohr's *The Breakdown of Nations* (2017) and more recently by bioregionalists such as Kirk Patrick Sale (2017).

For a political economy for the SDGs, the most significant feature of distributism is the doctrine of subsidiarity that is present in *Rerum Novarum* but more fully developed in *Quadragesimo Anno*, which declares that the arrogation of functions or activities from households and small businesses by larger, higher order companies or state bodies was 'a grave evil'. Wherever possible, production, trade, services, and retail activities should be achieved at the smallest possible scale. The primary function of the distributist state, according to Belloc and Chesterton, is to remove all legal, regulatory, and monopolistic impediments to this wide distribution of ownership, of the means of production, of knowledge and productive activity. The result of such an intervention would be economic pluralism and maximum diversity of enterprises at a variety of scales; small shops competing on an equal footing with chains; small farmers with industrial farms; and artisans and household-scale workshops with large enterprises and corporations. Resonating with the medievalist inclinations of William Morris, John Ruskin, and the Arts and Crafts Movement (Blakesley 2009; Morris 1988; Ruskin 1851), Chesterton also sought the re-establishment of chartered guilds. Where capital-intensive industries precluded individual ownership, distributists favoured shared holding cooperatives. Elsewhere, distributist policies focused on credit cooperatives and banks, Friendly Societies, processing and marketing cooperatives in agriculture (Chesterton 2002).

The public-sector domain overlapped with the 'second world' state-socialist model and provided the implicit model of best practice for developing countries in the Global South. Moving towards the middle decades of the twenty-first century and the post-COVID economy, this model is under pressure from three directions:

- i A growing *financial crisis* following the 2008 crash and exacerbated by global COVID-19 lockdowns, ballooning public-sector deficits, and the prospect of stagnation and low growth rates, is coinciding with
- ii *ecological limits to growth*: This is evident in rising energy costs and the political unacceptability of carbon-based energy, but also in less visible costs arising from the escalating externalities of growth (deforestation, resource depletion, the depletion and pollution of aquifers, pollution, and other signs of environmental stressors).

- iii *Livelihood micro-production*: But quite separately, technical innovation associated with subaltern and subversive applications of the Fourth Industrial Revolution (Carson 2010; Rifkin 2014) – digital informational economy, the Internet of Things, and proliferating technical possibilities relating to micro-fabrication, including 3D printing, to cheap access to computer control design and production, robotics and also low-overhead synthetic biology – such developments are bringing onto the horizon the vista of sophisticated, domestic scale, and informal manufacturing on a scale not seen since the eighteenth century. We expand on this theme in Chapter 15.

Leveraging a significant degree of localized self-organization and subsistence at the community level, this involution and re-embedding of manufacturing activity is likely to take place alongside and within national boundaries and trade within the formal market economy. This vision implies a more variegated network pattern and production chains straddling all household scales through to global corporate production (see Figure 5.2).

In ecology, scale is defined in terms of both grain and extent. The distributist political economy intimated here trades complexity of extent in favour of complexity in the grain. Reduced transactions, interactions, and interdependencies between individuals and groups operating in the global economic space facilitate greater networked granularity vis-a-vis myriad circular and more self-sufficient production and consumption cycles at the local and regional scale. In a general sense, the ordered complexity of

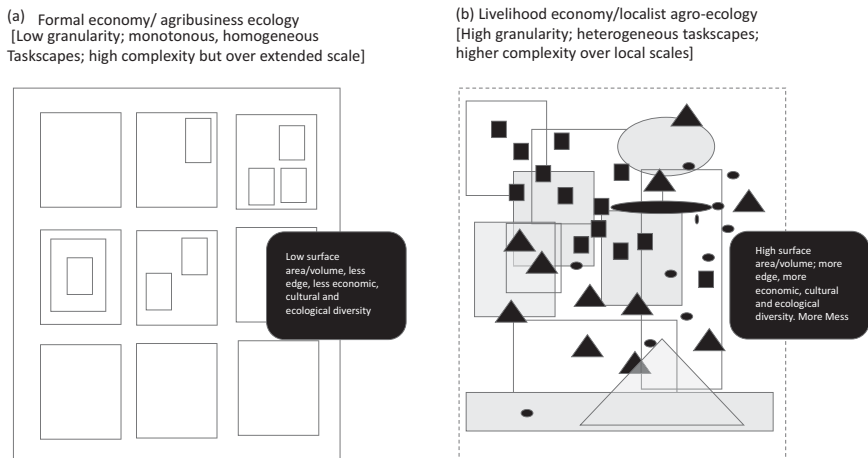


Figure 5.2 Grain and extent in the oikos: (a) conventional globalizing economy versus (b) (distributist) livelihood economy.

Figure 5.2a is more fragile and harder to sustain than the chaotic, multi-level, self-organizing complexity of Figure 5.2b is more resilient, with a larger number of less critical thresholds.

Using the language of Holling and Gunderson's (2001) 'adaptive cycle' (see Chapter 2), the late 'conservation' stage of capitalism fosters robust global connectivity, mediated by large, well-defined corporations and open-national economies operating increasingly supply-side strategies to attract inward investment. In this integration process, various local banks, currencies, banking systems, food and agribusiness regimes and manufacturing regulatory systems have been homogenized and replaced by large integrated corporate networks operating across the global economic space. As a general rule, in this process, efficiency, achieved by eliminating replication and redundancy, comes at the price of resilience.

By suppressing the flexible, self-organizing, multi-scale dynamics of Livelihood, the State–Market has been able to organize reliable, consistent welfare safety-nets for populations of highly mobile individuals – certainly in Western states, but also in a growing number of middle-income developing countries. Focused on the nation-state and increasingly global labour markets, these survival units provide a measure of consistency in the provision and have, hitherto, proved remarkably effective, eliminating, for the most part, absolute poverty, famine, and violent social disorder. However, their resilience is bounded and depends entirely on continuing economic growth. Liberal notions of legal, social, and economic freedom and the kind of non-negotiable individual autonomy celebrated by rights-based movements for social justice cannot be separated from the forms of capitalist political economy and civic national political organization (including borders) that are prerequisites for growth and a measure of redistribution.

One price of this 'stability within limits' is that it restricts systemic tendency toward self-organization. In complex systems, the least energetic way to generate order is by allowing for self-organization and emergence without top-down coordination and control (Kish 2019). Less regulatory structure does not necessarily mean greater individual freedom. It means the constraints on action are generated contextually, as much by family, neighbourhood, and community networks as by state diktats. In this context, liberal conceptions of freedom that centre on sovereignty and autonomy would necessarily give way to a more communitarian conception in which the individual overlaps with other units of analysis – household, marriage, neighbourhood, church, and so on. Freedom would likely change in meaning to something closer to the emancipation people experience in a good marriage, that is, freedom from having to make choices; the freedom of being caught in the slipstream of a flourishing life with others.

Distributive oikos: Economics, attachment, ecological edge, and diversity

Semi-permeable membranes and edges: Quantitative complexity at scale versus qualitative, granular complexity in place

In biological systems, complexity is a function of semi-permeable membranes at various nested scales. Barriers are necessary to separate discrete sets of biochemical activities. Permeable conduits are necessary to allow the exchange of energy, materials, and information, allowing emergent structural and functional dynamics at higher scales. Similar processes operate in relation to ecology and the juxtaposition of different ecotones or ecosystems and between human activities and ecological systems.

Comparable dynamics operate in economy and society. Modelled in the abstract, exchanges and interactions in any premodern society look like Figure 5.1b, that is, messy and dynamic with an enormous proliferation of ‘edges’ around which exchanges and interactions can occur and be controlled. With the enclosure movement in England, the rural economy was transformed by the dissolution of complex common pool resources managed through culture and convention over a millennium. Commercial sheep farming saw the simplification of land management and the bifurcation of feudalism’s complex social order into an increasingly binary distinction between landowners and ‘free’ wage labourers. This was the first step in the ‘great transformation’ that would see the emergence of distinctively ‘national’ economies contained by nation-states (Figure 5.3). With the emergence of the ‘economy’ as such and

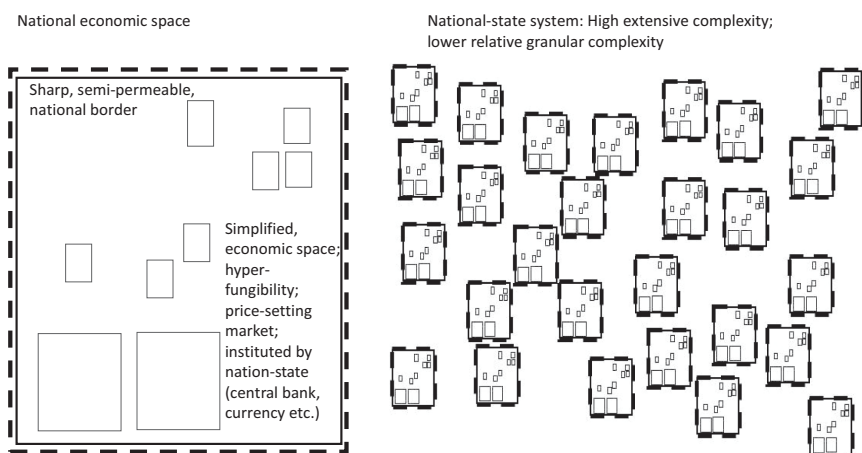


Figure 5.3 A visualization of highly ordered national economic spaces, versus less ordered national economic spaces. Less ordered economic spaces are far more complex and difficult to predict, but also have far less energy input.

the start of a rural exodus, the complexity of rural *taskscape*s (experienced from within and defined by the pattern of activity), entwining subsistence, culture, and religion, began to give way to the more familiar *landscape*s that seized the imagination of early-modern painters and poets.

The kind of system represented in Figure 5.3 (left) is *extensively complex at scale*. Each national unit is part of the nation-state system that emerged with rapid economic growth and internationalization of the economy facilitated by the Treaty of Westphalia. It is also highly complex in terms of the proliferation of specific products and services traded in the formal economy, the number of occupational roles associated with the society of individuals and the proliferating number and range of organizations (firms, non-governmental organizations (NGOs), public institutions, and so forth) that are required for the system to function – politically and socially as well as economically. In the language of Chapter 2, such extensive, quantitative complexity, though one-dimensional and narrowly focused, involves high transformity values across the board.

In contrast, the kind of system modelled in Figure 5.3 (right) involves a much more granular, repeating, fractal structure. Although there is much less extensive complexity at scale, much less quantitative complexity with regard to the number of interacting entities and operations in the formal economy, it is associated with the *qualitative, granular complexity* that accrues to informal, relational activities in the domain of Livelihood – thus, for example, a mother or father, working in an allotment, while caring for a child and engaging with neighbours. This kind of granular complexity is a function of precisely those cultural, semi-permeable barriers referred to above.

Ecology and economy: Attachment, the commons, and self-organizing pastoral taskscape

SDG 11 looks forward to a human settlement pattern that is inclusive, safe, resilient, and sustainable. If this objective is dealt with in isolation, it is almost certain that any gains will be bought at the cost of externalities at larger ecological scales. On the other hand, the large-scale expansion of Livelihood, balancing a contracting State and Market, implies a shift towards a distributist political economy that privileges subsidiarity and a democratic and highly dispersed pattern of ownership such that the great majority of households own solely or in cooperation, a variety of productive means, from gardens and domestic kitchens, garages, basement workshops, and community factories.

How would such economic transformation safeguard oceans, seas, and marine resources (SDG 14) and the integrity of diverse terrestrial ecosystems (SDG 15)?

- 1 *Top-down governance*: First of all, it goes without saying that existing protections of large ecosystems need maintaining and even extending. Subsidiarity is not a substitute for central regulation or traditional forms

of restoration ecology. To the extent that it coincides with a reduction in the state's capacities, it may even be associated with undermining such mechanisms. Simultaneously, more distributed agricultural production patterns with more people on the land may lead to more significant land-use pressures on even marginal lands, less amenable to large-scale agribusiness.

- 2 *Repair feedback loops through the empowerment of localized communities:* Subsidiarity and reduction in the scope and extent of global markets and the model of consumerism predicated on disposability will not only reduce the overall throughput of energy and resources – but also enhance informational and regulatory feedback loops, as communities become more directly responsible for enhancing local social-ecological systems.
- 3 *Systematic localism:* With the reduction in international and long-distance trade of fish, lumber and other wild-harvest commodities, local and regional communities will perforce become primarily responsible for the management of inshore marine, lake, river, and agricultural lands.
- 4 *Radical pastoral ethic:* Any move in this direction depends on the re-emergence of the pastoral ethic as the primary relation between the anthroposphere and the biosphere. Any significant shift from large-scale rationalized production landscapes to a more granular, premodern pattern of horticulture, permaculture, pastoralism, aquaculture, and agriculture would create a great deal more 'messy' edge habitat, conducive to the kind of biodiversity that has evolved in close association with human beings for ten millennia or more. From English ponds, dykes, and hedgerows (Müller 2013), Alpine pastures in Europe, or the Indian Himalayan foothills (Prasad and Sharma 2020), and Spanish cork-oak forests (Coca Pérez 2007), everywhere humanity has farmed, thousands of plant, animal, and insect species have co-evolved as fellow travellers (Eisenberg 2000). Rationalized industrial, agricultural, and urban landscapes tend to root out the messy edge habitat in which such species flourish. Complex, fractal distributed taskscapes promise to bring them back, multiplying the microhabitats for countless species. Contrast the opportunities represented by 100,000 domestic chicken coops compared with one giant, hermetically sealed factory farm; the thousands of acres of rich edge habitat associated with the boundaries of allotments and small farms, compared to the grass verges of agribusiness mega-farms, mowed to the last centimetre; or the backyards, woodpiles, and abandoned corners, the rear of storage sheds associated with tens of thousands of small workshops or domestic-scale food processing operations. Or again, compare the ecological space that opens up with a countryside dotted with habitations, gardens, coppiced woodlands, hedgerows, aquaculture ponds, footpaths, and grazing commons, with the industrial monoculture of the American Midwest.
- 5 *Attachment, meaning, and consumption:* Finally, a systemic culture of ecological restraint and a move away from global consumer society cannot come as a result of a central diktat. The SDGs must:

- a re-establish community connection to land through cultural restoration projects;
- b emphasize the importance of cultural mythology and ontological meaning to create a sense of self within a larger image of the cosmos; and
- c enhance cultural, social attachments, shared practices, and habits of mind disrupting the logic of fungibility and commensurability, entrenching the significance of non-monetary values accruing to ecosystems and biodiversity.

The local content of these proliferating, contextual, and substantive forms of rationality and meaning and how they might embed and structure price-setting markets will, of course, be highly variable. That is the point about that kind of localism. Moreover, it certainly cannot spell the end of any global economy or complex arrangements between nation-states or of the efficiencies and technological dynamism associated with price-setting markets. However, it does suggest a shift away from the open, cosmopolitan culture of unbounded liberalism. In this much more textured political and cultural landscape, there will be winners and losers. This is a price that necessarily attaches to the politics of ecological integrity.

Note

- 1 In biological structures, it is not only surface area but the functional properties of semi-permeable membranes that allow activities to be spatially separated as semi-autonomous subsystems (e.g. liver cells), but integrated into larger systems (e.g. the liver), which may be nested themselves into higher order systems (e.g. the digestive system, body, and so on).

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6 SDG 7 ‘Energy for all’

Ecological economic targets for an energy transition that centres well-being within planetary boundaries

Rigo Melgar^{1,2} and Matthew Burke^{1,2}

Introduction: SDG 7, quality of life, and planetary limits

The 2030 United Nations (UN) Sustainable Development Goals (SDGs) agenda draws necessary attention to SDG 7, to ‘ensure access to affordable, reliable, sustainable and modern energy for all.’ The focus on energy is fundamental because energy, defined as the ability to do work, enables our material well-being. SDG7: Affordable and clean energy:

- ensuring universal access to affordable, reliable, and modern energy services (7.1);
- increasing substantially the share of renewable energy in the global energy mix (7.2);
- doubling the global rate of improvement in energy efficiency (7.3);
- enhancing international cooperation to facilitate access to clean energy research and technology, including renewable energy, energy efficiency and advanced and cleaner fossil fuel technology, and promoting investment in energy infrastructure and clean energy technology (7.A); and
- expanding infrastructure and upgrading technology for supplying modern and sustainable energy services for all in developing countries (7.B).³

As significant a step as these targets represent, they do not yet sufficiently relate to the broader goal of achieving well-being within planetary limits. In examining SDG 7 from an ecological economic (EE) perspective, we recognize that energy itself is not the goal, rather the goods and services that it enables for our well-being. The sustainability of our socio-economic system and its ability to provide for the basic goods and services for humanity depends on our ability to harness and transform low-entropy energy inputs, maintain well-functioning ecosystems, and avoid overwhelming the natural sinks of our biosphere with the accompanying residuals of high-entropy outputs (Georgescu-Roegen 1971, 1993; Odum 1971, 2007; Daly and Farley

2011; Ayers 2016; Hall and Klitgaard 2018). Thus, energy availability is a pillar for achieving all other SDGs.

Energy systems both enhance and, increasingly, undermine well-being. Since the 1950s, the pursuit of economic growth as the end goal, as a poor proxy for well-being, by virtually all countries has been enabled only by consuming increasing amounts of fossil fuels, and more recently, by an increasing reliance on debt (e.g. Ayres and Warr 2005; Ayres et al. 2013; Murphy and Hall 2011; Hagen 2020). In recent decades, developed countries have been joined by emergent countries in accelerating emission outputs from economic throughput (e.g. Hanif et al. 2019). Fossil fuels as agricultural inputs have also enabled the human population to grow from 2.5 billion in 1950 to 7.8 billion today (e.g. Ehrlich and Ehrlich 2016). The unsustainability of our ecological footprint is reflected by humans being in ecological deficit since 1970, using today the equivalent of 1.6 Earths for resources and natural sinks.⁴ However, although fossil fuels have enabled some of us to temporarily overcome the direct limits to growth scenarios as presented in Meadows et al. (1972), significant populations worldwide face daily limits to their quality of life (Ahmed 2017). Consequently, our coevolutionary development with fossil energy has resulted in an improved quality of life for some at a cost of triggering a climate crisis for all by exceeding our planetary boundaries with excessive anthropogenic emissions (Steffen et al. 2015).

SDG 7 therefore requires greater attention to the role of energy-intensive economies in undermining the conditions necessary to support human well-being. In 2015, the adoption of SDG 7 and the Paris Climate Agreement recognized the need for a just energy transition that reduces societal dependence on fossil fuels with use of low-carbon energies to address inequalities and the climate crisis. In 2018, the UN Intergovernmental Panel on Climate Change (IPCC) released the *Global Warming of 1.5°C* report sounding the alarm about the urgent need to keep warming below 1.5°C above pre-industrial levels by cutting anthropogenic greenhouse gas emissions in half from 2010 levels by 2030 and achieving net zero emissions by 2050 (IPCC 2018). However, a just energy transition of this magnitude requires a reckoning with the reality that affluence itself is a key driver of energy consumption, inequality, and ecological overshoot (Wiedmann et al. 2020; Oswald et al. 2020). Thus, high-energy use economies are especially called upon to urgently and rapidly transition to low-carbon energy systems to avoid irreversibly crossing planetary boundaries. Without a reduction of energy consumption by the wealthy, this transition will be even more difficult if not impossible.

Here, we provide an EE analysis of SDG 7 to develop more holistic targets that centre well-being within planetary boundaries. We anchor our analysis on a biophysical foundation, recognizing that complex societies need to invest energy to obtain energy, and improvements in energy efficiency need to be combined with creative ways to internalize constraints and avoid Jevons paradox (e.g. Melgar and Hall 2020). We argue that SDG 7 requires directly addressing the issue of biophysical limits and human needs, especially given the impacts of

energy-intensive societies. Therefore, SDG 7 targets must be extended beyond a conventional focus on technical dimensions, such as technologies and efficiency, to meaningfully address biophysical and social needs, trade-offs, and limits. To accomplish this, first we analyse the challenges and opportunities involved in SDG 7 by providing a constructive biophysical critique of its original premise. Second, we describe critical concepts necessary for positioning this energy transition within the sustainable scale, just distribution, and efficient allocation pillars of EE. Finally, these concepts are used to guide formulation of targets that account for embeddedness of human energy systems within the broader Earth communities, and thus more fundamentally consider what is needed to ensure energy for all.

Why SDG 7 falls short

The current SDG 7 brings necessary attention to the need for energy for all but fails to consider what this means in terms of biophysical and social limits. In theory, all the SDG 7 targets, except for 7.B, apply to all 193 UN members who unanimously approved them in 2015. However, some targets (e.g. 7.1) apply more to the context of countries with low-energy use, and others (e.g. 7.A) more to the context of high-energy or emergent countries that control the development and manufacturing of low-carbon energy technologies. While the existing targets are important, it is essential to identify and be critical of the context in which they were developed to propose more holistic targets within biophysical, social, and economic realities.

SDG 7 and the myth of decoupling

The development of SDG 7 was influenced by ecomodernism and ‘green’ growth. The common thread between these propositions is that technology and economic growth are the primary answers to address socio-ecological issues such as climate change and inequalities (e.g. Jacobs 2013; Asafu-Adjaye et al. 2015). Proponents argue that we can continue growing the economy while achieving relative or absolute decoupling from material and fossil energy consumption through improvements in technology and efficiency. This is a very attractive proposition, since there are many issues for which growth is essential – including the need to help the world’s 3 billion desperately poor people. However, recent studies have demonstrated that absolute decoupling from material and fossil energy emissions has not sufficiently occurred, and it most likely will not happen in the time frame available to respond to the climate crisis (e.g. Ward et al. 2016; Hickel and Kallis 2019; Haberl et al. 2020).

Consequently, decoupling is not a sustainable strategy to address climate change because fossil-fuelled economic growth is a central driver (e.g. Antal and Van Den Bergh 2016). The difficulty of decoupling is revealed in target 7.A calling for ‘cleaner fossil fuel technology’, which presumably refers to technologies such as carbon capture and storage (CCS), a process that has yet to be proven viable and feasible (e.g. Sekera and Lichtenberger 2020). Technologies

such as CCS need consideration of how much energy return on energy investment (EROEI or EROI) can be obtained compared with low-carbon energies (e.g. Sgouridis et al. 2019). Furthermore, the SDG 7 targets for renewables (7.2), energy efficiency (7.3), and access to technologies (7.A) must consider that fossil fuels are usually inputs in developing energy and technologies (e.g. Sers and Victor 2018), and that efficiency improvements are typically offset by more energy consumption in a growing economy (e.g. Polinemi et al. 2015; Brockway et al. 2021). Regarding the latter effect, Daly (2002) emphasizes that efficiency does not lead to frugality, but frugality does lead to efficiency, which leads to the conclusion that the best way to reduce emissions is to cap extraction and emissions.

The economic growth imperative behind the 17 SDGs as a group is reflected in the energy requirements of all of them and hence their relationship with SDG 7, as illustrated in Figure 6.1. Many of the SDGs have direct energy demand requirements for their implementation (e.g. Santika et al. 2019). However, all SDGs are directly or indirectly dependent upon SDG 7, with SDG 7 in turn dependent upon many other SDGs, for their long-term sustainability. For example, SDG 7 cannot be implemented without SDG 9 (industry and infrastructure), and it needs the financial and political support of SDG 8 (decent work and economic growth), SDG 16 (peace, justice, and strong institutions), and SDG 17 (partnerships). Meanwhile, these SDGs cannot be sustained without the long-term energy inputs of SDG 7. Another important link is that of SDG 7 with SDG 12 (sustainable consumption and production) because this has an influence on how much energy generation is required for production and consumption. This in turn influences the sustainability of SDGs 13 (climate action), 14 (oceans), and 15 (biodiversity, forests, desertification), with the last two biophysical pillars also impacting the long-term sustainability of SDG 2 (zero hunger). Moreover, SDG 2 can also be negatively impacted if, for example, biomass is prioritized in the implementation of SDG 7 depending on the scale of energy consumption that would be required.

The links between SDG 7 and the rest of the SDGs are vast. The most concerning, and counterproductive, are the focus on economic growth (e.g. 7 percent annual growth rates that would double economies every 10 years in developing countries) in SDG 8 (e.g. Hickel 2019a) and the push for widespread industrialization in SDG 9. These relationships are especially problematic whether we continue to rely on fossil energy investments to obtain more energy or build the enormous new infrastructure required for a transition to renewables (Capellán-Pérez et al. 2019). There are other inconsistencies implicit in achieving the SDGs such as an increase in fossil fuel use that can undermine SDG 3 (health), as fossil fuel pollution is very harmful to human health (e.g. Vohra et al. 2021). Ultimately, the SDG 7 targets will undermine and be undermined by other SDGs if they fail to recognize and address the unsustainability of uneconomic growth (e.g. Eisenmenger et al. 2020), meaning growth that produces more social and environmental costs than benefits (Daly 2014; Jackson 2019; Fox and Erickson 2018, 2020).

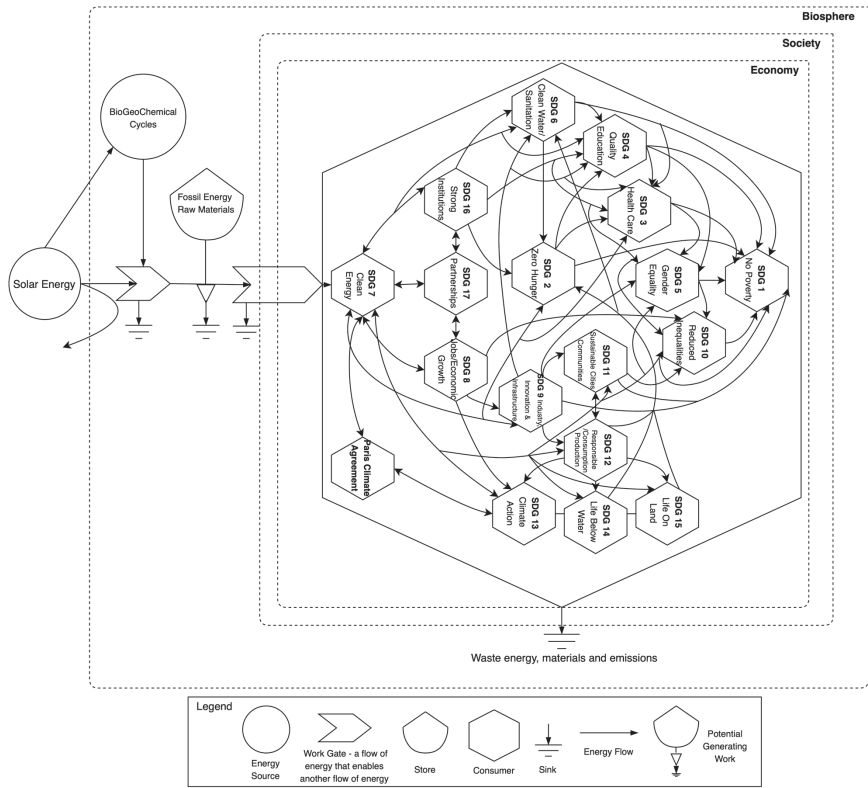


Figure 6.1 A systems diagram (inspired by Odum 1971, 1973) of the relationship between SDG 7, the other 16 SDGs, and the Paris Climate Agreement within the economy, society, and biosphere. Starting on the left side, the sun, biogeochemical cycles, fossil fuels, and materials are essential requirements for achieving the targets of SDG 7 and ultimately all other SDGs. The SDGs and the Paris Climate Agreement have been put inside of the consumer boundary to show the requirements for energy and material inputs and the subsequent waste energy, materials, and emissions outputs from those economic processes. For example, among the worst threats to SDG 14 (life under water) are warming, acidification, and de-oxygenation, all driven by the consumption of fossil energy.

Source: Authors.

Energy-affluent societies and SDG 7

SDG 7 also fails to adequately address the specific problem of excessive energy use. To achieve the targets of SDG 7, energy affluent societies need to reduce energy consumption to avoid rapid depletion, free up resources for energy access in energy-poor countries, and tackle climate change. However,

reductions in energy consumption by wealthy countries does not necessarily mean reductions in quality of life; there is a threshold above which well-being does not improve with increasing energy use or economic growth. While a society needs to achieve a certain level of energy access to sustain a high quality of life, this relationship is strongest at lower to medium levels of energy consumption and it weakens with increasing energy use (e.g. Smil 2011; Lambert et al. 2014; Nadimi et al. 2017). Similarly, empirical analysis has demonstrated that there is a corresponding threshold beyond which economic growth does not improve quality of life, and, instead, it can reduce it (e.g. Max-Neef 1995; Lawn 2003; Niccolucci et al. 2007; Lawn and Clarke 2010). Further, if the global population is not stabilized and fossil fuels continue to dominate, reductions in energy consumption will be overtaken by overconsumption and overpopulation (i.e. when a population exceeds its biophysical limits and cannot be sustained long-term with renewable resources) elsewhere, making it more difficult to meet low-carbon energy targets and achieve long-term sustainability (Rees 2020; O'Sullivan 2020). The inescapable conclusion is that to have any hope of achieving the SDGs, a fundamental limit and redistribution of wealth will be required, not by solely increasing the overall availability of modern sustainable energy services (Hickel 2019b).

SDG 7 and the three pillars of ecological economics

The SDG 7 targets need to go beyond the conventional focus on technical dimensions, such as technology and efficiency, to meaningfully address biophysical and social needs and limits, and reduce the rebound effect. This section provides the EE foundation to develop more holistic targets for high-energy societies that account for embeddedness of human energy systems within the broader Earth communities. To do so, we need to consider first what is the sustainable scale (e.g. achieving a satisfactory quality of life with the minimal level of ecological degradation) to inform the just distribution necessary to efficiently allocate energy resources in a way that maximizes well-being and enables a just energy transition (Daly 1992; Farley et al. 2005), as illustrated in Figure 6.2. We propose targets for each of these three EE pillars below.

Sustainable scale in SDG 7

The sustainable scale for SDG 7 represents what are the biophysical resources and energy inputs available to support human well-being. This pillar has to be considered first because it can enable or limit whether we can justly distribute and efficiently allocate energy. In this pillar, the biophysical needs and limits are based on the energy quantity that can be harnessed and transformed from environmental sources, including two main components: (1) the quantity of exergy (i.e. energy that can do work, versus anergy or that portion of an

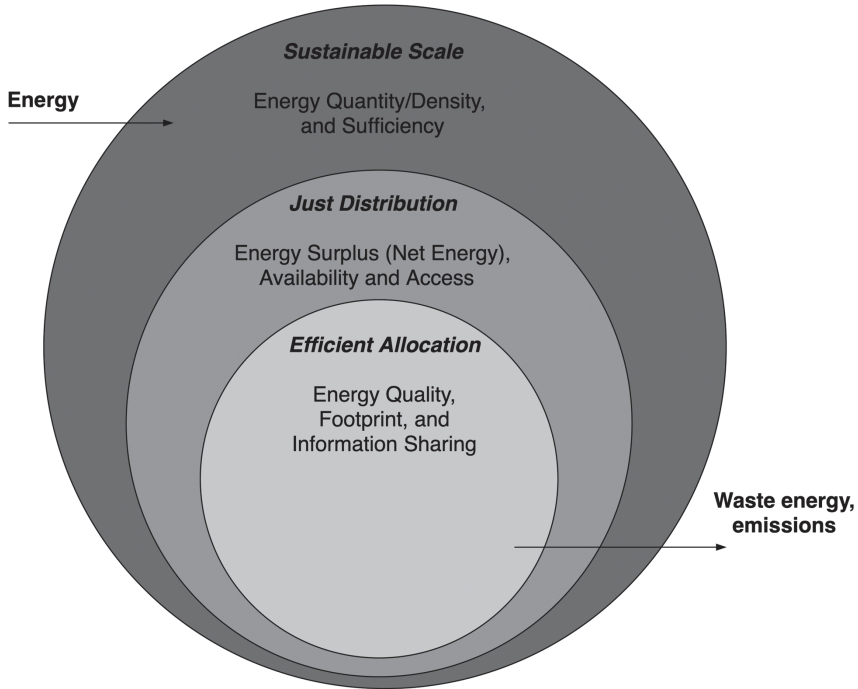


Figure 6.2 The pillars of ecological economics can serve as the foundation to understand the biophysical and social needs and limits to achieve more sustainable outcomes in the context of SDG 7. First, we need to understand what is the sustainable scale (energy quantity and sufficiency) to inform the just distribution (surplus energy (net energy), availability, and access) necessary to efficiently allocate energy resources (energy quality, footprint, and information sharing).

Source: Authors.

energy resource that will be turned into heat) and (2) the quality of energy as determined by the difficulty in finding and exploiting deposits, size of reservoir, energy density of deposit or source, concentration versus impurities, depth, physical and social difficulty of access, and so forth (e.g. Brown and Ulgiati 2004). The social needs and limits for the sustainable scale are influenced by the concept of energy sufficiency, which recognizes the necessity to achieve an absolute decrease in total energy use to provide a decent quality of life to the global human population (e.g. Burke 2020). Figure 6.3 shows that we can achieve a high level of human development with less energy consumption per capita than high-energy use societies such as the United States or Canada. Recent studies have demonstrated that sufficiency can be achieved at a small fraction of current energy use in energy affluent countries, but it will require

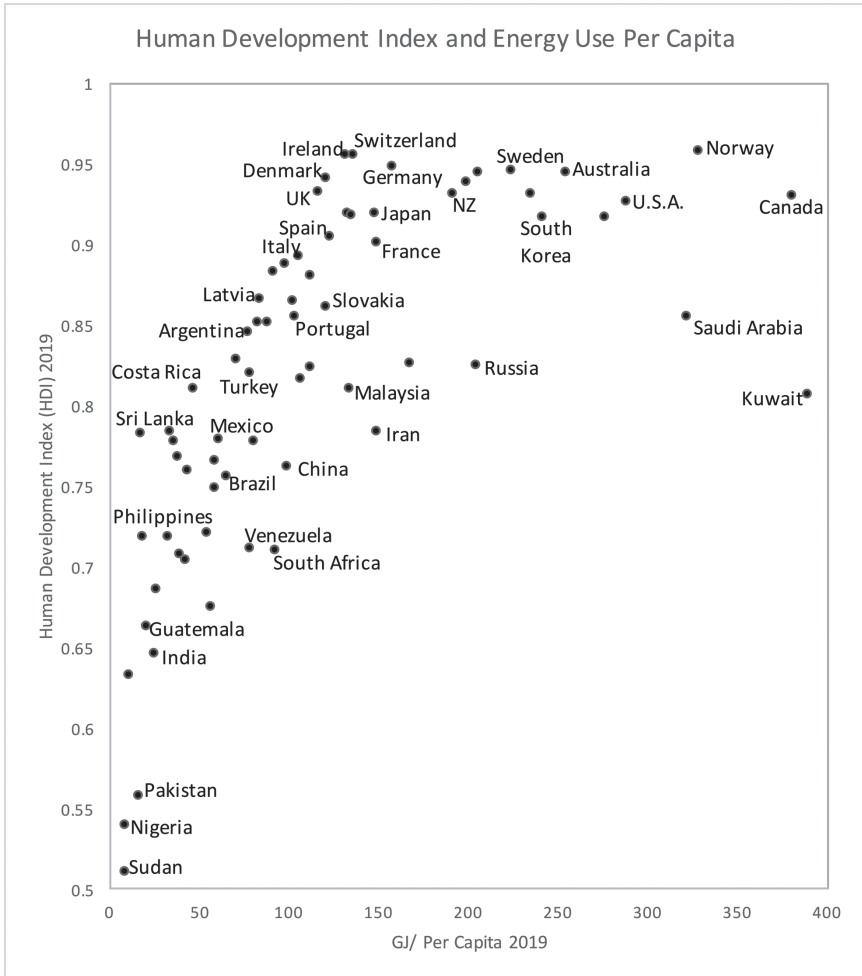


Figure 6.3 HDI and its relationship with energy consumption per capita.

Source: Authors. Data sources: UNDP HDI and BP Statistical Review of World Energy.

a transformation of current socio-economic systems to satisfy human needs at low-energy use (Millward-Hopkins et al. 2020; Vogel et al. 2021).

Our proposed target based on this pillar: *Ensure that non-technical energy education and conservation is promoted through energy-saving initiatives and energy caps to achieve well-being within sufficiency.*

Indicators: (1) percentage of public budget spent on subsidies for energy education and conservation programs and initiatives; (2) absolute reductions in energy use above the level needed to satisfy well-being.

Just distribution in SDG 7

The just distribution for SDG 7 requires a sufficient energy surplus enabled by the (preferably low-carbon) energy availability and access within a sustainable scale. In this pillar, the biophysical needs and limits of obtaining an energy surplus are measured as net energy or energy return on energy investment (EROEI or EROI), which helps to clarify the trade-offs among different sources of energy. The EROI needs to provide a positive ratio of energy returned to society from the energy invested to have enough energy surplus for reinvestment (e.g. Hall et al. 2014; Hall 2017). The social needs and limits for this pillar are influenced by the rebound effect or Jevons paradox, which states that increasing improvements in energy efficiency often lead to higher demand for energy in new technologies, reducing and potentially cancelling out efficiency improvements (e.g. Alcott 2005; Giampietro and Mayumi 2018). Moreover, the target of increasing the share of the renewable energy mix has produced incentives for increasing large-scale production of biofuels, which not only have low EROIs (Murphy et al. 2011), but can breach local biophysical limits in the conversion of land requirements (e.g. Herendeen 2019) and drive global land grabbing (e.g. Dell'Angelo et al. 2017). This suggests a need to monitor the just distribution of the biophysical impacts of energy generation (e.g. Temper et al. 2018).

Our proposed targets based on this pillar: *Ensure substantial investments in research and development to monitor and improve EROIs, while eliminating subsidies for energy uses that are wasteful and counterproductive to improvements in energy efficiency. Ensure fair redistribution of surplus energy beyond what is needed to achieve well-being.*

Indicators: (1) *per capita energy use for basic needs*; (2) *percentage of public and private investments into energy research and development*; (3) *percentage of public subsidies for fossil fuel energy*; (4) *distribution of land and water access for energy production*.

Efficient allocation in SDG 7

The efficient allocation of resources is where neoclassical economics and policies thereof place most of their focus (Bromley 1990). However, from an EE perspective, one cannot allocate energy resources efficiently without first establishing what is the sustainable scale and just distribution for a given population (e.g. Daly 2007). In this pillar, the biophysical needs and limits of SDG 7 relate to the energy quality and transformability enabled by energy quantity and surplus from a sustainable scale and just distribution, respectively. The social needs and limits under this pillar concern the energy footprint that, if too large, can cancel out energy efficiency improvements (if we can even achieve them). This pillar also requires pertinent decision-making to enable financing and purchasing power of people who are left out of the access to energy and technologies, and information and resource

sharing to increase the adoption of low-carbon technologies and improve their EROI.

Our proposed target based on this pillar: *Use EROI as a more holistic measure of efficiency and ensure stabilization and eventual reduction in energy footprint among energy-affluent populations.*

Indicator: (1) EROI of energy gathering activities for all sectors of the economy; (2) percentage of taxes on wasteful (luxury) energy consumption to disincentivize it and eventually reduce it; (3) average energy footprint of households, commercial buildings, and transportation from energy consumed directly and indirectly through embodied energy of goods and services from imports; (4) percentage of total energy supply allocated annually to building and maintaining energy systems.

Achieving a holistic SDG 7

A holistic SDG 7 and the energy transition

The extended targets that we have proposed can enable a more holistic and achievable SDG 7 as high-energy societies embark on the next energy transition (Smil 2010). An energy transition to low-carbon energy sources will require large upfront energy and material investments, which can lower the EROIs and cause disruptions in society if not planned carefully (e.g. Capellán-Pérez et al. 2019). The carbon dependence of many countries will of necessity lead to investing fossil fuels into creating low-carbon energies (e.g. Sers and Victor 2018), which makes our proposed targets for energy conservation, EROI improvements, and energy footprint reduction essential. However, even if nations can find a way to build and reproduce low-carbon technologies with low-carbon energy production at the scale that is required, our proposed targets are still required to allow freeing up resources for essential services in developing countries, and to reduce the rebound effect to achieve long-term socio-ecological sustainability.

An energy transition that is just and sustainable depends on a financial system that can promote efficient allocation of energy resources and collaborative efforts that ensure information sharing to develop technologies and increase EROIs. Biophysical economic assessments are a prerequisite for understanding what is the sustainable scale that can inform regional capabilities of energy production, energy governance, regulated energy markets, financing, and public policy (e.g. Melgar and Hall 2020). The just distribution of ability to generate energy and use and to improve technologies between developed and developing countries requires reductions of barriers to sharing knowledge (e.g. Kubiszewski et al. 2010). Furthermore, decentralized forms of energy generation have the potential to democratize energy access and management, albeit with trade-offs, and can help to create ownership of energy footprint to ensure long-term well-being (e.g. Venema and Rehman 2007).

Decoupling energy use and well-being

There is no necessary relationship between human well-being and high levels or rates of energy use, although populations do need to obtain sufficient energy access at low and medium levels for quality of life (e.g. Burke 2020; Millward-Hopkins et al. 2020). Complex societies that have been built on fossil energy transformations require increasing amounts of energy inputs to obtain some level of well-being, as populations expand and the best energy resources are depleted (e.g. Hall et al. 2008; Kish and Quilley 2017). However, the well-being from these often highly wasteful energy transformations has been distributed unequally, and the long-term impacts of depletion and climate change will reduce for everyone whatever well-being we are able to obtain (e.g. Capellán-Pérez et al. 2014; Oswald et al. 2020; Wiedmann et al. 2020). Our proposed targets aim to foster the decoupling of energy use and well-being for high-energy societies, while moving beyond (un)economic growth as the proxy for well-being. In view of the limitations of decoupling of energy and resource use from economic growth, we highlight the need to prioritize absolute and per capita indicators in addition to ratio or efficiency measures for SDG 7 (Eisenmenger et al. 2020). We further emphasize the need to place SDG 7 in its proper context as a *means* to enabling human needs including eliminating poverty and achieving well-being while ensuring life on land and in water (Cernev and Fenner 2020).

Governing a post-growth SDG 7

Many have proposed alternatives to economic growth to ameliorate our socio-ecological unsustainability (e.g. Kallis et al. 2012; Van den Bergh and Kallis 2012; Daly 2014). In the context of SDG 7, we recognize that the purpose of sustainable energy systems is to enable the fulfilment of our needs in a way that promotes long-term socio-ecological sustainability. However, the planning of sustainable energy systems requires balancing the trade-offs of energy sources and technologies and the coordinated governance of energy regions. This energy governance needs to promote absolute reductions of energy footprint and minimize the rebound effect through a variety of energy conservation initiatives that promote internalization of constraints individually and structurally. More broadly, we agree with Hickel's (2019) assertion that post-growth SDGs require eliminating the requirement of aggregate global growth while introducing quantified objectives for resource use (absolute and per capita) with substantial reductions in energy consumption among high-income nations.

There is no simple blueprint for how best to put these targets and indicators to practice. Any way forward will likely seem messy and idiosyncratic. In the context of high-energy societies, internalizing constraints cannot be divorced from culture and economics in codifying social values and constructing psychological habits for energy conservation. This point implies a need for modes

of governance of SDG 7 that operate at local and regional levels. Indeed, achievement of the SDGs cannot rely upon the same set of institutions responsible for the present breach of planetary limits (Eisenmenger et al. 2020). As SDGs are based on the specification of strategies at the national level, exactly how these goals are to be achieved will vary from place to place even among high-energy use nations.

A few more promising modes of governance are worth mentioning. Governance of SDG 7 across scales would prioritize, for example, expansion of local energy-relevant ecological indicators such as pollution (Griggs et al. 2013), inclusive multi-scalar targets that lower impacts of high-energy societies (Gupta and Vegelin 2016), identification of targets for levels at which energy use (and economic growth) no longer contribute to well-being (Nilsson et al. 2013; Santika et al. 2019), implementation of participatory energy budgeting (Cabannes 2019), and building community capacity through transparency, public policy coordination, and open sharing of technology, information, and finance (Guha and Chakrabarti 2019; Nilsson et al. 2013). To enable implementation and monitoring over time, we further propose improved and ongoing data collection and data sharing on key energy indicators including EROI (Brand-Correa et al. 2017; Meyer 2020) and additional measures of energy biophysical footprint and energy sustainability (Wackernagel et al. 2017; Ninno Muniz et al. 2020), ideally to support comprehensive, national- or societal-level metrics. Table 6.1 summarizes the extended targets and indicators that we believe can be used as a starting point to better align SDG 7 with the sustainable governance required to achieve energy for all and improve well-being.

Conclusion

Fundamentally, to make possible the achievement of the laudable goals of SDG 7 will require going back to basics and reconsidering what well-being really means as a society. The current SDG 7 does not sufficiently recognize that virtually every target requires fossil energy inputs. The trajectory that we are on is clearly unsustainable as the threat of climate change, the rapid depletion of resources, and the extreme inequality that exists in our finite and increasingly overpopulated planet make evident. The usual resolution to socio-ecological conundrum conflates well-being with economic growth, leading to an increasingly dire and unpredictable situation in the future. However, humanity has demonstrated the capacity to adapt and change behaviour and social structures in response to changing environments and circumstances throughout history. The extended targets that we have proposed can help us to emphasize the need to conserve energy so that we do not continue to depend on polluting energy sources at the expense of planetary well-being. Today's access to information and technology, if used with the right goals in mind, may facilitate the fundamental changes necessary for a just and sustainable energy transition that enables well-being for all.

Table 6.1 A summary of the extended SDG 7 targets and indicators based on the three pillars of ecological economics

<i>EE Pillar</i>	<i>Target</i>	<i>Indicator</i>
Sustainable scale	Ensure that non-technical energy education and conservation is promoted through energy-saving initiatives and energy caps to achieve well-being within sufficiency.	(1) Percentage of public budget spent on subsidies for energy education and conservation programs and initiatives. (2) Absolute reductions in energy use above the level needed to satisfy well-being.
Just distribution	Ensure substantial investments in research and development to monitor and improve EROIs, while eliminating subsidies for energy uses that are wasteful and counterproductive to improvements in energy efficiency. Ensure fair redistribution of surplus energy beyond what is needed to achieve well-being.	(1) Per capita energy use for basic needs. (2) Percentage of public and private investments into energy research and development. (3) Percentage of public subsidies for fossil fuel energy. (4) Distribution of land and water access for energy production.
Efficient allocation	Use EROI as a more holistic measure of efficiency and ensure stabilization and eventual reduction in energy footprint among energy-affluent populations.	(1) EROI of energy gathering activities for all sectors of the economy. (2) Percentage of taxes on wasteful (luxury) energy consumption to disincentivize it and eventually reduce it. (3) Average energy footprint of households, commercial building and transportation from energy consumed directly and indirectly through embodied energy of goods and services from imports. (4) Percentage of total energy supply allocated annually to building and maintaining energy systems.

Source: Authors.

Notes

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- 3 United Nations SDG 7. Available at: www.un.org/sustainabledevelopment/energy/ and <https://sdgs.un.org/goals/goal7>.
- 4 Global Footprint Network. Available at: www.footprintnetwork.org/our-work/ecological-footprint/.

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7 Livelihood and limits

We can prosper without growth

SDG 8: Promote sustained, inclusive, and sustainable economic growth, full and productive employment, and decent work for all

SDG 9: Build resilient infrastructure, promote inclusive and sustainable industrialization, and foster innovation

John Maynard Keynes was optimistic about the economic possibilities for his and the world's grandchildren (1930). In a famous essay, he predicted that by now

for the first time since his creation man will be faced with his real, his permanent problem – how to use his freedom from pressing economic cares, how to occupy the leisure, which science and compound interest will have won for him, to live wisely and agreeably and well.

In the West, Millennials (born 1981–1996) and Gen Z (1997–2010), the grandchildren meant to enjoy such freedom and leisure, are supposed to be looking forward to a future in which humanity has solved the problem of needs. But instead of leisure, time for creativity, and little stress, the grandchildren are bracing for stagnant wages, precarious income, worsening inequality, and ecological crisis. These generations have witnessed the unparalleled impacts of the climate crisis, from drought to floods and forest fires to massive hurricanes. Every year, long-held records are broken; for high and low temperatures; the strength of storms; rainfall events; and in the socio-economic domain, so-called 'once-in-a-lifetime' financial crises; migrant crises; and most recently, the impact of a global pandemic. Perhaps not surprisingly, the faith of emerging generations in the likelihood of a safe and prosperous future has dissipated. Uncertainty is fast becoming a fact of life. In response, more young people are becoming interested in self-provisioning, skill-building, and emergency preparations. The popular youth store, Urban Outfitters, now sells, alongside their fast-fashion and inordinately high-priced trend-setting items, 72-hour 'Preppi the Prepster' emergency kits equipped with enough food, water, and survival gear to get by in an emergency – all packaged within a fashionable tote.

Between the non-unionized jobs of Amazon where workers are forced to urinate in buckets, the toxin-filled iPhone factories, the precariousness of the growing ‘gig economy’, and the litany of reports on poor working conditions (Ortega 2019), the future looks anything but leisurely and worry-free. Nothing about the future is certain except the continued fallout of the global climate emergency, endless job applications, and younger average ages of death. Riddled with anxiety and depression (Mcmaster 2020) and unsure of bringing children into such an unstable world (Tomaine 2020), Millennials and Gen Z have little confidence in the continued success of growth economics and anticipate only continuing uncertainty.

Growth economics has not delivered a future of happiness, equity, and hope. It has not produced a multitude of opportunities for meaningful work or extra time for leisure. SDG 8 is the most inconsistent and incomprehensible goal precisely because growth is the underlying cause of precarious work, ecological emergencies, and widespread social ailments. Target 8.1 indicates the need for 7 per cent GDP growth per annum in the least-developed countries – despite the widespread recognition that GDP does not measure improved well-being or desirable development. At the same time, Target 8.4 is to ‘decouple economic growth from environmental degradation’, a statement wholly contradictory to the logics of thermodynamics, capitalism, and ecological economics. Targets 8.9 – to support and expand sustainable tourism – and 8.10 – to strengthen financial institutions and expand access to banking and financial services – serve only to exacerbate existing problems and to further reinforce the cycle of expansion and growth of the State–Market. In what follows, we look at how we came to rely so profoundly on growth as a measure of progress and what alternatives exist. The basis of our argument against growth was elaborated in Chapters 1–3. While we have thoroughly explored a Livelihood economy, here we end with a series of alternative indicators of success and targets that may help move towards such an economy.

How did we get here?

For early economists, such as Adam Smith and David Ricardo, it would have been inconceivable to think, as is the habit of mainstream economists today, of economics and politics as separate domains. When economics became a formalized discipline in the late nineteenth century, the state’s role was all but removed from theories and education. Downplaying the role of regulation and macro-economic economic decision-making, in the politics of *laissez faire*, classical economists pursued what Karl Polanyi (1944) characterized as the utopian project of the self-regulating market. The state was relegated to a subsidiary role alongside other actors such as consumers and institutions.

In the early twentieth century, neo-classical economists developed sophisticated (micro-economic) models, which foregrounded the assumptions of individual preference formation and instrumental, information-led, and utility-maximizing rationality. The assumption was that with individuals

maximizing satisfaction and firms maximizing profit, an efficient market mechanism (the ‘invisible hand’) will, with each cycle and in a distributed and decentralized manner, ‘clear’, bringing the economy to equilibrium (Hayek 2011).

During the inter-war period, in response to persistent problems of effective demand and under-consumption, which came to a head with the Great Depression, the discipline of economics split. The issues were not trivial. Liberal capitalism was visibly failing and the outlines of two rather monstrous alternative political economic models were emerging onto the stage in the form of Soviet (Marxist) socialism in Russia and fascism/National Socialism in Italy and Germany. Both involved a central and over-riding role for the state. In response to these challenges, the economic theory advanced by John Maynard Keynes argued that liberal democracy could only rescue the market economy by accepting a much greater role for the state. The new macroeconomics centred on the idea that that government should, in any market downturn, intervene with counter-cyclical public spending, shoring up demand and maintaining the capacity of the public to consumer.

World War II consolidated the central role of the state in even the most liberal economies such as the United States. It was during this period that the now familiar battery of forecasting tools, statistics, and metrics of economic success were developed. The modern preoccupation with gross domestic product (GDP) began with Simon Kuznets’ (1934) report to the US Congress. He proposed the metric as a tool to capture all economic production by companies, individuals, and the government within a single measure. GDP now includes measurements for personal consumption, business investments, government spending, and net exports. The resulting number represents the market value of all the final goods and services produced in a specific time period. After the 1944 Bretton Woods conference, GDP was solidified as the standard tool for measuring and comparing the health and relative success of national and global economies. Bretton Woods also established rules regarding commercial and financial relationships between the United States, Japan, Canada, Western Europe, and Australia, requiring all parties to tie their currency to gold to maintain a stable exchange rate and comparable metrics.

GDP is an appealing metric as it accounts for various goods and services and thus remains the most widely used measure of comparative success between market economies and states. Because one can assume that most individuals and governments would prefer to maximize income and expenditures, GDP seems like a logical measure of success. While GDP can measure a country’s ability to provide costly systems, such as education, it does not measure the quality or substantive success of such systems.

By the 1950s, economic growth, as measured by GDP, had become the top priority for national governments and the ‘remedy’ to all political and societal problems, from unemployment and ill-health, to social cohesion and military security (Arndt 1978).

And since the measure was indeed a good proxy for economic activity that did engender high rates of technological innovation, poverty reduction, welfare and infrastructural spending, cheap food, all manner of modern conveniences including a never-ending flow of labour-saving devices that freed up women's time and delivered money into the pockets of children and young adults, the measure became a universal and unquestioned frame of reference. GDP captured in a single number the legitimating mythology of liberal capitalism, that is, the enchanting story of progress and prosperity for all. Over time, this 'growth paradigm' coalesced into a highly resilient system based on of the compelling vision of individual autonomy and prosperity and political discourses of sovereignty and power (Schmelzer 2016). The implication of this discourse was that this magic number would keep rising, indefinitely.

Beyond the biophysical

Economist Moses Abramovitz was one of the first to question whether GDP suitably measures a country's well-being, cautioning that long-term changes in the growth of output may not result in a suitable understanding of the growth of welfare (Reder 2014). Economic growth also became a target in the founding literature of ecological economics (Chapters 1 and 2). Challenging the juggernaut of economic growth, E. F. Schumacher condemned what he described as a twentieth-century preoccupation with 'gigantism' (1973) while Kenneth Boulding portrayed the economy in terms of the finite metabolism of a spaceship (1966).

At the same time, the illusion of continued 'prosperity for all' was coming under pressure from other directions. In the 1970s rising awareness of global inequality coincided with stagflation in Western countries. According to conventional economic theory, mass unemployment should have led to falling demand and deflation. Stagflation was a consequence of a supply shock in relation to huge oil price rises following the Organization of Petroleum Exporting Countries' (OPEC) oil embargo after the 1973 Arab–Israeli war. This had the effect of raising prices while simultaneously slowing economic growth by increasing production costs and reducing profits. Using an excessively permissive monetary policy to counteract recession (the Keynesian response) caused inflation and a negative price/wage spiral.

The 1973 oil shock underlined a growing awareness of prospective energy scarcity and resource constraints. In 1972, *Limits to Growth* succinctly demonstrated the inevitability of biophysical limits to economic growth (Meadows et al. 1972). This was probably the most widely read challenge to industrialized capitalist economics since Karl Marx's *Communist Manifesto*. The report argued that given a trajectory of 'business as usual', with no changes in historical growth trends, such limits to growth would become evident by 2072, leading to a sudden and uncontrollable decline in both population and industrial capacity. The world is currently tracking reasonably close to the limits of growth business as usual scenario (Turner 2008).

Within mainstream economics, the sub-discipline of environmental economics emerged to address these problems. Environmental economists expose market failures to allocate resources efficiently, distinguish between common goods versus public goods, and question valuation schemes by introducing ecosystem services and externalities (Aidt 1998). A popular example used among environmental economist educators is that when someone clear cuts an area of rainforest, GDP increases because logging creates jobs, commodity resources, and trade. For this reason, it is argued, the trees need to be given a monetary value such that their use can be accounted for in the market balancing of preferences and utilities. However, environmental economics does not go far enough, as it maintains a dualistic relationship between humans and nature. It is impossible in this modified market framework, to include cultural costs such as the demolition of sacred spaces, nor complex externalities relating to global commons (as with the role of rainforests in regional hydro-cycles or global climate regulation).

As elaborated in Chapter 2, biophysical limits is very difficult to reconcile with the mainstream economics and the market-liberal right-wing of Western politics, because the institutions of the joint-stock company, dividends, and quarterly accounting, all tie the corporations to the logic of expansion, market share, constant innovation (Schumpeterian ‘creative destruction’), and rising profits. By the same token, the vista of limits continues to be an anathema to the socialist and social democratic left because it threatens the social compact associated with the welfare state. And of course, it was and remains a problem for the newly autonomous states of the Global South because it appeared to limit prospects of industrial modernization (Quilley 2017).

Consistent attempts to fudge, ignore, or downplay the limitations raised by Meadows et al. have continued with decades of policy making within the rubrics of sustainable development and ecological modernization. Countries and cities continued to look for ways to reconcile the improved lifestyle and individual freedoms associated with industrial modernity the ever more pressing need to preserve the integrity of the biosphere and local and regional ecosystems. For the most part, policymakers, the public and even academics in the field of sustainable development have avoided confronting this tension. The very real social and democratic benefits of a global civilization rooted in liberal values and Enlightenment rationality is now deeply integrated into all aspects of life, not least the great majority of public institutions.

Sustainable development proposed that economic growth could become decoupled from expanding throughputs of materials and energy use, while value is simultaneously generated from the global exchange of ideas. ‘Green growth’ advocates have fostered discourse that effectively disguises growth within a sustainable governance framework that gambles on anticipated game-changing technical innovations. However, with the continued failures of UN climate negotiations, the steadily rising toll of climate-related disasters, and feelings of desperation among environmental scientists, awareness of the severity of the problem is percolating into popular culture. Additionally, while economic

growth and automation, it was promised, would combine full employment with reduced working hours, and an end to poverty, this rosy prospect has invariably been deferred into the future (Victor 2008, 245–58).

Freewheeling market economics generates inequality almost by design. In every state, some degree of progressive taxation has proved necessary for social cohesion and political order. As Pinker (2018) has argued persuasively, the growth in the global economy has been very successful in ‘lifting people out of poverty’. And the heavily redistributive political projects have, in the main, failed (Paul 2019; Service 2010; Miller 2016; Gomez 2019) – either politically or economically or both – and resulted in higher levels of poverty. At the same time, shorn of strong civic-national constraints, in the context of globalization, market liberalism has engendered levels of inequality that are becoming politically unsustainable. Thus, for instance in the United States and South Africa, the top 1 per cent of the population account for 20 per cent of wealth (Victor 2008, 261); and in Canada, the top 20 per cent own 67 per cent of the wealth (Victor 2008, 263).

If a key target for the SDGs is a more equitable distribution of resources, this seems incompatible with the track record of both market-liberal capitalism and redistributive socialism. Taking into account also the broad goal of ecological integrity, it would seem that the permutations of Market–State that dominated the political economic imaginary over the twentieth century are all to be found wanting. Ecological economics, which we have described at length in Part I of this book, is broadly concerned with the relationship between ecosystems and economic systems. Ecological economics also provides a new set of ways to understand economic activity that seeks to challenge growth as a measure of success and improve social well-being.

Are we better off?

Income, inequality, and inequitable distribution impact the degree to which GDP tells a full story of what is happening within a given economy. The United States has an exceedingly high GDP, but very few reap the exceptional rewards while many remain in poverty – Daly goes as far as to say that the United States is in a period of ‘uneconomic’ growth (Daly 1997). Several things that measure well-being and the extent to which citizens may be living a good life are excluded from GDP, such as leisure and mental health. The nature of GDP as a measurement of progress means frequent conflation of economic activity per se with welfare. But its utility for the evaluation of *quality* of life depends upon the extent to which prices and consumption accurately correlate with human welfare.

Coining the concept of a ‘steady state economy’, John Stuart Mill (1865) was among the first to question whether growth engenders happiness. The pushback against the technological logic of industrialism from the Luddites and later the Arts and Crafts Movement underscored the sense that growth and industrialization were stripping away that which made people human – creativity,

cooperation, and community (Ruskin 1854; Morris 1988; O'Rourke, Rahman, and Taylor 2013). These early commentators were especially preoccupied with the quality of work and labour. Long working hours, in undesirable conditions, to produce but one component of a final product that was devoid of any stamp of individual creativity, compromised, they argued, the innate human propensity for conscious, creative activity. Such alienated labour (Ollman 1977) was at odds with humanity's 'species being' and could not but erode individual life satisfaction (Ollman 1977). These debates continued well into the twentieth century with critiques of Fordism, assembly line production, and the deskilling in the labour process satirized by Charlie Chaplin in *Modern Times* (Braverman 1974).

In the SDGs, tying together decent work and economic growth conflates income security and economic welfare with job satisfaction, work–life balance, and questions of alienation (Frey 2017). Once the automatic assumption of economic growth is at least suspended on ecological grounds, it becomes possible for targets relating to the right to work to engage directly with issues of alienation and the social-psychological problems of industrial organization, not just in manufacturing, but farming, retailing, the service sector and all areas of the economy. However, this would necessarily involve qualifying efficiency and productivity as measures of success.

At the same time, GDP does not account for unpaid labour and 'neglects the value and cost of social reproduction' (Rai, Brown, and Ruwanpura 2019, 368); social reproductive work is largely unpaid and is therefore not accounted for in calculations of economic growth. If someone hires care for children or a gardener to mow their lawn, this is included in GDP, but not if they do it themselves. This much criticized accounting procedure quite literally erases much of what we have called the Livelihood economy from public consciousness and consideration – including a great deal of social care and reproductive work performed by women. In this sense, the ecological imperative to move away from growth in the State–Market economy, coincides with the need for the SDGs to recognize and value work in the informal economy that is currently the nexus of great inequality vis-a-vis precarious and exploitative labour practices.

Furthermore, there is 'virtually no relationship between income and happiness when compared across many countries' and poorer countries such as Rwanda 'score as high or higher on the happiness measure than much richer countries such as Germany and Hong Kong' (Victor 2008, 211). There is no significant relationship between happiness and GDP per capita (Easterlin and Angelescu 2009). When people are asked how much more money they would need over their current income, they name a figure around 20 per cent higher than their current income, regardless of their income (Easterlin 2004). This is largely because life satisfaction does not depend on an objective condition, but also 'on a comparison between one's objective condition and a subjective ... living level norm' (Easterlin 2004, 32) so even as your income increases, so does that of the people around you, so you are comparatively not better off. In another study by Easterlin, he found that individuals income goes up

over their lifetime by 116 per cent, but their happiness stayed the same over the 28 years – thus, they had considerably more money but did not feel happier (2004). Emotional well-being rises with income but there is no further observable progression of well-being or happiness beyond an annual income of approximately \$75,000 (Kahneman and Deaton 2010). Although in some ways, this supports the ecological economic case for income capping, this may be a divisive intervention that would further bolster the dominance of the state. A distributist emphasis on a wide distribution of capital and domestic/community means of production addresses the same problem from below (Medaille 2014; Rieff and Lasch-Quinn 2007).

Over the course of the last 200 years, the alienation and ‘ongoing individualization and medicalization of everyday life in which people and problems are split from social contexts’ (Frawley 2015, 69) have come to shape the anxious, depressed, nervous, and narcissistic personalities of modern individuals (Ollman 1977; Donnellan, Trzesniewski, and Robins 2009; Hartt 1980; McMaster 2020). And yet, it is engrained that these feelings can be overcome by better decision-making. Happiness is ‘not a universal and timeless human value, but a culturally mediated ideal’ (Frawley 2015, 65).

The new conception of self-made happiness began to take root in the context of the hyper-individualism and mobility of the ‘liquid modernity’ and ‘therapeutic society’ (Bauman 2000; Rieff and Lasch-Quinn 2007). This is manifested most clearly in the forced positivity of the American society (Ehrenreich 2010) and the obsession with the power of ‘positive thinking’ and self-improvement. The preoccupation with self-help, therapy, positive thinking, and the need to will oneself into happiness further suggest that economic growth is not making us happier.

Research also demonstrates that when income inequality is low, then an on average increase in per capita GDP was associated with increased life satisfaction, but when income inequality is high, the same GDP per capita increase is unrelated to life satisfaction (Kesebir 2016). Inequality is problematic for other reasons as it results in low levels of trust and reduced fairness – both of which are predictors of happiness (Oishi, Kesebir, and Diener 2011). Furthermore, income inequality is linked with lower mobility, poorer overall health, higher crime levels – all increasing stress and anxiety, reducing well-being (Wilkinson and Pickett 2011). Given that growth only maximizes happiness to a certain level and exacerbates inequality, there is an immediate need to redirect economic measurements to other domains that enrich lives, such as health and family (Easterlin 2016).

GDP does nothing to address inequality (Naguib 2015). However, addressing income inequality through the state alone is problematic. For instance, it is easy to make the case for both income capping and high taxation on the wealthy with a view to reducing inequality.

However, this is to construe the problem purely within the State–Market dimension that structures left–right politics. The track record for state interventions of this sort is not great. Even the much-vaunted example of

Sweden has moved away from the high point of redistributive social democracy. Income capping and high taxation would both have the effect of undermining incentives and disrupting the competence hierarchies upon which modern organizations, whether public or private sector, depend. And while the state functions as the survival unit of last resort, it will remain dependent on growth for fiscal transfers to pay for infrastructure.

As we argued in Chapter 3, a better solution is to reignite the Livelihood economy as a balance to both State and Market. In terms of social cohesion, this trajectory is communitarian rather than collectivist, tapping into the self-organizing capacities of families, households, and communities and reducing dependence on both the State and disembodied, external, price-setting markets. Distributist policies (Medaille 2014; Penty and Boyle 2019; Pearce 2006) are in one sense libertarian, allowing households and communities the freedom to mobilize local and domestic means of production. Expanding Livelihood may have the effect of reducing income inequality while at the same time, increasing relational engagement with work, family and community and reducing the ambit and traction of Rieff's therapeutic culture and the viscosity of Bauman's liquid modernity.

Beyond growth for well-being

The thread that ties together the arguments across these otherwise diverse chapters of this book into a consistent discourse is that sustainable development is an oxymoron. Whether a biophysical or social argument, all hinge on the fact that there are insufficient resources to continue on with business as usual. That doing so also does not necessarily improve happiness or well-being should be the final nail in the growth coffin. There is now a growing field of heterodox economics in which, for all its pluralism, there is a strong consensus as to the urgent need for a transition to a low-growth, no-growth, degrowth, or even agrowth approach to the future, as quickly as possible (Kallis, Kerschner, and Martinez-Alier 2012; Victor 2008; Daly 1997). Peter Victor (2008) argues that economic growth is unnecessary for a stable economy with high levels of well-being. Degrowth scholars and activists argue that the economy's economic scale must actually shrink to achieve any level of sustainability (Kallis, Kerschner, and Martinez-Alier 2012; Martinez-Alier et al. 2010). Degrowth refers to the intentional downscaling of economic activity, and particularly consumption, in order to reduce humanity's overall ecological footprint. Only through targeted and intentional contraction of the economy can communities adequately respond to environmental issues. With a slightly different focus, van den berg (2018) argues that degrowth may have unintended negative consequences and suggests 'agrowth' as an approach for the future – an agnostic de-prioritization of growth.

Herman Daly pointed out that 'more human economy (more people and commodities) means less natural ecosystem ... There is an obvious physical conflict between the growth of the economy and the preservation of the

environment' (2017, 85). Western society has already collectively entered a period of economic ungrowth in that growth has already reached a tipping point in terms of diminishing marginal returns. If we look at the pandemic, national governments want to focus on economic recovery to get things 'back to normal'. This is understandable because the social and economic impact of the lockdown is having the collateral impact through death unrelated to COVID and an enormous toll on mental and physical health. In the short and medium term, a resumption of growth will certainly save both marriages and lives and do much to improve the mental health of teenagers. In the longer term, against this must be counted the likely catastrophic impact of ecological crisis. Just as it is incredibly difficult to weigh up the comparative death tolls and collateral impacts of COVID itself (disease) versus the lockdown (treatment), the trade-offs are incredibly complex.

While we remain true to the complex nature of these issues, understanding that we can only plan for what we do not know will happen, in the short term, we need to redefine success, and this idea is beginning to percolate into civil society. For example, at the 68th Session of the UN General Assembly in 2013, Ban Ki-moon submitted a report for discussion titled 'Harmony with Nature'. The report argued that to achieve harmony with nature, society must accept limits to growth by learning from deep ecology, systems theory, and key sustainability drivers, including equity, justice, and universal rights. To do this, Ban Ki-moon recommends redefining success by promoting broader measures of progress.

There are multiple alternative ways to measure progress. One of the early adopters of such an indicator was Bhutan's King Jigme Singye Wangchuck, who, in 1972, created *Gross National Happiness* and made it the new primary indicator of success. In the 1990s, the UN launched the *Human Development Index* (HDI), which added education, gender, and health to a country's measurement. However, because HDI does not include environmental impact, rich countries tend to score far higher (Türe 2013). In the 1990s, Mathis Wackernagel and Bill Rees created the *Ecological Footprint*, which has since gained significant traction and public attention as an accounting system for Earth's availability and use of carrying capacity (Rees and Wackernagel 1996). The Global Footprint Network provides an online platform for charting HDI against the Ecological Footprint to put the two together ('Ecological Footprint Open Data Platform' 2018). Another widely used indicator is the *Genuine Progress Indicator*, which measures a wider set of economic indicators and externalities, including value for voluntary work, leisure time, and environment. These indicators show developed countries in a very different light as compared with GDP. For example, the *Index of Wellbeing*, developed at the University of Waterloo includes eight domains of life relevant to livelihood and well-being, rather than economic measures of success. Since 1994, Canada's GDP has increased 38 per cent while its Index of Wellbeing has only increased 9.9 per cent.

A less-used indicator is the *Happy Planet Index*, which measures sustainable well-being by dividing the multiplied cumulation of (a) life expectancy,

(b) experienced well-being times, and (c) outcomes by the country's ecological footprint. China and India used *Green GDP*, which monetizes environmental damage, which does not translate to sustainable practices as it simply measures costs. And at a more local level, the *Thriving Places Index*, partially based on Kate Raworth's donut model (Raworth 2017), blends 11 objectives and 14 subjective indicators.

These broader tools for redefining success are important to recommending how governments should approach their policy developments for 'progress'. However, individuals also need to redefine success, which is difficult. In a case study of Makers in Prince Edward Island, outcomes demonstrated that being embedded in a community, having more family time, and participating in self-esteem bolstering activities helped them redefine success in life (Kish 2018). Most of the economic applications that could help support these approaches for redefining are the more typical ecological economic approaches, including the use of these alternative indicators, the four-day work week, income capping, encouraging local currencies, and creating spaces for gifting, bartering, and trading (i.e.: swap shops, sharing economy, peer-to-peer selling platforms).

Conclusion

We are not living in a time of scarcity; we live in a time of great abundance coupled with inequality. There is no reason why work in the household should not count towards a country's growing success. A parent who chooses to stay home with their children contributes equally as much as a parent who decides to work outside of the home. GDP does not make this differentiation. GDP must not be the overall measurement of success as it is directly connected to growth economics. Instead, another indicator, such as the Genuine Progress Indicator, should be widely adopted and used as a marker for national success. Only then, can 'growth' be considered a good thing when it is the growth of happiness, well-being, health, education, leisure, and equity.

While Millennials and Gen Z are some of the most nervous and anxious people, they are also the most educated, culturally diverse, progressive, creative, and interdisciplinary generation that has ever existed (Parker and Igielnik 2020). So, perhaps they are the best-equipped group of people to navigate an uncertain future but can only do so if action is taken now against blatant disregard for planetary and social well-being. The SDGs could include targets to help set these generations up for greater success in the future, including:

- 1 Advance limitations in inequality through minimum incomes funded partly through eco-taxation and linked to social participation. Participation could include relatively trivial contributions to civil society (voting, jury service) but also local and national (military and civil) service obligations sustained over a lifetime.
- 2 Change the banking system to a 100 per cent reserve system – every dollar lent is a dollar saved by someone else.

- 3 Reduce working hours for all through shorter work weeks, more seasonal and part-time opportunities with health benefits, and more local leisure activities. This helps prioritize full and meaningful employment rather than growth.
- 4 Implement the Genuine Progress Indicator (or other alternative indicators) as the primary measure of national success.
- 5 Targets for libertarian freedoms for households and communities to use their existing means of production (backyard, kitchen, garage, portable stove) to produce goods and services with minimal interference from the state.
- 6 Tax and regulation scaled to size of enterprise and geographical scope – rewarding localism and place-centeredness.
- 7 Subsidiarity: prioritizing local over national trade and commerce, and national over global trade and commerce.

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8 Wicked dilemmas of growth and poverty

A case study of agroecology

SDG 1: End poverty in all its forms everywhere

SDG 2: End hunger, achieve food security, and improved nutrition and promote sustainable agriculture

SDG 6: Ensure availability and sustainable management of water and sanitation for all

In 2018, 26.4 per cent of the world population lived with food insecurity and malnutrition stunted 21.3 per cent of all children while 4.2 billion people lack safe sanitation, 2.2 billion lack safe drinking water, and 3 billion people were without basic handwashing facilities in their home (United Nations and Department of Economic and Social Affairs 2020). COVID-19 has further exacerbated the issues pushing more than 71 million people into poverty, with young workers now twice as likely to be living in extreme poverty (United Nations & Department of Economic and Social Affairs 2020).

To critics, this presents a compelling picture of continuing wealth and inequality. From another perspective, the same figures testify to an enormous and ongoing success story. This case has been presented most cogently by Steven Pinker in *Enlightenment Now* (2018). Characterizing capitalist modernization over the last two centuries as ‘The Great Escape’, Pinker argues that the primary metric of concern must be absolute wealth, measured by the Great World Product. Setting aside reservations about what such metrics actually capture (see Chapter 7), Pinker’s point is valid.

The story of the growth of prosperity in human history depicted [in date for increase in Gross World Product] is close to: nothing ... Nothing... nothing ... (repeat for thousand years) ... boom! [Global wealth has, repeatedly doubled and tripled] ... If the pie we were dividing in 1700 was baked in a standard nine-inch pan, then the one that we have today would be more than ten feet in diameter.

(2017: 80)

Putting aside increases in purchasing power, Pinker also points to the impact of technology on the material quality of life and experience of poverty. He argues that the flow of new technologies (water pumps, sanitary equipment, cell phones, engines) creates forms of material well-being simply unavailable in previous centuries. The British Empire became the first in history to abolish slavery throughout most of the world, partly because of a particular set of ideas and values but also in the wake of the opportunity created by fossil fuels and engines. Compelled labour became, for the first time, dispensable for the civilization. Simultaneously, plunging prices made technologies accessible to the widening strata of consumers. This effect, which Pinker calls ‘consumer surplus’ (81), confounds the economist’s notion of a standard basket of goods and speaks to an inexorable qualitative improvement in material well-being that is not captured by relative or absolute wealth. In addition to science and technical innovation, Pinker identifies the drivers of this enormous increase in wealth, including the following:

- *Institutions*: efficient price-setting markets, joint-stock companies, corporations, patent laws, property rights, and contract law, the monopoly of violence and the replacement of intra-elite cooperative exploitation in the form of fiefdoms, turfs, franchises, and charters (legally sanctioned extortion) for open, faceless, and impersonal exchange.
- *Values*: a liberal bourgeois virtue (McCloskey and Carden 2020) centring on individualism and the Judeo-Christian image of the Imago Dei (the sanctity and dignity of individuals created in the image of God) combined with a pragmatic emphasis on human happiness and satisfaction.

In the twentieth century, the ‘Great Escape’ that started in seventeenth-century England, became the ‘Great Convergence’, as hundreds of millions of people in Europe, and then the Global South escaped the grinding poverty that has been the default situation of humanity for ten thousand years. Since 1995 growth rates for one-third of the 109 developing countries have seen a doubling of wealth every 18 years, and another 40 countries every 35 years (Pinker 2018, pp. 85–86). Pinker argues that we can see the eradication of extreme poverty and the world becoming middle class given these trends. The number of people in the working middle class tripled between 1991 and 2015, now making up nearly half the workforce – up from 18 per cent in 1991 (United Nations Department of Economic and Social Affairs 2015, p. 4).

An important second strand in Pinker’s argument relates to inequality. Understandably, it is usually taken as read that inequality (relative poverty) is a bad thing in terms of what it does in entrenching absolute poverty and subjective experience of unhappiness and inequity. The first thing to note is that although for most of human history as hunter-gathers, face-to-face band society was egalitarian, the transition to agriculture entailed inequality almost as a mathematical certainty; and this has been the default situation of humanity for the last ten millennia. However, as Pinker argues, inequality is

not the same as poverty, which is to say, it is not a fundamental dimension of human flourishing, and in this regard, pales into insignificance next to wealth (Pinker 2018, p. 119). Moreover, there is significant evidence that, paradoxically, some degree of inequality may be strongly associated with greater psychological happiness (Kelley and Evans 2016) – a counter-intuitive finding that the researchers argued was linked to the human predisposition to hope (a future orientation) and the value attached to social mobility. At the same time, recent studies confirm that narratives about the causes of inequality have much more psychological traction than those about the existence of inequality (Starmans, Sheskin, and Bloom 2017). Cross-culturally, people care much more about perceived fairness than inequality *per se*. None of this is to say that the extreme gap in wealth accumulation in the United States or other Western countries is ethical or consistent with a post-growth future. The existence of billionaires may raise ethical problems this is a wholly separate issue of extreme inequality versus some levels of inequality. Furthermore, while poverty has undoubtedly improved, many still live in suboptimal conditions without access to basic necessities, and there is still a great deal more to do to ensure all people have adequate well-being; we do not intend to downplay this reality.

Our question is whether the progress that, has lessened the impact and severity of poverty, can continue. Pinker, and by extension those economists pushing the case for sustainable growth and ecological modernization at the UN, make the unwarranted assumption that the pattern of growth that *has* lifted billions out of poverty *can* continue indefinitely. Even setting aside the prospect of ecological-economic collapse intimated by Meadows et al. and reiterated by dozens of studies (Barnosky et al. 2012; Turner 2008), it seems likely that the uplifting tide of the great convergence may be reaching the point of diminishing returns. The UN's SDG target of poverty elimination by 2030 certainly seems unlikely to be met. Hundreds of millions of people remain in extreme poverty, and as Pinker acknowledges, the remaining pockets of poverty will be the hardest to eliminate. However, for Pinker and other limits-sceptics (Blomqvist et al. 2013; Blomqvist, Nordhaus, and Shellenberger 2012; Lomborg 2001; Shellenberger and Nordhaus 2009) the lesson of this success story is clear. Governments should continue to do what works.

Unfortunately, the evidence *is* stacking up that what has worked is unlikely to work in the future. The SDGs were initially designed to help lift countries and the Global South out of extreme poverty, hunger, and other social thresholds for well-being. SDGs 1, 2, and 6 are essential for basic minimum well-being. At the same time, biophysical limits are real (Rockstrom et al. 2009) and the growth-based processes that lifted the Global North and large swathes of the Global South out of poverty cannot continue indefinitely.

In this chapter, we argue that, in an era of limits, the new balance between State–Market and Livelihood will unfold differently in the West and more developed areas of the South, than those that have yet to cross the threshold of significant poverty elimination. The reorientation of Western economies will have significant impacts on the South – in diverse ways, including global trade

and manufacturing patterns, market availability, and income transfers from the exodus of educated overseas workers. This new political economy poses significant threats to the existing social and economic order in the South. Reduced trade and the contraction of markets will create unemployment and reduce the flow of fiscal transfers from already stretched developmental states. On the other hand, a more regional focus for the expansion of price-setting markets, coupled with the retention of skilled labour and more educated /motivated members of the workforce, will equally create a stimulus for national and regional development (in areas like the Horn of Africa), enhancing the capacity of regional hubs.

The partial re-regionalization and localization of the economy are unlikely completely to undo the global integration of the last century. Nor would this be desirable. It certainly would reduce economic growth, probably more in the North than the South – and as such represents a relatively more significant constraint on the advanced countries of the West, if not the material process of global redistribution demanded by radicals. On the other hand, *any* diminution of growth presents a significant and material threat to the poorest families and communities, as with the stark impact of COVID-19 on global poverty. This is an unavoidable reality – and the reason that limits to growth has proved such a hard sell in over the last 50 years.

Unfortunately, the progress outlined by Pinker is inextricably tied to unsustainable biophysical impacts. O'Neill et al. (2015), for instance, have demonstrated that countries that have met all of the SDG social progress thresholds are also the ones that have exceeded all of the ecological thresholds. Collectively, we have no alternative but to find a better way to meet social thresholds without passing ecological thresholds.

Poverty exacerbates the ecological crisis and is a multidimensional issue (Sharma et al. 2020). The politics of poverty and health were very apparent during the 2020 pandemic. Countries such as India were unable to institute widespread lockdown measures and had few healthcare facilities for testing citizens, and even as citizens were tested, there was little capacity to respond sufficiently, further diminished by 'dysfunctional federalism' (Choutagunta, Manish, and Rajagopalan 2021; Madkaikar, Gupta, Yadav, and Bargir 2021). This is one example of poverty's multidimensional outcomes, which is increasingly important as the future holds more significant uncertainty and other inevitable crises. Sharma et al. (2020) argue that a relational approach to poverty and healthcare is far better than functional approaches and continues to be marginalized in policy discourses. Relational approaches generally look beyond causal elements in a system and instead look at the emergent complexity and the ways in which interacting parts create essential relationships (see Zywert Chapter 9).

Such a view relies and focuses on the lived experiences of those in poverty. It helps to highlight alternatives to a good life by focusing on individuals' agency within particular settings. Sharma et al. also argue that a relational approach helps to avoid teleological assumption that capitalist modernization along the axis of Market–State (see Chapter 3) is the only possible trajectory

for development. Relational approaches also include a greater emphasis on micro-processes of inclusion and exclusion within communities. During the early stages of the COVID-19 pandemic, those who were able to afford to hoard essential items not only enhanced their long-term mental well-being and limited their need to expose themselves more frequently later on, they also denied others of that privilege by hoarding all available goods. The Livelihood focus on embedded markets and the consolidation of social capital within place-bound communities would attenuate the propensity for selfish individualism in such circumstances.

Other things being equal, national catch-up strategies of the kind celebrated by Pinker are likely to produce the same kind of embedded predispositions to growth evident in the advanced economies of the Organisation for Economic Co-operation and Development (OECD), including more recent entrants such as China. The staggering growth of these economies was inextricably tied up with an exodus from the countryside, urbanization, the capitalist modernization of high-yielding agriculture and the psycho-social pattern of individualization associated with social and spatial mobility and the rapid extension of the division of labour. As extensively outlined in Chapters 1 through 5, the transition to a modern economy has always been predicated on the erosion of extended family and community and the emergence of compensating state and state-sanctioned institutions. The State–Market oversaw the commodification and rationalization of social welfare and security functions previously secured through membership of place-bound, familial and occupational communities. Previously we have discussed this transformation in terms of Elias’s concept of ‘survival units’. Liberal-democratic norms depend on precisely this detachment of individual-citizens from the relational lattice of clan society (Weiner 2013). Nevertheless, it was not the case this transition necessarily required the emergence of State-centric institutions of welfare and social insurance to balance the dynamic mobility of the Market. The history of the welfare state in both the UK and Germany shows very clearly the extent to which political choices, culminating in the mobilization of both world wars, saw the labour movement in both countries advocate for top-down state interventions, bypassing a plethora of bottom-up, community-generated forms of self-organization (Friendly Societies, Guilds, Txoko [Basque cooking clubs] Allotment Societies) – mechanisms that could be interpreted as prefigurative, modern instances of re-embedding and societal protection through Livelihood (Quilley 2012).

This shift from relational and self-organized community and familial survival units to state-organized, functional approaches to managing individuals were simultaneously both the condition for taken-for-granted modern conceptions of individual freedom and choice and a framework for enormous constraints – both in terms of the power of markets and the capacity and imperative for state control. The very conception of a rational, choice-making individual self was a function of the social and spatial mobility of the self-regulating market economy (Beck and Beck-Gernsheim 2002; Giddens 1990). Relationships between energy, price-setting markets, individualism, and rights create a series

of wicked dilemmas. Whereas previously, community and family took a relational approach to prioritizing the well-being of the individual, this has been displaced by functional, rights- or market-based entitlements in the context of modernity. While these transformations have led to significant advances in the overall standard of living, this is in a context in which individuals rely on these complex systems instead of one another.

- i Can highly individuated modern societies with elaborate State–Market systems allow recovering Livelihood domains to take some of the strain of care, public service, and infrastructure without compromising without compromising the liberal–democratic values and institutions
- ii Can developing societies expand and modify Livelihood based forms of economy and society (e.g. relationally embedded markets; familial, clan-, and community-based reciprocity and care) without warping or jeopardizing the simultaneous enhancement of the State–Market as well as the liberal–individualist norms and institutions necessary for efficient economies, civil rights, and functioning democracy?
- iii In both cases, how might the Livelihood economy operate alongside the mainstream economy without undermining and compromising it? As Pinker (2018, pp. 81–86) points out, it was precisely the separation of open market exchange from embedded clientelist networks that allowed the English economy to prosper and for the liberal–democratic norms to take root.

Food systems

The existing SDGs invariably use state-funded or corporate-funded infrastructure to replace community and relational structures of support and well-being, and livelihood. The SDG's reliance on bureaucratic and functional relationships is nowhere better exemplified than in their approach to food systems. The SDGs support systems that both exacerbate inequality and the wholesale movements of peasants away from the land and into cities and a transition from small-scale farming to large-scale agribusiness farming. However, at the same time, pace Pinker, other things being equal (which they are not), the same process of transformation can reasonably be linked with increasing national wealth and historically unprecedented decrease in absolute poverty. In the absence of biophysical limits, the ecological–modernization frame of the SDGs would be both reasonable and probably, in the end, successful. Given that such limits do increasingly constrain future developments, where does that leave UN strategy vis-a-vis sustainable food systems?

Currently, the emphasis is on the construction of food systems that alleviate poverty through food security. However, the SDGs' approach to agriculture is at the same time embedded within a neoliberal approach to development that focuses on capital investment, free trade, market integration, and comparative advantage (Spann 2017). This framework is predicated on the idea that

small-scale and smallholder farmers and landowners, and food producers are barriers to development unless they become integrated into the larger global agricultural value chain. In 2018 agriculture and food security regained focus as a central element of successful development in the World Development Report (WDR). The strategy championed by the WDR was to provide rural and smallholder farmers with a pathway out of a bleak future of poverty and deprivation. However, it also sought to remove any competitive advantage for small farming competing against large-scale agribusiness. The farmers and smallholders ended up 'leaving poverty' because they either lost their farms and moved into urban centres or, ended up as free-wage labourers working for larger enterprises. In this way, the SDGs and the World Development Bank strongly support capitalist modernization (the State–Market) in what amounts to a new form of enclosure.

In its strategic thinking, the World Bank tends to position small-scale farmers as either eager entrepreneurs waiting on the sidelines of capitalism for their chance at market success, or as individuals who would be better off working for someone else rather than governing their own land (Akram-Lodhi 2008). Echoing all the tropes of twentieth-century modernization theory (Rostow 1959), subsistence in the domain of Livelihood is construed as backward and a sign of failure.

As explored extensively above, this rural exodus and the consequent urbanization process is the central motor that turns peasants into citizens (Weber 1976). Economic considerations aside, the formation of modern nation-states depends greatly on the coercive integration and absorption of local cultures, languages, customs, and communities into a dominant 'high culture'. The people thus 'emancipated', whether by proclamation as in Russia in 1861 or by the tides of urban migration that have dominated Third World development since World War II, provide the reservoir of *rational, transacting, and individual* workers, consumers, investors, and citizens – all necessary prerequisites for the functioning of the economy, polity, and legal system (we expand on this idea in Chapter 11).

This development model prioritizes productivity and commodity values disregarding the existing or necessary food diversity for local populations in favour of maximum integration into global markets. Reflecting on this, Spann argues that the SDGs' framing of sustainability is closely aligned with the ongoing success and interests of agribusinesses. Although the SDGs include a brief nod to alternatives such as agroecology, this is entirely unviable against the model meant to benefit agribusiness in the interests of growth. In the formulation of these goals, agribusiness advocacy groups took part in numerous transnational trips to meet high-powered political actors, all of whom are inaccessible to local farmers. Furthermore, based on these contacts were able to submit detailed recommendations. Much more fragmented and without great institutional resources, subsistence farmers and proponents of much more local forms of development had much less opportunity to participate. While we do not take a particular stance on organic versus non-organic fertilizer use (there are strong arguments on both sides), we do take a significant issue

with agribusiness having greater access, power, and control over the policy process than the very communities impacted by the SDGs. These development strategies have engendered dietary simplification, run farmers off their land, promoted intensive monocropping, and further accumulated wealth among the wealthy's top percentage rather than distributing success across a larger playing field. The goals are meant to support food security and nutrition through complex coordination through the market with better distribution. Instead, they facilitate the wholesale reorganization of agriculture in ways predicated on continuing growth that itself is likely to prove impossible to sustain. Any inflection away towards a systemic economic contraction in the global economy is likely to leave many of these communities looking back wistfully at more resilient patterns of traditional subsistence in the Livelihood domain that were left behind at the behest of the UN Sustainable Development Commission.

There is certainly an enormous benefit in enhancing trade and doubling exports, which is another target of the SDGs. However, these globally integrated systems are energy-intensive, at a time when food diversity and nutrition could be achieved at a much smaller and localized scale. The opportunity costs, in terms of foregone exports and trade, are undeniable. However, these systems have often come at a cost. Spann uses the example of Guatemala. One of the most successful exporters of food, the country still has great problems with malnutrition. But in terms of the SDGs, Guatemala is a model client. The SDGs promote exactly the priority of exports over local food production, monocropping, and single crop yields designed for more efficient global distribution. From the perspective of Livelihood and with a view to resilience, the SDGs should be supporting relational and community-oriented approaches to addressing poverty and food security. While much more contextually complex and complicated, the SDGs need to support the community agency and needs. These are going to be contextually independent, and that makes it difficult to provide specifics or to produce one-size-fits-all models. However, a general theoretical underpinning can provide a political framework to such an approach and some examples of alternative living systems, institutional approaches, and support of different kinds of macro-regulatory systems such as agroecology, which we explore later in this chapter.

In the opening chapters, we suggested that, in the context of biophysical limits to growth, the most appropriate development path would involve the partial the re-embedding of economic life, the expansion of Livelihood and a reduction in the size, reach, and authority of central state interventions in the local economy. In contrast, many of the existing SDGs suggest targets that increase state regulation and state regulatory systems rather than allowing individuals, communities, and welfare to internalize regulation itself – to allow for complexity to self-organize. We suggest that larger nation-states should allow for a re-emergence of local markets that are visible and taxable for the benefit of their immediate community and less visible and non-taxable for essential benefits such as growing food and childcare. Regulation of the corporate economy should be matched by deregulation of household and community

producers. Clearly, there is a need for larger global systems. The mainstream economy cannot just disappear, even if, over the next century, limits begin to induce retrenchment and contraction. However, to enhance the domain of Livelihood, multinational corporations and agribusinesses should face significant hurdles in succeeding in a country where the SDGs are taken seriously. This bifocal approach would involve active and unregulated local markets alongside more strictly regulated global markets. To salvage a more balanced relationship between the State–Market and Livelihood, we would suggest promoting and empowering the kind of bootstrapping, do it yourself (DIY), handicraft, and local-food activities that flourish in many informal shanty town economies together with a much more communitarian and family-based approach to poverty alleviation and care. One consequence of a re-emergence of Livelihood and a more localized and circular economy in the Global North, would be a reduction in the outsourcing of undesirable work to low-wage labour in the South. The immediate impact of such a transition would be negative, with a loss of employment and investment. In an era of limits, the challenge will be to reconnect a more local and regional formal economy to a revitalized communitarian, livelihood economy.

Alternative system case study: Agroecology

Agroecology is both a scientific discipline and a movement towards new agricultural practices. Since the 1960s, environmental opposition towards industrialized agriculture has spurred protests against agribusiness, animal rights, pesticide use, and social injustices in rural development. In the West, many of these protests are deeply embedded within a Romantic/affective attachment to landscape as a marker of organic communities and ‘taskscape’ of the past (e.g. hedges and hedge-laying in England). At the same time, sociologically the individual and groups are unconsciously but deeply constructed by the assumptions and values of Enlightenment liberalism – the very culture that dissolved such organic ‘*gemeinschaftlich*’ communities. This Janus tendency to face in both directions is evident also in the orientation of agroecology in the context of development. While there is little that can be generalized regarding food studies, given the variety of contextual differences, there is a general sense that movement toward a local bioregional and seasonal diet consisting of mainly whole foods is best for one’s health and the environment. However, the tension between any such terroir localism and liberal-democratic norms and values is rarely recognized nor articulated.

Agroecology is predicated on the proposition that, by foregrounding the interactions between food outputs, animals, other planets, humans, and the environment, agriculture can contribute to ecological restoration and conservation (Dalgaard, Hutchings, and Porter 2003). It is the ‘integrative study of the ecology of the entire food system, encompassing ecological, economic and social dimensions’ (Francis et al. 2003, p. 100). The specific use of the term varies. In France, agroecology is primarily understood as a farming practice,

in Germany and the United States as a scientific discipline, and in Brazil as an agricultural practice movement (Wezel et al. 2009).

In this chapter, we refer to agroecology in all forms. Sustainability researchers and the SDG targets need to enhance agroecology discourse as a scientific discipline, agricultural practice, and social movement. Agroecology production practices represent the co-evolution between humans and nature (Francis et al. 2003). Agroecologists look for local biophysical clues as to what kinds of practices would enhance food production and human–nature well-being. In doing so, agroecology practices a functional restoration between humans and local ecosystems. It also re-establishes a relationship between food producers and consumers. Modern food production chains are predicated on the detachment of individuals from the source of their food. Food is produced in industrial settings that are unappealing to consumers but reduce the cost of production and shipment.

On all continents, modern consumers have proved very willing to disassociate from the industrial and quite often repugnant reality of food production to enjoy lower costs – especially with growing income inequalities. That the global food system produces more than enough food for people worldwide should be recognized as a massive achievement, given the level of endemic famine in the middle of the last century. Even as it has reduced the prevalence of egregious malnutrition, the combined system of agricultural production, food processing, and consumer food culture is failing, even in the OECD countries, to put healthy food on the tables of most households. Simultaneously, the relative surfeit of food (by any historical standards) does not take away from rising global inequities concerning access to nutrition and food security.

Agroecology helps to understand better the relationships between these inequalities and the global food system. Food production systems cannot focus on product production efficiency, and it needs to focus on practical and reliable food security for everyone. This may reduce access to some foods and crops that are not local, such as coffee and quinoa from Southern regions exported in vast quantities to Northern regions incapable of growing these crops. Not only does this support monoculture, but the Global North takeover of crops is demonstrated to have cascading impacts across systems, leading to further inequalities and detriments to those in the Global South (Alandia, Rodriguez, Jacobsen, Bazile, and Condori 2020; Kerssen 2015).

Daniel Janzen (1973) was one of the first ecologists to formally incorporate an ecosystem view of agriculture. He argued that agroecosystems should be grounded in local knowledge and designed to meet local needs before responding to export demands. This was one of the first major challenges to the globalized green revolution, which has shifted the discussion of agriculture firmly within market and market demands.

Gliessman (2013) charts out the history of agriculture in Mexico, demonstrating the role of agroecology in the roots of resistance in the country. During the green revolution, Mexican agriculture embraced new and improved high-yielding mono-crops of corn and wheat. In doing so, ‘a food system that was

thousands of years old was suddenly being displaced by what is known today as a high external input, fossil fuel-based, export-oriented, monoculture cropping system' (Gliessman 2013, p. 24). Low energy, diverse, and locally adapted farms with traditional crop rotations were displaced for better integration in the global trade of food. As a result, Mexico, once self-sufficient, became a net importer of corn by 1971. Gliessman recounts the role of agronomist and ethnobotanist Xolocotzi in bringing early agroecology to Mexico.

Gliessman recounts that Efraim Hernández Xolocotzi argued three factors influence the co-evolution of agroecosystems: ecological, socio-economic, and technological. The green revolution, he argued, ignored the ecological factor, creating an overall imbalance. Continued use of the monocropping methods – such as clear-cutting practices sponsored by the International Development Bank, to create a massive agribusiness field system – came up against growing local acknowledgement that the revolution in farming was not helping local citizens. Food prices began to rise, and farmers had no autonomy over what was planted on their land and were no longer eating the food they produced. It became more common to hire outside workers to help on these massive farms, further eliminating local agroecological knowledge. In the 1980s, 'intensive participatory surveys and research projects began to be carried out that demonstrated the strong combination of agroecological and cultural knowledge' (Gliessman 2013, p. 27).

The reconnection of local and cultural knowledge to agriculture was quickly linked with ecological sustainability and reduced inequality for rural farmers. Now, one of the keys to scalable implementation of agroecology on a broader scale is appropriate and favourable policies (Cacho et al. 2018). However, the SDGs do not promote movement to localized agroecology but instead hold up international and globalized food trade systems that are unsustainable, create inequality, and have not demonstrated success of equitable distribution of far more goods than what was previously produced. Such systems also uphold systems of unequal exchange, termed external inequality (Molina 2013). Despite significant growth in scale and profit margins of global agribusinesses and multinational food companies, the farming sector's profitability is declining. From 1900 to 1998, farming revenue dropped 62 per cent, spurring more buy-in to crop intensification and monocropping to benefit from the system (Molina 2013). This makes farmers and local producers dependent on global markets and the 'agro-industrial complex as a whole' (Molina 2013, p. 48)

Agroecology provides a holistic approach to agriculture that addresses power and political imbalance issues while empowering relational and local knowledge within food systems. However, agroecology implementation requires systemic change and significant risk-taking by farmers who may already be disadvantaged. As with most issues, multiple approaches to change are a more resilient approach to changing the overall system through smaller changes that combine into a larger movement. Farmers' markets are another option for increasing local food production and national food sovereignty.

One obvious difficulty that arises when a global governance institution engages with a highly dispersed, contextual, and locally variable movement, relates to the nature of the appropriate metrics. How would SDGs capture the health and vitality of Livelihood as it pertains to food systems, resilience, social capital formation, informal exchange and so forth? One interesting example is relates to *food assemblies*, which bring the culture of local production and farmer support associated with farmers markets, into the online world. In north-west of Edinburgh lies the small Scottish town of Stirling. Once principally a market town, agriculture still plays a large role in the region. In 2016 the Stirling Food Assembly collaborated with over 40 local farmers, growers, and food makers to sell nearly 5,000 baskets of local produce to over 500 households in the area. This is insignificant in comparison with the turnover of the local supermarkets. Nevertheless, it is highly significant for the small number of farmers involved. The Food Assembly movement began with motivation to create a more equitable food system for the region, support local food producers, and connect people back to the land and food. As a result, farmers and food producers received a fairer price for their food and people were able to see the hard work and real lives that their food consumption impacted. The assembly grew to have over 2,000 members and the initiative contributed around £115,000 to the local economy of Stirling while proactively supporting more sustainable and healthier food options at affordable costs.

Food Assemblies, initially founded in France in 2010, represent a unique and locally sensitive approach for dealing with food security while interrupting multinational corporation's stronghold over citizens' choices and health. A systemic target for reducing hunger globally would be counting the number of assemblies in a region and calculating the amount of food produced and delivered locally. Stuart Brand (2010) observed a decade ago the extent to which mobile telephony was creating the possibility for rural development in the Global South to leap-frog the pattern of grid-dependent development. Recent research on the impact of cell phones on rural food systems confirms this insight and suggests a growing convergence and possible transfer between local development and Livelihood innovations in the North and the South (Aker and Fafchamps 2015; Khan et al. 2009; Piabuo et al. 2020; Sikundla, Mushunje, and Akinyemi 2018).

Nonetheless, North or South, both agroecology and farmers markets have a problem with scalability. Agroecological research is generally conducted on small spatial scales and because of the gap between localized field research and scalability to larger systems, agroecology is often dismissed by policymakers (Dalgaard et al. 2003). It seems most solutions-oriented innovations such as food assemblies to improve socioecological well-being in relation to food systems are localized and small. The existing SDGs call for more globalized and large-scale solutions, making most of these creative interventions in local food systems less viable. From the perspective of Livelihood, the SDGs should implement new targets that help to enhance local autonomy and food sovereignty, such as measuring the number of food assemblies, farmers markets, producer marketing

cooperatives, basic income schemes for farmers, and incentive systems to circulate food locally. While there is clearly a need for global trade in many food items, the monocultural practices driven by the unfettered trade undermine food sovereignty.

Alternative targets for SDGs

SDGs should seek to balance the State–Market and the transactional, capital-led orientation towards a highly productive, market-driven global food system. Local and regional Livelihood systems in which food production, processing, and retailing are embedded within processes of social capital formation, household subsistence, informal care, and security networks. This implies facilitating the re-emergence of Livelihood economy in tandem with the State–Market in the North and preserving and renewal of existing forms of traditional communitarian economy. Metrics could include:

- The number of local food networks, farmers assemblies, farmers markets, producer cooperatives
- The proportion of local consumption produced and processed within 100 miles
- The number of people working on the land with the aim of maintaining a much larger rural population than has been normalized in the West
- The retention of rural skills with respect to any food /product processing (cheese making, brewing, leather tanning, slaughter and butchery, milling and baking), land management (hedge-laying, dredging, fencing, carpentry, iron-working, horse-shoeing, coppicing, reed-bed management, and so on)
- A graded spectrum of regulation and taxation that is essentially permissive and libertarian for household-scale/farm gate activities, increasingly interventionist and directive with the scale of the enterprise. The intention would be to shift the unit cost of regulation and tax from the domain of Livelihood to the actors operating in the disembedded, price-setting context of global markets
- The prevalence of self-organized, Internet-facilitated community and household home-schooling
- The implementation of taxes to positively discourage certain kinds of trade and the intrusion of branded and processed commodities into local markets – especially heavy liquids that make little ecological sense as global commodities (soft drinks, beer, breakfast cereals, bread). Such measures must obviously strike a balance between the real benefits of comparative advantage and free trade and the less fungible values that derive from fragile, local embedded cultures. Brewing is perhaps the clearest example of a product that would benefit from the global extension of the French approach to Appellation d'origine contrôlée. Large breweries trade on faux global branding. They deliver vast quantities of a heavy product over large distances at great ecological cost. Economies of scale and corporate

leverage (tax revenues to the state) allow breweries to outcompete micro-breweries; all this despite the fact that beer, cider, and spirits could easily be produced locally, using local ingredients in every village, creating thousands of jobs, and circulating money in the local economy.

- Local and municipal bylaws that are permissive of back-yard animal husbandry, slaughter and butchery.

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9 Planetary health and well-being from a limits perspective

Katharine Zywert

SDG 3: Ensure healthy lives and promote well-being for all at all ages

Introduction

The targets associated with SDG 3 – good health and well-being – aim to improve many of the most crucial leverage points for human population health: maternal and infant health; epidemics of neglected diseases; non-communicable diseases and mental health; substance abuse; road traffic accidents; access to reproductive healthcare services; universal health coverage; hazardous chemicals and pollution; tobacco control; affordable essential medicines and vaccines; health financing and workforce development in low-income nations; and risk reduction and management of global and national health risks (UN, n.d.). However, SDG 3 is silent when it comes to planetary health. Omitting planetary health from consideration and action means that even if nations around the world managed to achieve all 13 targets associated with SDG 3, we would not ‘ensure healthy lives and promote well-being for all at all ages’ (UN, n.d.). Attending to planetary health is about recognizing the systemic connections between human-induced planetary ecological changes, human health outcomes, and the long-term resilience of complex human societies (Cole 2019; Horton et al. 2014). The planetary health movement prioritizes the health of future generations, whose well-being and survival are profoundly threatened unless our societies radically alter course (Frumkin 2020; Whitmee et al. 2015). Integrating planetary health into SDG 3 has the potential to significantly increase human health outcomes over the long term by ensuring that the actions taken between now and 2030 protect and regenerate the Earth’s essential biophysical processes, without which human health would be impossible to sustain. While some might argue that planetary health is subsumed within other SDGs such as SDG 13: Climate Action, adding a specific planetary health target to SDG 3 sends a clear message that human health cannot be separated from the health of the planet we call home. It also has cascading implications for the ways in which SDG 3 is pursued, such as the need to build health system resilience

for the transition toward a post-growth political economy and the importance of creating conditions for health to flourish across socio-ecological scales.

Human health is dependent on planetary health

The planetary health movement is a transdisciplinary field of research and grassroots action that seeks not only to understand, but to mitigate the most substantial risks to human health and civilization posed by human-induced ecological change (Horton et al. 2014). The perspective is rooted in the planetary boundaries framework, the concept of the Anthropocene, limits to growth, Gaia theory, and considerations of deep time (Cole 2019; see Chapter 2). It is also committed to equity and practical action (Engelman, Bongaarts, and Patterson 2020), giving planetary health strong values alignment with the SDG framework. Planetary health researchers emphasize the need to find win-win solutions that can enhance both human and planetary health (see Duff et al. 2020). A simple example is the extent to which improving human diets can simultaneously reduce the carbon costs associated with the food system while increasing nutrition and reducing healthcare costs from diet-related disease (Whitmee et al. 2015). Yet the field also takes a strong stance that such simple win-wins will not be enough. Planetary health cannot be achieved, researchers argue, without a society-wide ‘redefinition of prosperity’, alongside paradigmatic changes to the ways in which humans, especially those of us living in high-income contexts, consume resources and energy; grow our food; manufacture material goods; build and heat our homes; and care for our children, elders, and those among us who experience acute or chronic illnesses (Whitmee et al. 2015, p. 1974; Myers and Frumkin 2020).

The ecological disruptions created by human overshoot of the Earth’s carrying capacity have been found to ‘affect nearly every dimension of human health’ (Myers and Frumkin 2020, p. 7). For example, climate change increases the frequency of extreme weather events and natural disasters, reduces air quality, shifts patterns of infectious disease, influences human migration and conflict, reduces crop yields and nutrition, intensifies allergies, and exacerbates mental illness (Frumkin 2020; Field et al. 2020; WHO 2019). Exceeding the planetary boundary for biodiversity loss also affects human health in direct and indirect ways. For instance, complex relationships between pollinator species, pathogens, herbivores, carnivores, and primary producers uphold diverse ecosystem functions such as the ability of ecosystems to reduce air pollution and lower temperatures (WHO 2015; Aerts et al. 2018). Declining biodiversity can also increase infectious disease transmission and make infections more dangerous to humans by bringing species into contact in novel ways and by disrupting immunoregulation, a process that depends upon exposure to diverse antigens (Field et al. 2020).

Most profoundly, planetary ecological disruptions could push Earth systems out of stable Holocene conditions into an unknown future for which our species is neither adapted nor prepared. The Holocene, the geological time period in

which structurally complex human societies arose, was characterized by a stable climate, readily available freshwater, and favourable patterns of nutrient cycling within highly biodiverse ecosystems (Rockström et al. 2009; Steffen et al. 2015). The Holocene has been described as the state of the Earth system that is most well-suited to human flourishing, and evidence indicates that without human influence, the Earth would have remained in a stable, self-regulating Holocene state for many thousands of years (Rockström et al. 2009). Today, the Earth's climate, biosphere, oceans, atmosphere, and cryosphere already exhibit patterns that depart substantially from their Holocene states, leading scientists to propose that the Earth has transitioned into a new geological time period, the Anthropocene epoch (Zalasiewicz et al. 2019). The Anthropocene is the age of human impact. While the Anthropocene is entirely novel and unprecedented, it is exceedingly likely that permanent transitions away from Holocene conditions have negative long-term implications for human health and well-being (Rockström et al. 2009; Steffen et al. 2015).

Given that planetary health is ultimately the bedrock of human health, incorporating planetary health into SDG 3 may seem uncontroversial. Achieving planetary health by ensuring that we do not surpass any more planetary boundaries and by halting or reversing (where possible) trends related to the boundaries we have already transgressed would generate long-term, mutually reinforcing gains for human health and ecological sustainability. Moreover, many of the initiatives studied and/or developed by planetary health researchers and practitioners are already grounded in a sustainable development approach (see Duff et al. 2020). However, as noted above, achieving meaningful progress towards planetary health on a global scale would require human societies to move beyond our dependence on economic growth, especially as a strategy for securing health and well-being. SDG 3 embodies a paradox inherent to all the sustainable development goals: if sufficient absolute decoupling of economic growth from ecological destruction is impossible or at the very least extremely unlikely (Ward et al. 2016; Meadows et al. 2004; also see Chapter 2), pursuing health and well-being goals by generating economic growth unintentionally undermines the ecological foundations of health by contributing to planetary ecological change (see Whitmee et al. 2015). Moreover, as ecological crises intensify and the need to transition toward a post-growth political economy becomes increasingly urgent, health systems that are dependent upon growth will become even more vulnerable to political-economic crises, as we have already witnessed during the COVID-19 pandemic (Hensher and Zywert 2020; Kish et al. 2021).

Planetary health depends on a post-growth transition

There is no easy way around it: securing human and planetary health, both of which are necessary to create the conditions in which future generations can thrive, will require a political-economic transition away from growth toward a post-growth political economy. Disentangling the systems that uphold health

and well-being from their reliance on economic growth will not be simple. However, a range of studies suggest that positive human health outcomes can be maintained without growth, and that growth is ‘a dangerously inefficient strategy to increase well-being in a climate-constrained world’ (Fanning and O’Neill 2019, p. 818). Neoclassical economic thinking assumes that economic growth and human health and well-being are causally linked, an assumption that is also embedded within government policies and practices, as well as mainstream culture (Daly 2019; Büchs and Koch 2019; Fanning and O’Neill 2019). There is no denying that economic growth has lifted billions of people around the world out of poverty and enabled quality of life improvements related to housing, nutrition, and health infrastructures during the period of modernization (Borowy and Aillon 2017; Evison and Bickersteth 2020). However, studies of morbidity and mortality rates during times of economic contraction, including the Great Depression in the United States and Cuba’s Special Period, show that contrary to what one might expect, indicators like life expectancy and deaths from accidents and chronic diseases did not increase, but either stayed the same or in some cases fell (Granados and Roux 2009; Büchs and Koch 2019; Borowy and Aillon 2017). During the Great Depression, for example, population health improved; life expectancies rose and mortality rates dropped across racial groups, genders, and age cohorts between 1930 and 1933 (Granados and Roux 2009). Similar outcomes were observed when Cuba was cut off from access to fossil fuels and other imports in the early 1990s, forcing the population to drastically reduce their consumption, build infrastructures to meet their needs using only local resources, and shift from energy-intensive to labour-intensive production methods (Borowy 2013). During this time, infant and child mortality rates did not fall, but remained constant (Borowy 2013). Obesity rates decreased rapidly, and deaths from diabetes declined by 51 per cent while deaths from stroke declined by 35 per cent (Franco et al. 2007 as cited in Borowy 2013). Life expectancy increased, mostly as a result of fewer cardiovascular ailments, which account for a high proportion of non-communicable disease deaths (PAHO 1998 as cited in Borowy 2013). Periods of recession in general have also been shown to increase life expectancy and health outcomes, likely due to decreased air pollution from economic activities as well as lower rates of workplace and traffic accidents (Granados and Ionides 2017 as cited in Büchs and Koch 2019). There is also some evidence that during periods of growth, people become more socially isolated, with less time to devote to caring for and supporting people within one’s social network, a dynamic that negatively affects health (Granados and Roux 2009). These studies show that health outcomes may not be as tightly coupled to economic growth as one might assume, and that strategic action taken by governments, businesses, community organizations, and families could enable health to thrive even during the chaotic period of political-economic transition.

Yet while we may find that positive health outcomes as measured by indicators like life expectancy, infant and maternal mortality rates, and mortality rates from non-communicable diseases can be maintained in a context of

economic degrowth, subjective well-being – people’s perceptions of their own happiness and life satisfaction – may be more sensitive to the loss of economic growth. As a general trend, nations with higher average incomes continue to report higher levels of subjective well-being in national comparisons (Fritz and Koch 2016 and Koch et al. 2017 as cited in Büchs and Koch 2019; Fanning and O’Neill 2019). Also, when people’s capacity to consume is reduced (even modestly) as a result of economic hardship, their subjective well-being declines. This finding was confirmed during the 2008 financial crisis, with data from Greece, Egypt, Germany, the UK, Eastern Europe, and Asia displaying similar trends (Diener and Tay 2015, Mertens and Beblo 2016, Habibov and Afandi 2015 as cited in Büchs and Koch 2019). Researchers have called this effect ‘loss aversion’, a psychological phenomenon in which people find it challenging to adapt to losses but quickly get used to gains (Fanning and O’Neill 2019). Loss aversion helps to explain why declines in national GDP are correlated to reductions in subjective well-being, while GDP gains do not have a substantive positive impact on well-being (Fanning 2016 as cited in Büchs and Koch 2019; Fanning and O’Neill 2019). In an investigation of national data from 120 countries between 2005 and 2015, every country reported an increase in life expectancy. Also, a life expectancy of 75 in 2015 required 25 per cent less income and 35 per cent less carbon to attain and remained constant even if the economy stagnated or contracted. Subjective well-being, on the other hand, tended to fall in nations that experienced economic stagnation or contraction and higher inputs of income and carbon were required to achieve a life satisfaction rating of 6 out of 10 in 2015 than were required in 2005 (Fanning and O’Neill 2019).

These results are paradoxical and ‘wicked’ (see Chapter 5). They imply that it will likely be possible and perhaps not even particularly difficult to maintain the positive health gains associated with modernization in a post-growth political economy. However, the transition itself is likely to cause significant reductions in subjective well-being and happiness, which could in turn negatively affect health. If economic contraction is necessary to secure planetary health and planetary health is an indispensable condition for human health, achieving both will require the creation and scaling of strategies that offer opportunities to achieve positive health outcomes while reducing people’s reliance on consumption as a source of life satisfaction, status, meaning making, and identity creation (see Quilley and Zywert 2019; see Chapter 4).

Initiatives that create conditions for health to flourish across socio-ecological scales

Community- and place-based social innovations for health and well-being offer a range of viable approaches for generating such outcomes. Many of these initiatives operate within the domain of livelihood and are at least partially removed from formal markets and state-funded health and welfare systems. As such, they are potentially more resilient to processes of economic contraction (Quilley and Zywert 2019; also see Chapter 4). Many of these models also seek

to support health across socio-ecological scales or do so as a matter of course by incorporating ecologically regenerative behaviours or by lowering the ecological footprint of health systems (see Zywert 2017). Offering a prefigurative space of experimentation, these initiatives could rapidly expand in a context of political-economic contraction, as was seen, for instance, with the rise of mutual aid in the early months of the COVID-19 pandemic (see, Moscrop 2020; Covid-19 Mutual Aid UK 2020; Mair 2020). Below, three such examples are considered: the soil health movement, care farming, and family care for people with mental illness.

Soil health

The soil health movement views the soil as a leverage point for ecological resilience and human health. It offers an unexpected and remarkably local solution to ecological crises unfolding at a global scale: nurturing the health and well-being of living soil microbes to build planetary health from the ground up. The biodiversity that resides in the soil is ‘connected to all life’ (Wall et al. 2015, p. 74). It is an essential component of the Earth system, one that has been neglected and degraded by intensive, industrial agriculture (Pershouse 2016, 2017). Healthy soil enhances the resilience of the landscape to drought and flooding, regenerates the water cycle, sequesters atmospheric carbon, cools the land, and increases the nutrient content of plant crops (Wall et al. 2015; Pershouse 2016, 2017). As such, healthy soil is key to achieving strong public health outcomes, not only directly by improving nutrition, but indirectly by reducing the negative health effects of climate change and other ecological disruptions (Pershouse 2016). A healthy soil carbon sponge depends on the presence of living bacterial and fungal organisms. In its optimal state, the soil sponge is bound together by root hairs, the slimes and exudates of bacteria, and fungal hyphae. This aggregate, spongy structure enables the soil to perform essential functions in the landscape such as filtering water and providing nutrients to crops (Pershouse 2016, 2017). Soil health educator and author Didi Pershouse (2016) argues that the soil sponge is built by diligent, often overlooked work performed by nonhuman species. If we respect and support rather than undermine this work, we can help enable living systems to create a world more conducive to health across scales (Pershouse 2016, 2017, 2020).

The soil health movement aims to work with the self-organizing capacities of complex living systems to restore the soil’s indispensable planetary functions. There is strong historical evidence that soil loss has contributed significantly to the collapse of agricultural civilizations around the world (Field et al. 2020). The UN recently found that land degradation including soil loss negatively affects the well-being of 3.2 billion people (Scholes et al 2018 as cited in Field et al. 2020). Soil loss is part of a negative feedback loop in which climate change (e.g. extreme temperature and precipitation) disrupts soil biodiversity while land management approaches that prioritize intensive agriculture, urbanization, and deforestation further kill off soil microbes and otherwise reduce the organic

content of the soil. In turn, depleted soils lose their capacity to act as a carbon sink, perpetuating climate change (Field et al. 2020; Wall et al. 2015). As one of the most significant carbon sinks on the planet, increasing the health of the soil has significant implications for planetary health. Perhaps most intriguingly, soil health can be cultivated right in your own backyard. By adopting the ‘soil health principles’ (available at www.didipershouse.com/soil-health-principles), farmers can also dramatically lower rates of soil erosion, increase the resilience of their land, improve their yields, and enhance their economic prosperity (Pershouse 2016; Wall et al. 2015; Scholes et al 2018 and Sanchez 2002 as cited in Field et al. 2020).

Care farming

Care farming takes a multifunctional approach to agriculture, bringing together food production with health and social care. The model involves a farming family opening up their farm to people with disabilities, mental illnesses, or addictions. Sometimes particular therapeutic programmes are offered for diverse clients groups but more often, care farming invites participants to become valued members of the farmer’s team. Participants will plant, tend, and harvest crops, care for animals, muck out stalls, mend fences, and work in farm stores or restaurants. Care farms are working farms that integrate the skills and labour of people with diverse needs for health and care. It is by engaging in the meaningful activities of farm life that participants report increased social, mental, and physical health. Evaluation data demonstrates that care farming yields health benefits for diverse participant groups including youth with behavioural issues, people with learning disabilities, children with attention-deficit hyperactivity disorder (ADHD), people experiencing alcohol and drug addiction, adults with psychiatric illnesses including schizophrenia and personality disorders, and elders with dementia (Elings 2012, 2020; Hassink et al. 2014, 2020). Adults living with long-term mental illnesses and addictions, for instance, report feeling more useful, healthier, and more satisfied with their lives after spending time working on a care farm (Elings 2012). They also report feeling more productive, having higher self-esteem, and engaging in more pro-social behaviours (Elings 2012).

The care farming movement is growing rapidly across Europe and North America but has become particularly developed in the Netherlands, which is home to over 1,250 care farms (Hassink et al. 2020). Care farming holds significant potential to improve health and well-being at diverse socio-ecological scales, enhancing not only individual health, but community cohesion, local economic vitality, and planetary health. Mental and physical health, for instance, are improved when people spend time outside working with their hands and contributing to the provision of basic community needs (Elings 2012, 2020). By creating a new societal role for small farms, they help to reintegrate farmers into community life and create new sources of revenue (Elings 2020; Hassink et al. 2020). Care farms can also build more inclusive communities that value the skills and talents of people experiencing serious mental health issues and

disabilities (Elings, personal communication). Participants at care farms often continue to work on the farm for many years, forming meaningful relationships with the farming family and other participants, enhancing their social engagement and sense of belonging (Elings 2020). Because people on a care farm are in close contact with the soil, the model also encourages the expansion of organic methods and can contribute to regenerating local ecosystems by returning hand work to the landscape (van Elsen, Günther, and Pedroli 2006; Hassink et al. 2020). As a strategy with implications across scales, from individual human health to social and community resilience, local economic development, and planetary health, care farming has significant potential to become an important model in the transition to more local health systems that are less dependent on economic growth.

Family care for mental illness

The town of Geel in Belgium is home to a family care model for mental illness that has persisted for 700 years. In Geel, families take in ‘boarders’, people with mental illness who are treated not as patients, but as valued and contributing members of the family (Jay 2014; Goldstein and Godemont 2003; van Bilsen 2016). Boarders often live with their foster families for decades (the average length of stay in a household is 30 years); in many cases, care becomes intergenerational, with the children of the original foster parents accepting their boarder into their home as their parents age or pass on (Jay 2014; van Bilsen 2016). Geel offers a nonmedical, noninstitutional, community-based approach to mental health care. Families do not expect their boarders to follow any particular medical regimen or course of therapy. Historically, they were not even told the official diagnoses of their boarders, though this has begun to shift in recent decades. Boarders and foster families are supported by district nurses and teams of healthcare professionals including a general practitioner, psychiatrist, and social worker that they can call on as needed, 24 hours a day. They can also access professional care at the local psychiatric hospital, which oversees the foster care programme. However, in ordinary circumstances healthcare professionals do not interfere with or seek to direct the course of family life. Nurses offer regular check-ins to ensure that people are being looked after, that medications are being taken properly, and to mediate any conflicts. But for the most part, a ‘common sense’ approach to care prevails (van Bilsen 2016, p. 210).

The model has been shown to be extraordinarily effective, prioritizing dignity, the value of real relationships, and a family-oriented, community-rooted life. It is also cost effective and thus relevant to a world in which material and energetic resources are more constrained. Families are compensated by the state for caring for a boarder, receiving around €500/month. The cost of family foster care to the state is around one-sixth of the cost of a hospital stay and close to half the cost of other supportive living arrangements (Roosens and van de Walle 2007 as cited in Arnold 2015; Verbiest, Genes and Joosens 2014 as cited in van Bilsen 2016). Researchers have also found that as a result

of their full participation in community and family life, many boarders do not require medication, or require less than they did before entering the foster care system (van Bilsen 2016). Psychologist Marc Godemont, who worked in the programme for nearly three decades, attributes its success to: (1) the extent to which people accept that their boarders will have idiosyncratic behaviours and needs, (2) working to meet these needs through social rather than medical means, and (3) integrating boarders into family and community networks (Godemont 2006 as cited in van Bilsen 2016). The model finds new uses for existing community resources such as people's homes and their capacity to devote time and care to others (OPZ Geel staff member, personal communication). With the transition to a post-growth political economy, the model's comparatively light consumption of resources combined with its grounding in community resources and networks could have a lot to teach us about how to care for people with serious mental health issues in a more place-bound world. As the economic sphere shrinks, the domain of social reciprocity will grow, perhaps enough to compensate for more a more strategic, smaller health care sector (see Quilley and Zywert 2019).

Conclusion

The UN warns that the COVID-19 pandemic has substantially set back global progress on SDG 3 (UN, n.d.). Instead of falling, deaths of children under 5 are expected to increase by hundreds of thousands in 2020. Instead of ending epidemics of neglected diseases like malaria, deaths from malaria are expected to increase by 100 per cent in sub-Saharan Africa. Instead of expanding access to childhood vaccinations in developing countries, 70 countries are experiencing significant disruptions to their vaccination programmes (UN, n.d.). The landscape of global health is profoundly altered by the COVID-19 pandemic; many of the targets associated with SDG 3 may need to be refined. As part of this process, we must prioritize planetary health. Without securing planetary health, we cannot guarantee the health and well-being of future generations. The integrity of the Earth's self-regulating biophysical processes underpins all aspects of human health. Yet strategies that aim to increase health and well-being by enabling ongoing economic growth unintentionally erode the ecological bases of health now and for future generations. As such, both humanity's and our planet's long-term health depend on building the resilience of health systems to thrive in post-growth economies. Resilient health systems will need to be rooted in a more strategic use of resources, professional expertise, and health care technologies while integrating substantially more hyper-local, highly contextual, place-based approaches to health and well-being (Hensher and Zywert 2020; Missoni and Morales Galindo 2021). They must also enable not only individual health, but the health of systems across socio-ecological scales (e.g. health of the soil, health of our communities, health of our planet). The models profiled in this chapter demonstrate the kinds of prefigurative alternatives that could be particularly suited to accomplishing the three new targets for SDG 3

proposed below. The good news is that there are many other examples like them, flourishing in communities around the world in ways that respond to the specific needs and characteristics of diverse local contexts. Learning from such approaches will be crucial to our collective ability to ‘ensure healthy lives and promote well-being for all at all ages’.

Proposed new targets

- 1 Achieve planetary health to secure the health and well-being of future generations.

Indicators

- Number of planetary boundaries transgressed at local, national, and global scales.
 - Number of basic needs met without transgressing planetary boundaries at local, national, and global scales.
- 2 Build health system resilience for a post-growth future.

Indicators

- Number, nature, and impact of community- and place-based social innovations for health and well-being.
 - Extent to which national health outcomes and measures of subjective well-being are sensitive to economic contraction.
- 3 Create conditions for health to flourish across socio-ecological scales (e.g. healthy soil biodiversity, individual health, population health, planetary health).

Indicators

- Number, nature, and impact of health and well-being initiatives that demonstrate positive outcomes across two or more scales, e.g. human health, community resilience, population health, local economic development, local ecosystem regeneration, planetary health.

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Part III

**Life and well-being
enhancing systems**



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10 Education, Livelihood, and the State–Market

Towards radical subsidiarity

SDG 4: Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all.

The big history of education

Hunter-gatherers did not memorize time tables, nor did eighteenth-century farmers study the significance of Baroque architecture. Implicitly, we know that education has, and must, change as our world evolves. The kinds of socialization, knowledge, and skills that are necessary to get by vary according to culture and economy. Over the longest periods of social development, development of language, the domestication of fire, toolmaking, the social and occupational complexity made possible by agriculture, the changing technics of war, mass literacy, the industrial revolution, and now the virtual world of the Internet have continuously transformed the knowledge available to successive generations, as well as the means of acculturation and learning. Human society moves more rapidly than ever before, so we need to consider if educational norms are still appropriate for movement through and out of the Anthropocene.

For most of human existence, life was organized in small face-to-face communities – mobile bands and later small clan-based settlements. Inextricably tied to lifelong, intergenerational relationships, the learning process for most of humanity's history included individuals learning skills, habits, and routines in 'fractal' contexts, which intimated the entire pattern of life (see Chapter 5, Figures 5.2 and 5.3). People learned by doing, through experience, relationships, and occasionally some informal instruction. There were no technical manuals, exams, curricula, learning objectives, or abstract *modus operandi*.

This pattern periodically gave way to more formal education patterns, first in the urban centres of ancient and classical civilizations, but with more direction in late medieval Europe. Since the fifteenth century, starting with the enclosure movement in England, capitalist modernization saw the progressive disembedding of labour from the social structures of feudalism. As we described extensively in previous chapters, in this process, the individual has

come relatively detached from ascriptive, familial, and community, becoming more loosely connected to mobile and more fluid, transactional, and optional relations with relative strangers. The imagined community of the nation-state was a semi-deliberate invention designed to foster the mutual identification of these mobile workers and consumers as citizens.

Education in turmoil

With the digital communications revolution, everything has changed. Modern economy and society are dominated by the abstract and instantaneous flow of information. Complex market transactions, logistical management systems and processes of bureaucratic monitoring, and regulation and administration are mediated by vast flows of information online. In the context of pervasive relations of commodification and rationalization, the unprecedented individual spatial and social mobility, the coupled processes of disenchantment and psychological individuation proceed apace (see Chapters 3 and 4). Rational-instrumental and actuarial approaches to life increasingly trump considerations of family obligation, affective-loyalty and place-bound, or occupational/class identity.

Society is more complex than ever, and to service this complexity, universal education has been extended to most social classes and more students than ever enrol in universities and take higher degrees. The education industry is now increasingly globalized (Spring 2014), highly formalized, diverse, and increasingly outsourced to specialists in both the public and private sectors, with curricula and qualifications increasingly dictated with a view to the market. The objective and rationale for such systems are to provide a generic education focused on highly transferable skills for citizen-workers who can slot into numerous generic societal functions. Education is contractual, modular, instrumental-rational, and almost entirely construed as preparatory in nature and function.

The students relate to the system as consumers partaking in a contractual service. In the Anglophone world, in particular, universities are modelled on a nineteenth-century British system that was designed to turn the graduates of (residential) public school into soldiers and servants of the Empire. The model involved four (or more) years away from home in residential accommodation. Concerning the 'society of individuals' described above, this system is almost purpose-designed to induce social and spatial mobility. The classic university experience was intended to sever relationships with family and place-bound affiliation with childhood home and community. Leaving home for university was understood to mean leaving home, period.

As melting pots and hubs for experimentation with new gender relations, sexual identities and lifestyle innovations (such as the earliest iteration of Facebook), universities have been primary drivers of Bauman's 'liquid modernity' (2000). With the extension of the mobile and mutable modern self (Taylor 1992), the idea of 'choice' has become a progressively more pervasive

and naturalized parameter of lifestyle. Relieved of traditional ascriptive social identities, individuals have little option but to continue to make choices from among the proliferating social and economic roles. On the cusp of the 1960s, Goffman famously riffed on the ‘presentation of self in everyday life’ (1959). This theatrical need to create and re-create the self now constantly unfolds, with each tweet, post, and public choice to conform, identify, present, or not. In this theatrical circus of self-creation, individuals in modern societies realize the furthest reaches of Reiff’s therapeutic society, and the worst fears of Christopher Lasch concerning narcissism (Hartt 1980; Rieff and Lasch-Quinn 2007).

After two centuries, the concerted modernization and global integration of market society have led to a global ecological crisis – and the onset of the Anthropocene, a new turning point in the history of both humanity and the planet. The likelihood of systemic, global crisis and even collapse now begs questions about whether education systems are fit for purpose. In what follows, we chart a corollary transformation of education made both necessary by modern global realities and possible by emerging technologies of communication and production.

The SDG education targets relate to access to education and support for qualified teachers but say nothing of substance about how children are educated and what they learn. In his now-famous TED Talk, Ken Robinson argued that modern education systems, in many ways, adhere to industrialist ideologies (2010). For instance, the propensity of Enlightenment thinking for abstract, reductionist, and technical understandings underlines the assembly-line model. Robinson claims these processes stifle creative thought and the ability to deal with increasingly complex and interconnected global problems.

While Robinson is not the first to bring up these points, he is indicative of growing movement against the failure of assembly-line education to prepare children adequately for the personal and societal challenges of the twenty-first century. This critique is redolent of a long line of counter-cultural thinking associated with figures such as William Morris, John Ruskin, Peter Kropotkin, and perhaps most famously, Ivan Illich’s book *Deschooling Society* (2000). Many of these critics focused on the split education created between hand or technical education and brain or academic education. Each suggests that this separation, created to drive and sustain industrial society’s needs, hampers individual and collective development.

Education, modernity, and civil society: Paradoxes of shared culture and coercion

Maths, literacy, and standardized education play central roles in forming individuals as responsible citizens able to operate in a shared economy and participate and identify with the ‘imagined community’ of the nation-state. Of necessity, in this process, the state supplants familial and community-based acculturation, learning-by-doing, and the organic intergenerational passing of knowledge between parent and child or mentor and mentee. Variable, contextual, and

local knowledge presents an impediment to establishing standardized languages, vocabulary, measures, conventions, rules, accepted literature, mythologies, and cosmologies that define and maintain cultures. Ernest Gellner argued that this kind of mass literacy through professional ‘exo-educational agencies’ is a primary vehicle for coercive disorganization of local cultures and integration into an overarching ‘high culture’ – a prerequisite for establishing *nation*-statehood (1983; 1987). In practice, this meant dissolving the localized, community-oriented, and vernacular culture of rural peasants (for example, in England and France), the collectivization and destruction of the kulaks in the Soviet Union, or the compulsory integration with residential schools of Indigenous populations (for example in the United States, Canada, and currently India and Indonesia).

In complex industrial societies, the mobile, fluid occupational structure engenders constant change. Individuals have no fixed role, ascribed as a function of birth. Instead of being rooted purely in structure, identity becomes dependent on culture, acquired through education and training. In traditional societies, individuals, to a greater extent, grow unconsciously into unique jobs and lifetime social niches, which are broader and encompassing of the whole of life, rather than narrowly economic functions. The social location furnishes identity, while in complex, modern societies, individuals must be constantly trained, equipped with skills to move around and change.¹

A central factor in this process, underlined by Ernest Gellner, Owen Barfield (1988), and Walter Ong (2002), is literacy. Reading and writing are functionally implicated in the expansion of more complex societies, the process of rationalization, the emergence of elaborate public and private administrative systems, and the operation of the market. But much more than this, literacy is involved in the interiorization of the mental process that is central to the psychogenesis of individuals (Elias 1991). This interior sense of self, which we now take for granted, underpinned Descartes’ ‘thinking statue’ image of consciousness.²

Mass literacy both fosters and is required by a standardized written vernacular; to this end, mass education is perhaps the most critical function of the modernizing nation-state that must respond continually to the remorseless pressure towards a standard culture. Geller argues that this is how the state produces the ‘nation’:

The sense that national identity is natural is one expression of this irresistible convergence of state, population and culture within industrial society.
(1983, xxiv)

The nationalization of culture is a process by which one (often arbitrary) local culture among many, through competitive elimination and dominance, plays the role of an emerging high culture – which is universalized to become coextensive with society. The process is deliberate, coercive, and benign by equal measure and, to be successful, must be backed by a monopoly of violence, once overt and brutal, now subtle and implicit, but always effective in pacifying and

quelling conflict (see Chapter 14). This state-regulatory mechanism is accompanied by a complex gamut of ancillary sociological and institutional processes relating to the provision of standardized national infrastructures from roads and rail, to utilities, education, and health and most recently cellular and Internet networks. In the new conditions of industrial modernity, literacy is no longer a hermetic specialism but a precondition for acceptance and overall success.

Gellner argues that the nation-state is characterized as much by the monopoly of legitimate exo-education as by monopolies of violence. For disembedded individuals, kin and community networks no longer function as significant security sources, nor do they mediate relationships with the broader, anonymous culture. ‘Gelled’ by professional occupation and specialist training, such individuals are moulded in the most significant ways not by their family and kin groups but by specialist agencies of the state. With the market and state bureaucracies able to recruit from the population at large, the clerics lose their power as gatekeepers controlling access to high culture, which becomes generalized (Gellner 1983, 36–37). The state is now the critical means for securing the (re) production of this unified and relatively egalitarian, high culture.

Prior to the modern era, invaders and colonizers often had little interest in enforcing their own particular vision of culture, language, religion, and ideology on peasant cultures newly under their dominion. It is only with nation-state formation that top-to-bottom cultural coherence becomes a structural imperative. If the process is successful, the resulting ‘imagined’ national identity often becomes deeply embedded in the psyche of those upon whom it was enforced – so much so that the identity is naturalized and appears to be as ancient and venerable as the national landscape, flora, and fauna. However, in countries such as Canada, the United States, Indonesia, and India, the attempt to impose this process on Indigenous populations resulted in what we now recognize as long-term systemic racism and prejudice against Indigenous populations. To some extent, this is an insoluble dilemma that results from a mismatch between democratic culture and norms on the one hand, and the functional requirements of nation-state formation, on the other.

The goal of ‘exo-education’ is not just technical competence, but rather the shared imaginary and we-identity necessary to legitimate other monopolies relating to redistribution taxation, conscription, and the legal justice system. This mutual identification and shared sense of legitimacy make possible healthcare systems, pensions, employment insurance, public housing programmes, transport infrastructure, vehicle licencing, and so on. This process relies on dissolving community and family allegiances, both socially and psychologically. In a seminal study of modernization, Eugene Weber showed that turning ‘peasants into Frenchmen’ involved a necessary process of violence, cultural decimation, language suppression, and coercion that was functionally almost identical to the contemporaneous colonization of Algeria (1976).

Similarly, in Canada, the state-mandated residential school regime involved institutions that bear a remarkable resemblance to nineteenth-century British public schools, prisons, orphanages, and hospitals. The intention of outright

assimilation and integration of Canadian First Nations followed the logic of modernization and state formation that is evident not just in European or historical colonial contexts but the contemporary policies of countries such as India and Indonesia, which also struggle to reconcile indigenous tribalism with the civic-democratic (or not) structures of the modern state. In Canada, the policy was an attempt to fast-track this integration process and create a generational transformation, severing family and cultural ties and immersing Indigenous children into the colonial culture of Canada. In this sense, the residential school system represents the inner Faustian logic of modernization: the forcible exchange of cultural autonomy for the benefits of civic membership – benefits which can only function in relation to mobile individuals. Unlike the historical process in European states, the paradox was that Canada's attempt at forced integration was occurring within living memory. It took place in a democratic state and against the backdrop of elaborate and deeply internalized philosophical, religious, and liberal democratic theories, which have made the sanctity of the individual and the notion of universal rights qua humanity, cornerstones of Western culture. Unlike the unitary process in most European contexts, colonialism juxtaposed two populations and cultures at completely different levels of development. It was intrinsically more difficult for Indigenous people to take ownership of an 'imagined community' that was already pre-existing, external, and imposed. At the same time, by honouring treaties (though often in the breach) that sustained tribal governance and limited territorial integrity in perpetuity, and by attempting to impose policies that manifestly contravened the most deeply held ethical and political instincts of the body-politic, the process of integration was rightfully interrupted. The process was sufficiently brutal and coercive as to generate deep resentment and resistance within the First Nations, but was not murderous enough to succeed in the greater colonial effort and goals.

In this sense, the stalled process of integration is exemplary of the more general problem. In Europe, economic modernization and cultural homogenization happened in large measure before the process of democratization. With ubiquitous 24/7 media coverage and an equally ubiquitous narrative of liberal democratic norms in the broader global arena, the kind of coercive cultural homogenization that made civic-national democracy possible in Europe is now simply impossible to countenance. In consequence, democratization, institutional development, and economic development are expected to proceed in tandem.

In Canada, the result has been a situation in which Indigenous populations remain, by colonial design, outside of the mainstream of the society and semi-detached from the processes of mutual identification associated with Canada's benign civic nationalism. First Nations are now and forever systemically disadvantaged within the state. Fiscal transfers are grudging, parsimonious, and often come with strings attached. They are legitimated not by recourse to symbolic consanguinity (the Canadian 'family') – a discourse which is denied

vehemently by the blood and land discourse of tribal territoriality – but on the basis of collective and somewhat orchestrated guilt or the ‘sins of fathers’.

The structural nature of this dilemma emerges very clearly, in another way, by the comparison with comparable coercive child policies in vogue in the Anglosphere in the early to mid-twentieth century. There are deep structural similarities between the residential schools in Canada and compulsory adoptions (the ‘baby scoop’) imposed on poor and marginalized mothers within the settler community. This practice affected nearly 400,000 babies, many of whom experienced abuse within the care system. Very similar policies were in operation in America and Australia, with similar results (Andrews 2016; Fessler 2007; Solinger 2000; Moor 2007). And on an equally large scale, Canada was also the recipient of hundreds of thousands of UK orphans under the Home Child programme – again with many of the children being abused and used as a source of cheap labour on remote farms (Oschefski 2015; Boucher 2014; Parker 2008; Hillel and Swain 2010). These examples underline the extent to which the propensity for top-down and rationalizing solutions concerning child protection and citizen-formation have been impossible to avoid in the early process of modern nation-state formation.

Education and the loss of language cultures

There is a rather poignant and deeply uncomfortable paradox in this historical understanding of the state’s role in forming citizens. In this process of nation-state formation through literacy and education, there is a significant and likely unavoidable aspect of cultural genocide. The last thousand years have seen the extinction of hundreds, possibly thousands, of distinct languages and dialects in Europe, a pattern repeated worldwide.

The emergence of what we have referred to as the State–Market – which is to say the processes of nationalization and marketization – both require that peasants emerge from their cloistered communities and enter into systems of cultural and economic exchange with relative strangers networked by a raft of new institutions, transport infrastructures and communications systems linking communities over thousands of square miles. In this process, face-to-face interaction, in particular (market) places, is progressively supplemented by relations of anonymous interdependence organized across increasingly abstract conceptions of space (transport grids, national markets, railway networks). Increasingly dependent on fiscal resources tapped from these economic activities, emerging states have an overriding imperative to lubricate the flows of people, information, and goods and maximize the number and value of exchanges.

Modernization brings myriad benefits that are non-negotiable, which is precisely why they feature so heavily in the UN SDGs. Democracy, human rights, education, health systems, air travel, cell phones, transport systems, electricity are all predicated on the ability of citizens to take part in the polity, economy, and civil society. Papua New Guinea has 800 distinct languages, most as different as

French is from German. It is highly conceivable that any development – any extension of the State–Market – will, over time, see hundreds of these languages disappear as functioning cultures. The exo-educational institutions promoted by national and international development agencies will do more than any other factor to effect this mass extinction.

Standardized education

State-sponsored education is now a profoundly pervasive marker of success within society. Education levels, mainly relating to literacy and numeracy, are international markers of a socially developed country. This is clearly demonstrated within the Sustainable Development Goals relating to education. As Gellner argued, with modernity, technical languages, shared knowledge, and concepts are needed to fully participate within a society that is now so complex, that localized community or familial groups simply cannot provide what is necessary to be a successful individual. State education has become an obligatory norm that, within the family, attenuates socialization and almost eliminates technical acculturation while undermining any residual heritage culture. Pedagogical nods towards multicultural diversity or the selective celebration of Indigenous cultures never deflect the exo-educational system from its core purpose: to form citizens who will be successful in the context of capitalist modernity.

SDG 4 seeks to ‘ensure inclusive and equitable quality education and promote lifelong learning opportunities for all’. The seven sub-targets focus on access to relevant and ‘effective’ learning outcomes, pre-school education, affordably postsecondary education, increase information and communication technology skill, improved indices for evidence of Indigenous and marginalized communities participating in formal education, basic minimum standards of literacy and numeracy, safe learning environments, more scholarships for marginalized communities to participate in formal postsecondary education, and a sufficient supply of teachers. Most problematic from the perspective of Livelihood is target 4.7, to ensure all ‘learners acquire knowledge and skills needed to promote sustainable development including ... global citizenship’. This captures the essence of the drive towards individual social and spatial mobility, transferable skills, and high level but less visceral processes of mutual identification.

These targets enhance state control over education and homogenization of cultures and are caught on the horns of the genuine dilemma: that the national civic architecture of democracy, sovereignty (civil, social, and human) rights, and economic growth depends on the formation of *national* citizens (pace Gellner), which in is irreconcilable with any form of sub-national tribalism. For this reason, the targets cannot but contribute to the further disorganization, colonialization, and unravelling of minority Indigenous and tribal cultures. Systemic marginalization of Indigenous cultures is built into the inner logic of modernization, even as the material opportunities for individuals (as citizens) may or may not be enhanced.

The SDGs are intended to help countries construct education systems that form citizen-workers who can succeed in growth economics. They do nothing to celebrate and encourage heterogeneity and diversity of culture and approach, nor to encourage the reintegration of multi-generational knowledge, hands-on learning, and contextual acculturation into a modernist educational paradigm that is predicated upon an ‘axiology of development and progress’ (Vargas Roncancio et al. 2019). In short, these educational systems aim to maximize wealth accumulation, improve GDP, and achieve materialistic gains for individuals.

Horns of a dilemma: Livelihood education and the civic-national society of individuals

The tension between context-bound localism and the civic-national formation of citizens is very real. The very same processes that unravel local place-bound survival units and construct mobile individuals who can operate in relation to the State–Market are also prerequisites for all of the cherished and taken-for-granted democratic rights and liberal institutions that continue to constitute the *raison d’être* for the United Nations. In Chapter 3, we intimated a political economy that involved both partial re-nationalization and re-localization of economic activity – a framework that is best captured by the concept of subsidiarity. More local, embedded processes of economic exchange and reciprocation rooted in communities and networks of households should be nested within a more national space for the operation of price-setting markets, which operate in a more semi-detached way in relation to global markets. The imperative is to re-establish semi-permeable barriers between these scales and structure but not eliminate the market and reduce but not abolish the state’s intrusion. Such a political economy in which the State–Market is balanced by Livelihood would reduce the viscosity of social life and orient the lifeworld of individuals to a greater extent to the communitarian lattice of reciprocation and obligation – without reintroducing the levels of ascription and social inertia associated with traditional societies. The problem relates to the *balance* between Livelihood and the civic-national society of individuals.

At this point, it is essential to emphasize that over-correction would certainly be disastrous, undermining two centuries of steady progress in relation to the sanctity of individuals in both the polity and culture. Biophysical limits to growth make some re-emergence of Livelihood relation inevitable. There are ways in which this could be positively beneficial. However, the eclipse of the State–Market would take with it the institutions of open exchange that underpin not only the market economy, but science, innovation, the legal system, democracy, and liberal accommodation of diversity.

Bearing this in mind, there are real differences between:

- i In the Global North, a post-liberal renewal of Livelihood in societies that have already been through the process of modernization.

- ii In developing countries, the retention of certain traditional forms of Livelihood in combination with modern democratic institutions of economy and society.
- iii In the case of non-state Indigenous societies, the preservation of cultural economies, oral modes of acculturation, and participating modes of consciousness are, at least some degree, incompatible with literacy, fungible exchange, rationalized administration, individualistic legal principles, and democratic accountability. In this case, one should distinguish between (iii-a) the few remaining isolated cultures for whom contact with the modern world has been fleeting, and (iii-b) the greater number of such societies that exist in a state of permanent subordinate engagement with state-society and economy.

We cannot speak equally to all three situations, and the latter situation (iii-b) seems particularly intractable, however poignant.

Livelihood and the State–Market in education: The co-existence of two ontologies and forms of life

Vargas Roncancio et al. set out a good strategy for thinking about education within a domain of enhancing human–earth relationships (2019). They suggest that truly sustainable education will advance an ontology of interconnectedness through an epistemology of relationships based on a plurality of values. The pedagogical processes to advance such a shift would include co-production of learning by localized, place-bound, and contextual voices and alternative learning tools such as community stories and narrative. This is one option for framing Livelihood approaches to education. The reconnection of individuals to family and place seems to be a prerequisite for the kind of systemic social-ecological change that will consolidate ecological conscience formation (Quilley 2009) and rein in and constrain individual consumption and societal dependence on growth. To the extent that the SDGs embrace the reality of biophysical limits, SDG 4 must incorporate the systemic ecological and geopolitical crisis more deeply, in which case ‘business as usual’ education is unlikely to prove a viable strategy.

To the extent that, in the broad scheme of political economy advanced in Chapters 2 and 4, the issue is a *balance* between Livelihood and the State–Market, a *partial* retreat from globalization and *some* movement towards more embedded markets in the context of an overarching commitment to *subsidiarity*, then the SDGs relating to education should also reflect these two domains as nested, complementary but also mutually contradictory orientations to knowledge and learning. Such a framework would seek to stabilize poles of both involvement and detachment (Elias 2007). This implies an approach to education and acculturation that would also supplement and amend the driving objective and modus operandi of liberal individuation in

Table 10.1 Two different ontologies and forms of life that need integration

<p>The modality of ‘detachment’ and scientific, reality-congruent unitary models of reality</p> <p>Instrumentally rational individualism in which the ‘I’ predominates over the ‘We’, and corresponding to what Elias refers to as ‘<i>Homo clausus</i>’.</p>	<p>The modality of ‘involvement’ relating to multiple, incommensurable, and mutually irresolvable domains on the other</p> <p>A more embedded, relational, and ecological communitarianism, in which the ‘We’ pole of mutual identification predominates over the ‘I’ pole of autonomy and self-actualization and corresponding to pluralities of open-interdependent individuals or ‘<i>Homines aperti</i>’.</p>
<p>The efficiency and dynamism of price-setting markets, innovation, and technological dynamism versus.</p>	<p>Embedded forms of livelihood, subsistence, and reciprocal exchange.</p>
<p>The formal-rational institutions of state–market relating to individual citizen–consumers [<i>Homo economicus</i>].</p>	<p>The reassertion of the principles of <i>householding</i> and <i>livelihood</i> operating through reciprocal, obligatory and place-bound relationships of family, community, and ecology.</p>
<p>The <i>exo-education</i> of citizens in relation to the more detached, scientific concepts and models, necessary to operate in the rationalised context of economy, technology, and the institutions of state–market on the one hand.</p>	<p>Partially re-emerging or retained and repurposed local and familial forms of acculturation that are synonymous with more re-enchanted, relational, and meaningful cosmologies and ontologies.</p>

Note: Any reconciliation of enduring accommodation between these competing poles would depend two conditions: firstly, the *power of ritual* to demarcate, stabilize, and allow interactions and transitions between incompatible but co-existing worlds and worldviews; and secondly, an emerging technical basis for a new ‘secondary orality’ in social life.

which agency, responsibility, obligation, and rights are construed in relation to rational individual agents, and in a civic or contractual, rather than relational, reciprocating, and situational, frame of reference. Such an educational system would allow for the radical co-existence of two different ontologies and forms of life (Table 10.1).

Any real transformation of our systems of political economy depends on problems of meaning and culture (see Part I of this book) that may be less accessible to detached scientific frames of reference as humanity is facing a new kind of complexity. There is a problem of drawing simultaneously upon both involvement and detachment; scientific modelling and re-enchancement; truth-oriented sincerity and pragmatic, action-oriented ritual. This new kind of complexity turns on embracing a *conscious, creative, cognitive dissonance* and cultivating a capacity to operate simultaneously in different cognitive and ontological worlds, operationalize contradictory forms of rationality, and actively

seek out and enjoy the associated psychological dissonance. Climate scientists must walk in the enchanted forest; settlers must celebrate, uphold, and help reconcile abolished cultures; religious traditionalists must find ways to accommodate science without haemorrhaging meaning; citizens and neighbours must find ways to re-ritualize their lives individually and together.

Problems of meaning for education

In pre-modern, traditional societies, the ontological/cognitive universe is not unitary but divided into multiple, more or less separate domains. The concepts and lexica of hunt, harvest, rituals, council room, kitchen, and harem are understood and operationalized as autonomous and semi-detached. To treat such different phenomenological and ontological domains as integrated or co-related; to conjoin these different compartments of the lifeworld would most likely be incomprehensible. By contrast, as Gellner points out, a defining feature of complex, modern societies is the assumption 'that all referential uses of language ultimately refer to one coherent world and can be reduced to a unitary idiom; and that it is legitimate to relate them to each other' (1983, 32). Although modern philosophies of knowledge epitomize this philosophical materialism, the idea has profound social roots in economy and society: the process of rationalization and the instrumental/formal rationality that drives all modern institutions (from the household economy of a nuclear family, through corporations and the state) (Giddens 1990); the processes of disembedding in the economy (Polanyi 1944; 1968), individualization (Weber 1958), and the emergence of a society of individuals (Elias 1991); the extension of the functional division of labour creating pervasive but opaque patterns of interdependency between individuals, groups but also processes and institutions (Elias 1978; 2007); the extension of market relations and the mediating role of money as a universal currency facilitating fungibility and commensurability (Simmel, Lemert, and Frisby 1900). These ideas are explored more extensively in Part I of this book.

More detached, universal modes of cognition have been internalized progressively into the social stock of knowledge and thus the habitual mean of orientation available to all individuals qua membership of and acculturation within a particular society. Once emotionally and ontologically challenging ideas such as the fact that the earth goes around the sun, or even that humans share kinship with humble bacteria, which are in turn agents of disease and ill-health – have become part of the common-sense cognitive framework of even young children. The power and utility of the scientific world view is evident in the pace of innovation and technical development. But there are also two very clear sets problems associated with rationalized, scientific rendition of a fundamentally unified but meaningless universe, both of which hinge upon meaning.

Following Barfield (1988), Berman (1981, 2000a) characterizes the worldview and experience of our hunter-gather ancestors in terms of a 'participating consciousness' – a fundamentally holistic, processual, and relational

perception of the interconnectedness of all phenomena and processes, in which entities of all kinds shared intimate and reciprocated relations with each other. The consciousness of our Palaeolithic forbears was likely to have been rolling, diffuse, and non-analytical, lacking in many instances even a clear self-awareness. To reinvolve humanity with one another and the economy, we needed a re-embedded market in which production is not just for the market but also for contributing to the community. This would include a stronger focus on quality, not quantity, and by learning from one another and close community. This requires ‘the merger of scholar, craftsman, geometry and technology was now occurring within the individual human mind’ (Berman 1981, 59).

Today, some of this can be achieved by internalizing some elements of education at home. During the COVID-19 pandemic, through the necessity of alternative learning arrangements such as homeschooling, pod-learning, and forest schools, mass involvement in local acculturation went against the logic of the state’s monopoly of exo-education. In principle, homeschooling represents the rejection of exo-education and the reassertion of families, communities, and churches’ rights and capabilities against the state’s universalist, civic agenda. In a very direct way, for instance, when Christian families teach ‘creation science’ homeschooling departs from the generic, technical currency, and rational-scientific-instrumental lingua franca that is the hallmark of modern education. And to the extent that children are shielded by family and community from state-defined norms of belief and good conduct – for instance, in relation to sexuality, sex education, egalitarian gender norms – homeschooling can reasonably be understood to be anti-modern and subtly anti-state, at least in Gellner’s terms. On the other hand, the ubiquitous availability of textbooks, and, through the Internet, educational videos and documentaries, online learning platforms, means also that homeschooling in practice represents the blending of both modalities: involvement and detachment; Livelihood and the imperatives of State–Market; participative and relational cognition alongside science.

It is also true that in a small way, in relation to religion and spirituality, as well as the informal warp and weft of a hearth culture, homeschooling, and other educational alternatives can provide a sheltered context for a more relational and enchanted pattern of life – a childhood more effectively insulated from the contractual, civic, and highly rational-individual engagements with state and market (Lois 2013). By fostering a much greater mutual obligation and patterns of reciprocity between family members and perhaps between families, there is in the culture of homeschooling and pod-learning, at least the echo or possibility of an effective survival unit other than the nation-state. Having said that, for the most part, homeschooling does not disengage. In most cases, the practice functions to create individuals who can better absorb the benefits of a generic education and enter the university system and later the workforce. To the extent that homeschooling families use texts and curricula developed to service mainstream education, take part in state- and market-regulated examinations and rely extensively on the global networks and context-free forms of education associated with the Internet, the culture is parasitic and dependent on the wider

structures of labour market and exo-education secured and reproduced by the nation-state (Murphy 2012; Gaither 2008; Lois 2012).

The COVID-19 pandemic gave a glimpse of what a different kind of education could look like and the Internet played a significant role. The Internet and new iterative relationships between local, place-bound contextual modes of interaction and global patterns of interdependence and context-free communication can empower alternative forms of education. The Internet allows for more significant differentiation between the two functions of education, namely: the *transmission* of bodies of factual knowledge and substantive more detached models of the natural and scientific world on the one hand; and showing/experiencing/operationalizing such knowledge and models in the context of real-world contexts and a process of problem-based (self)-learning, on the other. With Internet 2.0 we have entered a new era in which the dominance of literacy and context-free communication is now supplemented by a renewed emphasis on (a) graphic symbols, icons, and visual imagery (the ‘new medievalism’) and (b) renewal of a kind of ‘secondary orality’ and highly contextual, immediate, and local forms of communication that are never-the-less networked and trans-local. This suggests a possibility of distributed forms of community.

A mosaic of argots and languages is distributed in virtual space but overlaid in physical space (rather than the mosaic of distinct language-culture-communities dotted over physical space as in pre-modern Europe or contemporary Papua New Guinea). It also enhances cognitive justice, both in learning from a broad array of cultures and through access to open-source educational materials. SDG 4 should include targets that help strengthen this very easily accessible alternative to state education. The over-expansion of and over-enrolment in academic subjects of limited value has in most countries come at the expense of the status and resources directed towards technical and craft skills.

New targets for SDG 4

With such drivers in mind, a pre-emptive restructuring Western systems as well as the development of school and university regimes in the Global South, should be directed towards the following goals, targets and principles (Quilley 2020).

1 *Framing:*

- Education should embrace the reality and necessity of a society in which individual rights are tied to structures of mutual obligations, and in which individuals are enmeshed in place-centred relationships of interdependency (rather than contracts) extending over time. Such relationships with individuals (as in marriage), groups (family, church), communities, interest-based associations, will reduce social and spatial mobility but increase cohesion, security, and availability of reciprocal care.
- With a view to relational attachment and reduced social viscosity, all educational initiatives should move away from secular, transactional

processes of certification in which the student is construed as a consumer or client. Rather these institutions should develop a novel or renewed emphasis on procession, public affirmation, and rites of passage with regard the award of degrees, guild membership, public holidays, and street parties, as well as concomitant developments in compulsory local service, relationships with local hospitals, and the local food and farming sectors. Rather than the transience of mobile individuals, localist higher education would instead dramatize the vivid, experiential and lived fabric of relationships reaching into every home, business, garden shed, allotment society and church, mosque, and temple.

2 *Primary and secondary schooling:*

- Remove barriers and actively support alternative forms of education, including homeschooling, eco-schools, pod-learning, forest schools, and hands-on educational practices. Make approaches such as Montessori more widely adopted, rather than for elite private school education.
- Improve the quantity and quality of open-source educational materials for all levels of learning across different learning domains and disciplines.

3 *Higher education:*

- The ‘away from home’ residential model should be reserved for higher-level and meritocratic and elite-level institutions (e.g. the much smaller flow of PhDs in the social sciences and humanities).
- A large reduction in the number of people doing fully academic training should be matched by an increase in quality, standards, and thresholds for entry.
- An increase in the quality of training and opportunities for hands-on experience in technical and craft areas, especially in burgeoning domains associated with electronics, computing, the Internet of Things, micro-industrial/fabrication technologies (in areas such as additive manufacturing, bioscience etc.).
- In the Global North (and especially the Anglosphere), there should be a significant reduction in the number of academic university institutions.
- Creation (in the South) and repurposing (in the North) of second-tier institutions to provide a renewed focus on craft and technical training with colleges acting also as tool libraries, innovation accelerators, and industrial resource centres, and also serving as hubs for re-emerging forms of guild organizations.
- Converging development in both North and South: With the proliferation of online resources a typical degree will shift to a model of extended adult education, self-study, and periodic residential retreats. Curricula will be more based on work placement and learning by doing. The institutions should prioritize the ongoing engagement of students with their home communities, families, and friend networks.

- To counteract grade inflation, assessment in academic contexts will shift entirely back to rigorous anonymous final examination (in some cases managed by guilds).
- Maintenance subsidies would be largely phased out with the expectation that students would, for the most part, live at home. The rationale for this change is not primarily expense, but the re-consolidation of the relational rather than contractual basis of civil society.

Notes

- 1 More generally, the commonality of structure and organization across the prison, military, educational, health and psychiatric institutions speaks to the overarching modernizing logic of individuation and the disciplining of the self (Foucault 1995), the psychological internalization of external social constraints (Elias 2012), and the atomization of communitarian patterns of identification as a prelude to citizenship (Weiner 2013).
- 2 Owen Barfield (1988), Vernon (2019), and Berman (1981; 2000b) describe the same process in his ground-breaking account of the move away from an original 'participating consciousness'. This withdrawal of participation involved exactly the shifting balance between processes of involvement and detachment that for Elias (2007) constituted the decisive movement underpinning the scientific revolution in the seventeenth century.

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11 Removing the burden

Valuation of the household and commons in the SDGs

SDG 5: Achieve gender equality and empower all women and girls

Feminists have argued that at least since the Industrial Revolution, a ‘historic mode of (re)production emerged that used gender to supply and sustain labour for expanding economies’ (Paulson 2018, 6). They argue an intentional separation of productive and reproductive spheres with a designation of the former as masculine and the latter as feminine. The organization of capitalist economic systems resulted in ‘disproportionate allocation of monetary value, resource, and power to masculine-associated production’ (Paulson 2018, 6). This functional/value separation scheme co-evolved and sustained the expansion of the labour market alongside heterosexual nuclear families as a normative economic unit. It is only in this very recent history, alongside growth economics and expansion of labour markets and economic systems, that the nuclear family, with women at home in less-valued positions, became a standard norm where women are ‘trained to reproduce men’s labour day-by-day by providing nourishment, rest, healthcare ... bearing and raising children’ (Paulson 2018, 7). As monetary valuation was increasingly linked with self-worth and self-esteem, the feminized reproductive sphere became increasingly devalued.

At the same time, during the early phases of industrialization, to the extent that men dominated the public world of work, this was often a pyric ‘victory’ in the putative sex wars. Industrial working conditions were often dangerous. Employment was insecure. Labour discipline was frequently brutal, and remuneration pitifully low. Death, disabling accidents, and disability were routine in many industries. And the expendable character of male labour was most clearly dramatized in the practice of ‘press gang’ conscription. Industrial workers were frequently cannon fodder in increasingly brutal, technological warfare (Milbank and Pabst 2016).

These issues aside, the industrialization of production was as momentous as the transition from hunter-gathering to agriculture, pastoralism, and settlement. Indeed, it led to an unprecedented and unfamiliar separation of paid work from embedded processes of subsistence (food growing and processes, mending,

weaving, and so on). This may not have been intentional, but rather it was a necessary concomitant of what Mumford (1971) referred to as the Palaeotechnic phase of industrial development: factories delivering enormous economies of scale but constrained towards gigantism by the capital-intensive nature of large steam engines. The consequences of this production system for the family were barely an afterthought in the minds of the Victorian industrialists. Even during the heyday of the factory system, the argument that all women were trapped in the reproductive sphere of the home was a reality that only approximated to the experience of middle-class wives of professionals and businessmen. Working-class women worked hard and long hours, just like the men.

Either way, it did not last very long. For a short while in the middle of the twentieth century, the situation of women in Western societies came close to what Paulson describes. However, since the 1960s, women's participation in the labour market has risen dramatically. Women are graduating from Western universities in higher numbers than men in most disciplines. Across all Organisation for Economic Co-operation and Development (OECD) countries, a large majority of graduates (60–80 per cent) in humanities and arts subjects are women; in most countries more than 57 per cent of graduates in business, administration, and law are female. Representation of women in the traditionally male-dominated fields of engineering, manufacturing, and construction has risen to nearly 27 per cent ('OECD Family Database – OECD' 2020). The pay gap is smaller than ever and shrinking, particularly for like-for-like work comparisons (Bolotnyy and Emanuel 2018). Residual differentials may result from significant differences in career choices linked to small but significant sex-related differences in personality and interest. Thus repeated and repeatable studies have concluded variously: (a) that robust sex differences in personality can be detected in childhood and remain constant through adulthood (Else-Quest et al. 2006; Wilgenbusch and Merrell 1999; Feingold 1994); (b) that sex-based personality differences are more significant than differences in areas such as cognition and self-esteem (Else-Quest et al. 2006); (c) that such differences lead to consistent differences in leisure and occupational choices as well as health (Collaer and Hines 1995; Lippa 2005); and (d) that more generally men tend to towards risk-taking and individual assertion, with women slightly but significantly more prone to anxiety, empathy, and agreeableness (Byrnes, Miller, and Schafer 1999; Feingold 1994; Kring and Gordon 1998; Lynn and Martin 1997).

The emancipation of women since the 1960s, which has proceeded at breakneck speed, could be seen as an unalloyed triumph. The principal drivers have been:

- 1 easily accessible contraception;
- 2 burgeoning service sector jobs;
- 3 the expansion of subsidized higher education;
- 4 the extension of state welfare interventions in areas such as health, child-care, and child support; and

- 5 the ideational change led not least by feminists themselves and a growing cadre of academics and public intellectuals.

The causes and consequences of this transformation in gender relations are important because, as we will show, the new configuration has an enormous ecological footprint and is very much implicated in the growth regime, and the iterative expansion of the circuits of State and Market, and the eclipse of the balancing domain of Livelihood. Moreover, at the same time, this model has become the default model for public policy in relation to gender and development, not just in the institutions of the UN and World Bank, but OECD national aid programmes and the work of influential non-governmental organizations (NGOs) such as Oxfam.

From the 1960s, contraception and emancipated attitudes to sex outside marriage, liberated women from some elements of male dominance, giving them control over their fertility and enabling the joy of sex to be decoupled from the business of childrearing. This social and technological transformation had unintended consequences. In some ways, men also benefited because less constrained by a 'biological clock' and more able to defer any long-term desire to have children, the new sexual freedom gave licence to male irresponsibility – a structure of effect and psychological formation that has had lasting consequences (Regnerus 2017). At the same time as broaching a demographic threshold for unmarried motherhood, the new culture undermined marriage and made single parenthood acceptable. For educated and wealthy women, this was sometimes experienced as some kind of freedom – albeit often with some ambiguity and trade-off relating to the multiple burdens associated with 'having it all'. For poor working-class women, the result was more often a new dependence on the institutions of the welfare state, which took over as 'father' of last resort. For young men growing up without fathers, the result has often been social dysfunction and greater criminalization and contact with the criminal justice system (Krumholz 2018; Rowe 2007). At both ends of the class system, the resulting matrix of transactional, impermanent, flexible relationships is an aspect of what Bauman refers to as 'liquid love' (2007). Wealthy middle-class people still tend to emerge from this culturally sanctioned liquidity to form marriages (albeit more than a decade later than their parents) for the purpose of childrearing and old-age – and on average they accrue significant financial, psychological, and health advantages by doing so. More generally, whether experienced as instability, risk, and loneliness, or excitement and self-actualizing control, this new culture of sex and relationships certainly reflects the mores of a society that privileges social and spatial mobility, personal autonomy, and an idolatrous preoccupation with choice. It is almost impossible to reconcile the views of conservative critics, such as Jennifer Roback, for whom the breakdown of marriage has been an unalloyed societal disaster (2018), with progressives who focus on the freedom of life-choices now experienced by people previously oppressed and marginalized on account of their sexuality.

From the Livelihood perspective, these contrasting evaluations are, to some extent, moot. Two things stand out about this new sex, relationships, and childrearing regime. Firstly, it is very much a function of economic growth. Sexual freedom and the expansion of autonomy and choice was very much a function of the viscous society of individuals and the enormous occupational, social, and spatial mobility engendered by consumer capitalism. High wages, a massive proliferation of service sector jobs, the emergence of a youth culture, a long-subsidized transition period between youth and adulthood in the form of higher education, a strong counter-cultural (and now cultural) endorsement of experimentation – are all direct or indirect functions of economic growth. The expansion of the welfare state and its role in supporting single mothers, the extension of fertility treatment for women attempting to start families decades later than their grandmothers speak to the role of the emergence of the *State* as the survival unit of last resort, the extended and now nuclear family becoming a residual support for swathes of the population (wealthy middle-class families being, as usual, the exception). It is more accurate to refer to the State–Market because this safety networks in conjunction with employment and myriad forms of private insurance. The elimination of barriers to women entering the labour force – even archetypically male occupations such as the military or fire brigade – makes it possible for women to chart a life course, not necessarily without men, but without depending on male support. The massive expansion of the housing market and steadily rising property values, private pension schemes, and (for women in particular) the enormous growth in public sector employment, funded from tax receipts, all operate in concert to underpin the autonomy of both men and women from the exigencies of family and place-bound community. It is capitalist modernization and reliable, continuing economic growth that have created and sustain the society of individuals (Elias 2001).

Secondly, for all the undoubted benefits, it carries a burden of social and psychological costs to all genders and sexes. Against the backdrop of rising instability resulting from an increasingly individualistic and ‘therapeutic’ culture of narcissism (Rieff and Lasch-Quinn 2007; Hartt 1980), the new freedoms were experienced often in terms of an anxiety-inducing tyranny of choice (Beck 1992). Although women with liberal progressive values championed the new regime, research over successive decades has shown that: in middle-income households, at least, women with families and working part-time tend to be happier than both full-time professionals and housewives (Beja 2014); that, not surprisingly, professional women experience great anxiety and stress consequent upon the double burden of reconciling domestic and work roles (Tower and Alkadry 2008; Mountz 2016); and finally that both single mothers are less happy (Ifcher and Zarghamee 2014) and also experience greater mental health problems than married women (Crosier, Butterworth, and Rodgers 2007).

The intrinsic relation between the progressive matrix of gender/sex/family/work relations and economic growth poses a real problem for mainstream feminism – precisely because it has so emphasized equality within the

formal economy and in access to the services provided by the state and has consequently accepted as a given the relation between the domestic sphere (the residual and rather emaciated domain of Livelihood in late capitalist economies) and the State–Market. Thus, critiquing emancipation through growth, Paulson reflects on the way that empowering women into the masculine-productive realm of paid labour has engendered a conservative backlash in the form of ‘reactionary discourses ... [which blame] women’s move into the paid productive realm as the cause of negative outcomes ranging from rising divorce, teen delinquency, drug abuse, and community disintegration’ (Paulson 2018, 7). She is of course right that the progressive matrix has been associated with some of these societal dysfunctions, and also that right-wing ‘market liberal’ politics has often attacked feminism also without questioning the historically unprecedented and separation of work and home, of Livelihood and State–Market. On the other hand, there has always been a vibrant social-conservative tradition that is constructed on precisely such a critique – not least the social catholic tradition of distributism (Schumacher 2011; Mitchell and Peters 2018; Pearce 2014). From this perspective, there is a great deal more potential overlap between feminism, paleo-conservatism, and green politics than either side might imagine.

Unfortunately, for mainstream feminism and greens, there are real wicked dilemmas, which inhere to this relation growth economics and the progressive matrix. Taken-for-granted rights, institutions, and practices and even values associated variously with women’s rights may be forms of low-entropy forms of social complexity (Chapter 2) and they may be a function of the liquid-modern ‘society of individuals’ and the flows of energy and materials that sustain it. The extent to which this progressive matrix may, or may not, be compatible with a post-growth economy would depend a great deal on the extent to which the State–Market actually contracts but also the very contingency and contextual character of Livelihood cultures which will vary between communities and nations.

Bearing this in mind, many of the targets within SDG 5 are vital and non-negotiable. These include: 5.1 ‘End all forms of discrimination against all women and girls everywhere;’ and 5.3 ‘Eliminate all harmful practices, such as child, early and forced marriage and female genital mutilation;’ But having said this, SDG 5 does not challenge the sexist valuation of the State–Market (the public worlds of work and state services) over Livelihood, and specifically the domestic sphere as a nexus not only of reproduction but of production. Target 5.4 does nod in the direction of Livelihood, saying ‘Recognize and value unpaid care and domestic work through the provision of public services, infrastructure and social protection policies and the promotion of shared responsibility within the household and the family as nationally appropriate;’ (‘The Sustainable Development Goals Report 2020’ 2020). However, the only indicator is the ‘Proportion of time spent on unpaid domestic and care work, by sex, age and location’ (‘The Sustainable Development Goals Report 2020’ 2020) and there is no implication that this time devoted to household activities might actually increase for both all genders and sexes.

In what follows, we focus on the outcomes and impacts of the COVID-19 crisis on women because the pandemic provided a glimpse of what would happen, given the existing economic structure, with a transition to a low-growth economy. Exploring the current role of women within the formal economy, we go on to analyse the disproportionate impact of the COVID-19 crisis on women. We conclude by suggesting the kinds of targets that would be necessary for SDG 5 to ameliorate such problems in the future and to take advantage of an expansion of the Livelihood economy.

Women and devalued work

The COVID-19 crisis exemplifies how the current division of labour and the progressive configuration of sex-gender-work-family quickly becomes problematic for women in a period of economic stress. Women have borne the additional household burden during the pandemic and 70 per cent of all healthcare and social workers are women ('The Sustainable Development Goals Report 2020' 2020). No other intentional or unplanned environmental or economic disruptions have impacted humanity's social organization and collective environmental footprint (McGrath 2020). Understanding implications of the crisis in relation to adaptation strategies for the future is critical for facilitating longer, intentional, and larger societal transitions (Boons et al. 2020). While ecological economists are beginning to explore the role of women and unpaid labour more directly (Perkins 2010; Spencer, Perkins, and Erickson 2018; Ruder and Sanniti 2019), little has adequately informed policy around burden of risk and unpaid care work disproportionately served by women and girls (Bauhardt 2014; Biesecker and Hofmeister 2010).

Globally, women account for over three-quarters of unpaid care work and make up two-thirds of all paid care workers (Addati and Cattaneo 2018). The

Box 11.1 Unpaid work in numbers

Rate within unpaid household work: 93 per cent of mothers versus 76 per cent of fathers.

Father participation increased by 25 per cent between 1986 and 2015; however, mothers account for nearly two-thirds of all unpaid housework in 2015.

Rate of attention to additional activities while tending to children: nearly 50 per cent of mothers and 30 per cent of fathers.

In nearly all categories of paid work, mothers were more likely to have provided childcare responsibilities than fathers.

Mothers were more likely to have provided childcare after a normal eight-hour working day than a father who had not worked at all.

(Houle et al. 2017)

presence of young children exacerbates this creating a ‘motherhood employment penalty’ and a ‘fatherhood employment premium’ in which fathers with young children report the highest employment-to-population ratios compared to non-fathers, non-mothers, and mothers collectively (International Labour Organization 2020). Over the last three decades, Canadian mothers have increasingly moved into the paid labour market, but the rate of mothers in unpaid household work remains higher than what is contributed by fathers (see Box 11.1) (Houle et al. 2017). These additional assigned roles result in higher rates of mental health issues in women (Schulte 2019). Now, lockdowns associated with COVID-19 have exacerbated these divides. In both North and South, the continuing reality of unpaid labour that is also unrecognized speaks to the persistence of the traditional Livelihood economy. In developing countries with much larger informal economies, a strong culture of do-it-yourself (DIY) localism and a significant residual peasant culture, the encroachments of the State–Market, has yet to displace completely the domain of Livelihood. In the Global North, the ongoing feminist problematic of unpaid domestic labour provides a political opportunity that could go three ways. Demand for this work to be formalized and paid as a regular part of the economy would add further momentum to the growth economy – not least since such payments would come out of general taxation. A universal basic income scheme would have the same effect, unless it was linked to a corollary contraction in the welfare state – in which case, it could be used to underwrite a smaller social compact and an expansion in the role of family, community, and relational networks in the safety-net or ‘survival unit’.

What happened to women during the COVID-19 pandemic?

Antonio Guterres, United Nations Secretary-General, said that ‘COVID-19 could reverse the limited progress that has been made on gender equality and women’s rights’ (2020). The increase for unpaid care work increased significantly during the pandemic, and women and girls were expected to shoulder the additional burden (International Labour Organization 2020; United Nations and Department of Economic and Social Affairs 2020). During the pandemic, a preliminary study, conducted by author Kish, with mothers in Ontario, Canada. The research sought to understand how the pandemic is impacting women and the degree to which women are shouldering the additional unpaid burden in their household, and why. The mothers in the study, all in middle to upper-middle-class income brackets and living in traditional nuclear families with at least two children, highlighted various themes necessary for future research on the impacts of low-growth scenarios on women (Box 11.2).

In all cases where the families needed a parent to stay home to take over childcare due to lockdown and closure of schools, the mother left her job. When asked why the mother quit instead of the father, the answers varied from the mother making less money to distrust in the husband’s ability to sufficiently

Box 11.2 Impacts of COVID-19 on the experience of mothers in Kitchener-Waterloo, Ontario

Fifty per cent of families needed a parent to leave their job for child-care purposes, in all cases the mother quit.

All mothers in the study reported decreased productivity at work.

Of the mothers, 78 per cent reported extreme increases in anxiety and 55 per cent of them started antianxiety, antipsychotic, or antidepressant medication since March 2020 (time of first lockdowns).

All mothers expressed a loss of personal time, higher reliance on ultra-processed foods, and feelings of loneliness, disconnection, and loss of self.

(Kish and Sanniti 2021)

care for the children or a complete refusal from the fathers to quit their jobs. The 35 per cent of women working from home while providing childcare reported working more than ever but feeling less successful and fulfilled from both childcare and work. Fifteen per cent of the mothers were unable to quit their jobs but were able to move to nightshifts to work all evening and provide childcare during the day. A feminist reading of these results paints a picture of socially constructed gender roles and exclusionary power dynamics over-riding female choices. Some may argue that greater innate attachment to young children in particular, and already experiencing cognitive and affective dissonance about the conflict between childcare and work roles, some of the women found the necessity to choose children over work an easier dilemma than their husbands or partners. Innate differences in personality and interest are not enormous but nevertheless significant, as is evident in the gender-equality paradox: i.e. that female participation in 'thing-related' rather than relationship-centred science, technology, engineering, and medicine (STEM) subjects, declines markedly in wealthier and more gender-equal societies, where autonomy and choice are less dependent on performance in the labour market (O'Grady 2018; Khazan 2018; Stoet and Geary 2018).

Findings like this are problematic for traditional feminist strategies that centre on individual autonomy through the State–Market and suggest that women's emancipation has hit an inevitable point of diminishing returns – inevitable because, to the extent that the domains of work and household are separated, women will always be stretched in the no-win attempt to straddle both worlds. By the same token, the post-growth prospect of the State–Market being balanced by a re-emerging Livelihood domain seems to present untapped opportunities for feminists. It also offers a surprising convergence between limits-sensitive greens, motherhood sensitive-feminists and corporate-sceptical social conservatives (but equally a divergence from both right-wing market-liberals and neo-conservatives on the one hand, and

state-oriented social democrats and cosmopolitan liberal ‘globalists’ on the other).

The need for a shift away from both over reliance on the State–Market and an overly feminized domain of Livelihood

Existing social constructs of the home engrain specific ideas regarding expectations and responsibilities that create ongoing barriers for women and make them the default fallback option for unpaid work. Despite the participation of women in the labour force, at all life stages male sex is the strongest predictor of housework duties being subordinated to paid work hours (Horne et al. 2018). Similarly, in Canada, when families experience unexpected housebound medical emergencies, gendered expectations of care were universally assumed (Bezanson and Luxton 2006). The continuation of the feminized reproductive sphere continues to put more work on the shoulders of women.

These statistics underline the wicked and paradoxical relation between women’s emancipation and the growth economy. If consideration of biophysical limits points to a contraction in the State–Market and a rebalancing expansion of the Livelihood domain, this intimates opportunities for a different kind of view of the home as a radical centre for resistance against capitalist production. The rehabilitation of networked households undergirding vital local communities and a richer interplay between informal and formal economies would simultaneously enhance the status and significance of Livelihood whilst moving away from the hegemonic conception of a neutered, feminized domestic sphere. Such a rebalancing at the level of political economy would at least potentially, facilitate a rebalancing of male and female roles in terms of partnership, re-establishing the household rather than the individual as the fundamental unit of the economy.

Throughout Part I of this book, we have argued that increasing societal complexity is linked to expanding flows of energy and decreasing entropy (Chaisson 2001; Quilley 2011). The more complex society becomes, the more potentially fragile and ecologically devastating the structures of political economy. This applies to the complexity of technology or economic configurations and the intricacies and historical underlay of ethical mores and taken-for-granted assumptions about democracy, sexual freedom, expectations of dignity and autonomy for people with disability, gender equality, or universal human rights. In this book and elsewhere (Kish and Quilley 2017; Quilley 2013; Orr, Kish, and Jennings 2020), we argue that the pursuit of individual and extended rights has come at an environmental cost; and that as they look towards systemic contraction and degrowth, modern societies may face inevitable trade-offs in relation to these domains. Thus, for example, equality before the law is a foundational liberal value. In a diverse society this entails the availability of state-sponsored translation services. The more diversity, the greater the associated cost – which in our current system must be met from general taxation, which is to say fiscal transfers from a growing economy. Any context of permanent

contraction would put such services – the most recent add-ons to the panoply of provisions associated with the social compact of the welfare state – at immediate risk. This is one small way that systemic austerity would present a terminal threat, in this case to multi-cultural social cohesion and the realization of the principle of legal equality. Such trade-offs would feature in every area of social life.

With regard to gender equality, the global pandemic has already penalized women while simultaneously facilitating the greatest reduction in carbon emissions since the Industrial Revolution (Topping 2020). However, it is possible that the deconstruction of the modernist systems that, at least in part, engendered the need for women's rights in the first place could result in novel gender equity orientations that embody a 'post-liberal philosophy' in a degrowth context (Milbank and Pabst 2016).

A radical polis-oikos

In response to the over-valuation of the economy's State and Market domains, women strive for careers that are deemed valuable while continuing to shoulder a residualized domestic burden, which is devalued. However, if the SDGs are to foreground the significance of Livelihood as a third leg, balance the State–Market, then the value and power of work conducted by people in household and commons domains must be recognized. Individuals, regardless of gender, who choose to spend their time in house or commons domains are going against the modernist capitalist order as they choose to accept lower incomes, and to value family and community over material consumption. In this way they also contribute to the domain of reproduction. This radical 'polis-oikos' – a political economy balancing the formal economy, the polity and the resurgent household – can only happen if we re-evaluate and honour the deeply valuable work conducted within the home and commons.

In a research project to explore the kinds of trade-offs and implications of degrowth and informal economies on the individual, participants tended to return to gendered activities, which is to say a traditional sexual division of labour. However, at the same time, the women were upheld as the life-blood of communities – the reproductive sphere was more greatly valued than activities associated with the market or state (Kish 2018). While the women invariably relied on their partner's traditional incomes, there was broad acceptance that reproductive and household activity holds equal, if not more, value, and that the monetary jobs were simply a means to an end. While the women knew that many outside their immediate community see their positions as undervalued and 'unprogressive', they suggested that the freedom, independence, confidence, and creative expression, alongside the ability to control community priorities and direction, made their positions highly powerful and fulfilling.

The women in the study also found that removing themselves from the 'masculine' productive sphere in the formal economy helped to improve

their mental health and removed the guilt associated with time split between mothering and working. One woman said that her decision to quit her high-powered job and make the home a place for radical resistance against participation in the capitalist system was highly empowering. When judged by other women for ‘wasting’ her potential, she responded:

I think there is a difference between letting women do whatever they want, and allowing women to be happy with whatever they want. No one woman should feel more successful than the other because she has decided to put her life force into something different than another. My sister is the CEO of a large company, she’s incredibly impressive. I am the mother of 4 wonderful children, I am equally as impressive. My neighbour is the neighbourhood community organizer, she is wonderfully impressive. We all have different roles to play.

(Kish 2018, 142)

Other participants [suggested that] they had no use for a feminism that would lead young women to fight against one another to be the best. The standard norm of empowerment as working outside of the home is insufficient and even deleterious for degrowth and sustainability economics.

The household keeps society functioning. It is the role of degrowth scholars, and the SDGs, to value this work appropriately. When women began re-joining the workplace in the 1960s, family organization became more complex and work became a central the central pace-maker and coordinating structure in the household – instant meals, less time with children, more time commuting. However, we know that ‘these norms did not come from the Garden of Eden. Over generations, different kinds of policies and propaganda have influenced the adaptation of gender and kinship systems to produce bodies and identities that serve the evolving growth machine’ (Paulson 2018, 9). Now that we see the social and environmental impacts of this, and younger women are beginning to feel the pressure of career versus having children, it is time to re-evaluate that process – not to take that pressure off of women, but to explore and uncover ways that all genders and sexes can bring *polis* and *oikos* together in a radical way. The vital role of the household is in a radical, life-giving, care-providing, and life-sustaining politic. We are not arguing that every woman should, or needs, to do this. Simply that those who already do stay at home or choose less stressful careers should be heralded as activists going against a powerful system (Mahon and Robinson 2011).

Such a radical polis-oikos can be achieved by the inclusion of additional SDG 5 targets, such as:

- Increase value and investment in reproductive realms; create value (care income) and reward for labour conducted for care, sustenance, and life
- Support education for young men that positively encourages care of families, communities, and the environment

- Redefine success of the individual from monetary success to value provided to community; use progressive indicators that include the household, commons, and volunteer work
- Help children to build self-esteem through community and care obligations and orientations
- Libertarian economic policies for households radically reducing the unit financial and regulatory costs of domestic production and processing
- Endorsement of self-organized communitarian approaches to health and elder care as vehicle for social capital formation
- Active endorsement alternative school options such as homeschooling and self-organized community schools
- Networked households and communities enrolled into some domains of restorative justice – particularly involving anti-social behaviour by children and teenagers, neighbour disputes, and so forth
- Explicit roles for community elders (disproportionately women) in neighbourhood governance, reinforced by rituals (street parties, Mayoral processions, feasting, award-days)
- Clear and unambiguous endorsement of the principle of subsidiarity as it pertains to households and communities (and associated measures and indexes)

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12 Are there environmental limits to achieving equality between humans?

Jen Gobby, Samantha Mailhot, and Rachel Ivey

SDG #10: Reduce inequality within and among countries

‘Economic inequality is out of control’, declared the 2020 Oxfam report (Pimentel et al. 2020, 2). This report exposed that ‘in 2019, the world’s billionaires, only 2,153 people, had more wealth than 4.6 billion people’ (ibid). Despite efforts to address rampant inequality, there are huge and mounting disparities within and among countries in terms of the power, opportunity, and income people have access to.

SDG #10 – *Reduced Inequalities* – aims to address this mounting crisis by reducing inequality both within and among countries by offering countries a series of targets to work towards. These include aspirations to

progressively achieve and sustain income growth of the bottom 40 per cent of the population at a rate higher than the national average; empower and promote the social, economic and political inclusion of all, irrespective of age, sex, disability, race, ethnicity, origin, religion or economic or other status.

(UN n.d.)

The targets also aim to ‘[e]nsure equal opportunity and reduce inequalities of outcome, including by eliminating discriminatory laws, policies and practices and promoting appropriate legislation, policies and action in this regard’ along with 7 other targets (UN n.d.).

The SDG website makes clear that though there are some ‘positive signs of reducing inequality in some dimensions ... inequality still persists in all forms’ and that the COVID-19 crisis is currently exposing and exacerbating the profound inequalities that exist within and among countries (UN n.d.).

The UN’s webpage about SDG #10 makes no mention about the environment, or about how this social goal relates to any of the SDGs aimed at ecological sustainability.

In a time of mounting and converging social and ecological crises, it is imperative to consider the impacts certain goals may have on others. Lacking

this type of analysis from the UN, in this chapter we investigate the implications of increasing human equality for the rest of life on Earth. We explore the environmental impacts associated with reducing inequality, overview various lines of arguments related to this, and ask two pointed questions:

- Are there biophysical limits to achieving equality between humans?
- Is it possible to meet humans needs, in an equitable way, within planetary biophysical limits?

We argue that while there are very real planetary boundaries to what humans can achieve, it is possible to progress towards equality between humans *within these limits*. But doing so will require questioning – and radical upending – two economic phenomena that go unquestioned in the SDGs framework and within the capitalist economic paradigm more generally: (1) *endless economic growth* and (2) *extreme wealth*. This will require structural change that may not seem politically feasible, but is existentially necessary, nonetheless.

Are there biophysical limits to achieving equality between humans?

There is legitimate reason to be concerned that increasing equality between humans will have detrimental environmental impacts. Much of what we humans need to live a decent life – from food, shelter and clothing to electricity and transport – requires material and energy. This drives natural resource extraction, processing, transportation, consumption as well as the generation of pollution and waste. It is reasonable to worry that bringing millions of people out of poverty will require material and energy that exceeds what the Earth can provide.

Such concerns can be observed in this following type of argument, not uncommon within mainstream environmental discourse:

More people using more fossil fuels means more climate change; more people eating more food means more land conversion (with associated loss of biodiversity), more overdraft of groundwater for irrigation, and more pressure on threatened marine resources; and more people consuming more material goods potentially means more toxic waste products and more mining.

(Ehrlich and Harte 2015a, 904)

In this quote, Ehrlich and Harte are taking aim at the ecological impacts of population growth. But the same concerns are commonly laid against the idea of poor people gaining access to the necessities of life.

An article on BBC Earth puts it plainly: ‘the planet is not expanding. There is only so much space on Earth, not to mention only so many resources – food,

water and energy – that can support a human population’ (Cumming 2016, n.p.). But this concern is further qualified:

The real concern would be if the people living in [low-income nations] ... decided to demand the lifestyles and consumption rates currently considered normal in high-income nations; something many would argue is only fair. If they do, the impact ... could be much larger.

(Cumming 2016, n.p.)

Indeed, there is empirical evidence that bolsters these concerns. In the influential article, ‘A Good Life for All within Planetary Boundaries’, O’Neill et al. (2018) report that of 150 countries assessed, no country meets basic needs for all its citizens at global sustainable levels of resource use. They found that with a few exceptions, the more *social thresholds* a country achieves, more *biophysical boundaries* are transgressed (O’Neill et al. 2018, emphasis added).

Is it possible to meet humans needs, in an equitable way, within planetary biophysical limits?

Given that humanity is already pushing up against very real planetary limits (Rockström et al. 2009), is it reasonable to think that all humans currently on Earth could have equitable access to the basic necessities of life? In other words, it is possible to make progress on SDG #10 without impeding the work towards the environmental-focused SDGs: Climate Action (SDG #13), Sustainable Production and Consumption (#12), Life on Land (#15), and Life Below Water (#14)? Based on our review of the literature, we argue that, *yes, it is possible*.

Though the findings presented in the aforementioned article, ‘A Good Life for All within Planetary Boundaries’, appear to indicate that it might not be possible for countries to meet basic needs for all citizens within sustainable levels of resources use, additional findings from that research suggest that if provisioning systems are *fundamentally restructured* to meet human needs at much lower levels of resource use, it is possible for basic physical needs (as well as education, life expectancy, equality and others) to be met without transgressing planetary boundaries (O’Neill et al. 2018). The authors argue that this will require *significantly reducing resource use in many wealthy countries*, which can be done without negatively affecting well-being in these wealthy countries (O’Neill et al. 2018).

These findings echo other calls to tackle economic inequality by focusing, not just on the problem of poverty, but on the problem of over-consumption and *extreme wealth*.

Focusing on over-consumption and extreme wealth

The 2020 Oxfam report found global economic inequality to be growing rapidly. They exposed that the world’s *42 richest people* hold more wealth than *the poorest half* of the human population. The report goes on to explain that

The year 2017 saw the biggest increase in billionaires in history, one more every two days. This huge increase could have ended global extreme poverty seven times over. Eighty-two percent of all wealth created in [2019] went to the top 1%, and nothing went to the bottom 50%. Dangerous, poorly paid work for the many is supporting extreme wealth for the few.

(Pimentel et al. 2020, 2)

Increasingly, masses of people suffer from extreme poverty while very few powerful people are obscenely rich. Furthermore, this excessive wealth is actually *driving poverty*. Philip Alston, the United Nations special rapporteur on extreme poverty and human rights, has made clear that the capacity of the poor to exercise or realize their rights ‘diminishes relatively, if not absolutely, as others become wealthier and gain greater political and economic power’ (quoted in Hickel 2019b, 416).

This extreme wealth is not only driving poverty and inequality, but it also has enormous environmental impacts. Indeed, affluence is widely recognized as a core driver of environmental damage (Millward-Hopkins et al. 2020). The recent report titled ‘Confronting Carbon Inequality’ found that the richest 10 per cent account for 52 per cent of the carbon emitted into the atmosphere between 1990 and 2015 (Gore 2020). The accumulation of wealth of the very rich few is happening at the expense of poor people, and at the expense of ecosystems and non-human life on Earth. To make matters even more glaringly unreasonable, in wealthy countries, high levels of energy use is not actually providing increased well-being, as social returns on energy consumption per capita become increasingly marginal (Millward-Hopkins et al. 2020). It has been shown that in countries with the highest consumption rates, cuts of roughly 95 per cent in consumption are possible while still providing decent living standards to all (Millward-Hopkins et al. 2020).

Given all this, it seems that the way forward for pursuing equality and the SDG #10 is not through extracting more resources from the Earth to bring people out of poverty, but instead by focusing on *redistribution of wealth and a fair sharing of resources*. Rather than extracting more from nature to provide basic needs for all, it is much more ecologically feasible and efficient to focus on redistribution. We don’t actually need to use more of the Earth’s resources, we just need to be sharing them much more fairly.

Not only is it theoretically possible to achieve a good life for all within planetary boundaries, but it appears that this can be done with less consumption than that exists today. Based on a model developed to estimate a minimal level of energy consumption required to provide decent material livings to the entire global population, Millward-Hopkins et al. show that through a combination of efficient technologies and *radical demand side transformations that reduce excess consumption* to sufficiency levels, ‘final energy requirements for providing decent living standards to global population in 2050 could be over 60% lower than consumption today’ (2020, 2).

Overall, it is clear that fairer distributive policies are key to achieving a good life for all within planetary boundaries (Hickel 2019a). That said, it's important to note that such income transfers would not address the underlying causes of the poverty problem. To address the drivers of poverty, the global economy would need to be made more fair by, for example: ending tax evasion and illicit financial flows; renegotiating trade agreements to allow poor countries to use tariffs and subsidies; democratizing the World Bank, the International Monetary Fund, and the World Trade Organization; abolishing structural adjustment conditions on finance; decommodifying medicines and essential technology; and introducing a global minimum wage (Hickel 2019b).

An attentive reader might be eager to point out that while this all sounds like a good idea, it is just not politically feasible, and therefore other routes to increasing equality must be sought. Here's the problem: the only real option other than learning to share the economic pie more fairly is to grow a bigger pie. A bigger pie is more politically feasible because there can be more wealth and resources for the poor without asking the rich to relinquish wealth or excessive levels of consumption. However, on a finite planet, the economic pie can only grow for so long, and only get so big.

Endless economic growth is not possible on a finite planet

Capitalist economies have certain inherent characteristics, including the continuous need to grow in order to survive. This perpetual growth requires the increasing flows of raw material, natural resources, energy, and labour (Whyte 2018; Kohn and Reddy 2017; Clark and York 2005). The material demands of endlessly expanding economies have been outpacing the Earth's ability to regenerate the raw materials needed to absorb the wastes being produced (Rockström et al. 2009). To tackle climate change and other environmental crises, economic systems need to be transformed away from growth-driven capitalism (Clark and York 2005; Klein 2014).

It's not just that endless economic growth is bad for the planet, it's actually just not possible. As degrowth proponents point out, given undeniable biophysical limitations, it is not about *whether* the economy will contract but it's about *when* (Jackson 2009). Degrowth offers pathways forward for economic contraction that is planned, as opposed to forced through ecological and social crises. It offers a transition plan to a new economic system that is compatible with ecological sustainability.

Proponents of economic growth commonly defend growth as necessary for bringing poor communities out of poverty, and indeed, many income redistribution mechanisms – at least in theory – depend on growth. However, what we see in practice is that 'economic growth is usually accompanied by increases in both economic and political inequity, and worsening income distribution' (Perkins 2019, 186; see also Piketty 2014; Pickett and Wilkinson 2010; Causa et al. 2014; Ray 2010). To put it simply, '[e]conomic growth nearly always heightens inequities' (Perkins 2019, 183). A lack of policies and institutions

to ensure that increased GDP is equitably distributed across society creates an endless cycle whereby ‘wealth begets more wealth and political power ... The tendency ... for the powerful to keep coming out better off, and for exploitation of less-powerful people and of nature to accelerate, is the prime driver of climate change’ (Perkins 2019, 183; see also Klein 2014; Douthwaite 1993; Tokar and Gilbertson 2020; Whyte 2018).

Conventional economic theory sees increasing inequality as a feature of early industrialization, claiming that as countries get richer, inequality declines. But this is not the case. Since 1980, economic growth has come with *more, not less*, inequality (Piketty 2014; Kallis et al. 2020). In response to economic stagnation in the 1970s, the US, UK, and other governments began to adopt and aggressively promote neoliberal policy. As Kallis et al. explain, ‘economies were aggressively re-engineered via neoliberal reforms designed to rekindle growth for the wealthy, with the promise that prosperity would “trickle down” to the rest’ (2020, 29). These policies have sought growth through deregulation and privatization, by gutting public services and by minimizing production costs through limiting wages, cutting benefits, and weakening unions and labour standards (Kallis et al. 2020). Through all this, economic gains have been redistributed towards the wealthiest, driving increased inequalities within and among countries (Kallis et al. 2020). Within this neoliberal paradigm, economic growth is used to justify elites paying less taxes, and through this ‘relative poverty has become a structural feature of contemporary economies, no matter how much they grow’ (Kallis et al. 2020, 122).

Despite phenomenal growth in recent decades, there are 40 million poor in the US, and 11 million in the UK – 12% and 17% of the population respectively – the same share as in the 1970s. In 2008, 24% of people in high-income countries still lived with less than the socially acceptable minimum in their country. Growth is also not an effective mechanism for reducing global poverty. The poorest 60% of humanity receive only 5% of all new income generated by global growth.

(Kallis et al. 2020, 120)

The SDG #10 web page itself provides statistics that corroborate this, explaining that in all countries measured, ‘the bottom 40 percent of the population received less than 25 percent of the overall income or consumption, while the top 10 per cent received at least 20 percent of the income’ (UN, 2021). Economic growth is being accrued to the already wealthy, not to the poor. The pie is getting bigger, but this bigger pie is not helping feed the poor. The wealthy are just eating more and more pie.

It is very important to acknowledge and address this: growth is a failed strategy for meaningfully addressing hunger, poverty, and global inequality (Büchs and Koch 2019). Furthermore, growth is often used as an excuse for *not redistributing wealth*, because redistribution is thought to limit growth. In this way, growth is not only failing to address poverty and inequality, the pursuit

of growth is also serving as a barrier to actually addressing the problem (Kallis et al. 2020).

Mainstream approaches to addressing inequality ignore extreme wealth and redistribution and focus on inclusive economic growth as the solution

If endless economic growth is not possible on a finite planet, and if economic growth is not actually helping increase equality, we need to actively pursue other approaches to addressing inequality. But unfortunately, most mainstream approaches to addressing inequality, including the SDGs, steer clear of redistribution and focus primarily on economic growth as the solution.

Proponents of growth who are concerned about environmental crises, advocate for *clean growth* – the idea that economic growth can be decoupled from extraction and pollution through technological innovations generated by market incentives.

Many committed people respond to today's crises not by questioning growth, but by proposing to make it green and inclusive. Rather than slow down, conservatives and progressives alike have been pushing to grow the pie bigger in order to finance green technologies and social benefits.

(Kallis et al. 2020, 3)

Not only has the idea of decoupling economic growth from environmental strain been challenged (Antal and van den Bergh 2016; Hickel and Kallis 2020; Ward et al. 2016), but these 'green' technologies are unproven as climate mitigation strategies or are dangerous at scale (Hickel and Kallis 2019).

This clean growth approach is not only failing to bring the solutions it promises, but it also diverts attention away from the root causes of the environmental crises and the drivers of inequality (O'Manique 2017; Stuart et al. 2019; Millward-Hopkins et al. 2020).

The SDGs are also perpetuating this failed approach. Indeed, rather than tackling economic growth as a driver of inequality and unsustainability, the very first target for SDG #10 (10.1) depends on growth: 'By 2030, progressively achieve and sustain income growth of the bottom 40 percent of the population at a rate higher than the national average' (UN n.d.). Moreover, there is an entire SDG (#8) devoted to promoting 'sustained, inclusive and sustainable economic growth'.

Of all SDG #10's targets and indicators, none require that countries reduce the unequal distribution of income and wealth within and between countries (Fukuda-Parr 2019).

Fukuda-Parr (2019) explains that there are generally two ways to frame the problem of inequality: (1) 'extreme inequality' and concern over the concentration of power and wealth among the elite and (2) 'exclusion' of the vulnerable and marginalized population from opportunities. Each of these imply very

different kinds of policy response. The *extreme inequality* frame calls for redistribution to address the problem of concentration of wealth and income at the top. It targets root causes and seeks to transform economic institutions, with close attention paid to issues of taxation, investment, and trade. This framing poses a radical challenge to the current economic model. On the other hand, the *exclusion* frame calls for inclusive growth to provide marginalized groups with socioeconomic and political opportunities to escape poverty (Fukuda-Parr 2019). The inclusion agenda is considerably less challenging to the economic interests of powerful actors (Fukuda-Parr 2019).

While both these framings of inequality were present in SDG negotiations, in the end, what we see in the current version of SDG #10 is the predominance of the ‘exclusion’ framing and an almost complete lack of attention to the problem of extreme wealth and extreme inequality (Fukuda-Parr 2019). As such, SDG came to be framed as an agenda for social inclusion and inclusive growth (Fukuda-Parr 2019). The effect of this is that, in the SDG framework

[t]here is no revolutionary restructuring of the basic liberal economy order called for. SDG 10 does not present any sort of ... radical restructuring of economic systems, but instead is fairly well grounded in ... neoliberal orthodoxy. Nothing more radical was likely to be accepted by the drafters of SDG 10 and the international community at large.

(Oestreich 2018, 35)

The SDG framework appears to be held captive to capitalist, neoliberal logic; the very logic that is driving both inequality and environmental crises. This is very important to note because *actually tackling inequality will require that we collectively acknowledge that we cannot solve the crises with the same thinking and tools that are causing them.*

Through this chapter, we’ve argued that while there are very real planetary boundaries to human activity, it is possible to progress towards equality between humans within these limits. However, this will require questioning – and radically upending – two economic phenomena that go unquestioned in the SDGs framework and within the capitalist economic paradigm more generally: (1) *endless economic growth* and (2) *extreme wealth*. To conclude, we offer a list of proposed new SDG targets to illustrate what tackling inequality could look like if the UN and the global community were to acknowledge and address the problems associated with economic growth and extreme wealth.

Proposed new targets for SDG #10

- By 2030, progressively achieve and sustain economic *degrowth* for the wealthiest 40 per cent of countries, with care to redistribute income and wealth fairly within such countries as economic contraction is pursued.
- Ensure equal opportunity and reduce inequalities, including by shortening the working week and sharing necessary labour so as to

improve income and employment without requiring more resources (Hickel 2019a); ensuring income equality through higher minimum and average wages, and affirming the rights of workers to organize and bargain (Kallis et al. 2020).

- Adopt policies to distribute existing wealth and income more fairly. These should include a wealth cap for individuals and groups and steeply progressive taxes, promoting a common sense of ‘enough is enough’ (Kallis et al. 2020); the taxation of luxury and damaging products as means to discourage conspicuous consumption and resource use (Kallis et al. 2020); the reallocation of public resources from fossil fuel subsidies and surplus military spending as direct transfers to the poor (Hickel 2019a); the redistribution of income through universal basic income or universal social services funded by financial transaction tax, carbon tax, resource extraction tax, or wealth tax (Hickel 2019a).
- By 2030 transform the rules of the global economy on trade, debt, tax evasion, and capital flows to ensure that rules are fair to countries in the Global South, so they may claim a greater share of the global GDP (Hickel 2019a); implement globally coordinated progressive taxes on wealth, (capital, large inheritances, and estates) together with a global tax on financial transactions and transnational profits (Kallis et al. 2020; Piketty 2014).
- Ensure that all future SDG negotiations are designed in ways that are procedurally just, whereby those suffering the effects of extreme inequality are at the table and whereby the process is not disproportionately serving the interests of the wealthy. Ensure that there is expertise at the table related to biophysical limits.

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13 A handmade future

Makers, microfabrication, and meaning for ecological and resilient production networks

SDG 12: Ensure sustainable consumption and production patterns

At the onset of the COVID-19 pandemic in 2020, the uncertainty of supply chains provided an early indicator of the disruptive magnitude of the cascading impacts of lockdowns. Across North America, grocery shelves were emptied of toilet paper and pasta sauce as people stockpiled out of fear that production chains would be unable to keep up. There was also an increase in Google searches about self-provisioning, with anxious would-be preppers becoming suddenly interested in ‘gardening’, ‘sourdough’, and ‘do it yourself’ (Figure 13.1).

While many governments resisted large-scale restructuring of economic governance, consumer behaviour changed drastically. With the onset of lockdown, consumers began to experiment with new methods and experienced unfamiliar patterns of motivation. COVID-19 has had an enduring impact on the mindfulness of spending habits, particularly as they pertain to sustainability, increased demand via digital access, a reorientation of brand loyalty, prioritization of companies who support the caring economy, and a ‘homebody’ economy with increased purchases of goods used within the household (Arora et al. 2020). Although the impact of COVID-19 on small businesses has been immensely damaging (Bartik et al. 2020), there is some evidence that smaller-scale, peer-to-peer consumption has increased (Dartnell and Kish 2021) and that ‘Makers’ have stepped up to support community needs (Kish et al. 2021; Ravi et al. 2021; Corsini et al. 2020).

Makers are people who take production into their own hands and spaces. During the COVID-19 crisis, Makers supported local supply chains by producing innovations for the healthcare industry, providing materials for parents unexpectedly finding themselves homeschooling, and providing free public designs for personal protective equipment (Kish et al. 2021). As a collective, Makers rapidly responded in these ways with little motivation beyond their inherent cooperative nature (‘COVID Maker Response’ n.d.). More generally, Maker culture embodies the Stockholm Resilience Center’s Seven Principles for Resilience (Stockholm Resilience Center 2015). Makers maintain diversity

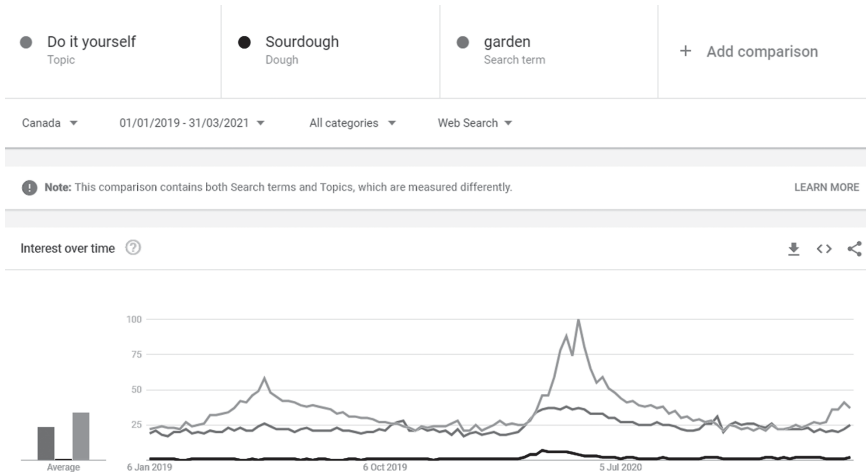


Figure 13.1 Overview of Google searches for characteristics of self-provisioning during COVID-19 lockdowns, such as ‘gardening’, ‘sourdough’, and ‘do it yourself’.

and redundancy through their physical and online networks of Makerspaces and shared knowledge systems. They think in systems by understanding making not simply as ‘productive’ but as a part of a holistic movement towards a new culture. They also encourage learning through mentorship, broaden the participation of production systems, and promote polycentric governance through distributed networks and democratic processes.

Making is behind some of the most innovative responses to modern problems. Makers have contributed significantly to the healthcare and robotics industries while also demonstrating the improved resilience associated with the existence of a Makerspace in a local community (Martin-Noguerol et al. 2020; Tarfaoui et al. 2020; Tino et al. 2020). Rather than responding to a growth imperative, Makers innovate to better their communities and households. Since 2007, the successive 20 new versions of Apple’s flagship iPhone have shown diminishing marginal improvements. In contrast, the phone designed by Makers is modular, allowing for upgrades to single pieces or improvements in those aspects of the technology in which the user is most interested (Seyed, Yang, and Vogel 2017). A user can upgrade the camera or the memory but keep the phone. Unfortunately, because planned obsolescence and ‘buying new’ are deeply ingrained in consumer-capitalist economics, this modular design is unlikely to catch on. However, moving into an unknowable and uncertain future, we may eventually realize that we cannot keep making and throwing away hundreds of millions of new phones. At this point, Maker innovations and the Maker ethos will be waiting. Until then, planned obsolescence and the incessant need for ‘new’ is challenged, albeit at the margins by communities of Makers springing up in every city and town.

As explored in Part I of this book, modern societies' social and economic complexity depends on enormous energy and material flows. The technical innovation and product turnover associated with consumer society have been inseparable from economies of scale, expanding markets, and mass production. Makers reduce overhead costs of production through shorter supply chains, shared manufacturing spaces, and new micro-fabrication and peer-to-peer production systems. With these new systems, the uncoupling of high technology and innovation from the logic of mass production is becoming more conceivable. Looking towards more uncertain futures, there may be an increase in need for on-demand materials, innovations, and devices to respond to crisis. Makers' peer-to-peer community is 'a resilient advanced manufacturing network enabled by the distribution of 3D-printing factories' with great potential for filling such a niche (Choong et al. 2020, 639). As an added benefit, Making is known to significantly improve mental health and well-being (Riley, Corkhill, and Morris 2013; Pöllänen 2015).

The logic of Making is to take the power of production away from multinational corporations whose best interests do not include community well-being or environmental production. Makers help to improve the resilience and adaptiveness of society by, for the first time in two centuries, putting the power of production back into the hands of citizen-consumers.

This chapter explores how manufacturing and production have changed over time and the structural affinity between modern manufacturing and the dynamics and social technics of growth. Biophysical limits and crises relating to global connectivity, it is argued, necessitate a new transition of equal magnitude to the kind of post-growth production regime intimated by the practice of Making. We look at how manufacturing logics helped shape modern mass consumption and how a new wave of production could help move away from globally disembedded value chains.

A brief history of manufacturing

Before the Industrial Revolution, production was primarily artisanal and subsistence-based.

People mostly consumed and used items produced in their local communities and, for the most part, they had no reason or need to look beyond their community for anything they could not access. There was no innovation without reason, and there was no consumption without need. Although most activity was subsistence and needs-based, aesthetic production clearly has a long history before the Industrial Revolution. People still crafted for the sake of beauty, leisure, and the joy of creativity. However, although the imperatives of survival mostly muted such motivations, the less-alienated conditions in which people worked with raw materials often meant that aesthetic values, ontological meaning, and craft-pride were much more embedded in the tools, social relations, and the artefacts that were being produced. From a psychological perspective, artisanal production was much more likely to function as a satisfying

hero or immortality project (Becker 1973). But the low-entropy complexity embodied in such artefacts (Chapter 2; Odum 2007) was lower by orders of magnitude than functionally comparable items produced by globally integrated production chains today. With the Industrial Revolution, factory-based mass production resulted in a dramatic reduction in unit financial- and time-cost of production, at the expense of a massive increase in the throughput of energy and materials. This transition happened not only in the artefacts themselves but also in the increasingly complex production chains, transport, education, and regulatory infrastructures underpinning modern industrialism. Eventually, technical innovation and the sociological process of individualization combined with state welfare and regulatory systems embed a mass consumption structure.

While this improved living standards for nearly all classes, working-class citizens faced long working hours and harsh working conditions. As a result, the first unions emerged to establish protections for workers. Along with Friendly Societies and cooperatives, these new forms of association can be understood as attempts to consolidate community-based survival units separate from family and kin. Such changes contributed to significant modification of global supply and demand chains, for instance, in relation to the demand for different raw materials. While wool was the primary material for hand-spun textiles, technological innovation in factory production increased the demand for cotton, as it was easier to use with the machinery. From the early 1900s, the kind of assembly-line production pioneered by Henry Ford at his Dearborn plant in Michigan led to 10- and 20-fold increases in efficiency and productivity. Spreading quickly into all manufacturing sectors, the cascading impacts of assembly-line productivity were genuinely revolutionary, not least in reducing the cost of luxury consumables such that they became affordable to the workers producing them. The assembly line also necessitated eliminating minor product variations to maximize production runs and the return on investment in particular tooling configurations. As early as 1835, De Tocqueville had identified the logic of product standardization as an essential prerequisite for rising living standards, irrespective of any cost in terms of aesthetic quality.

Despite the manifest benefits of this production system, its critics were, from the start, persistent and vociferous. Whereas the Romantic poets railed against the diabolical human cost of the 'dark satanic mills' and Luddites protested social costs of technology, from the 1880s, inspired by the distinctively anti-modernism of the socialist William Morris and his conservative patron John Ruskin, the Arts and Crafts movement launched a cultural broadside against mass production (Harvey and Press 1991; Thompson 2011; Waggoner 2003; Blakesley 2009). In Late Victorian England, there was growing cultural anxiety as to the impact of the industrial system on, variously, product quality, design, the relationship of craftsman to product, consumer to producer, and the extended division of labour. Calling for reorientation back to handicraft production, the Arts and Crafts movement became a conduit for wider resistance against industrial modernity *per se*. Drawing on elements of guild socialism (A. J. Penty 2018; Cole 2017), social Catholicism (Pope Leo 2002; A. Penty

and Boyle 2019), and Christian socialism (Turner and Hauerwas 2021), the movement was inspired by a somewhat rose-tinted nostalgia for the organic community of medieval society. The movement sought to improve the design of things both internally and externally, that is, in relation to both the process of fabrication and an intrinsic orientation to the authenticity and aesthetic quality of products in their relation to the lives of those using them (Miele 2005). Morris was one of the first to articulate the now common-sense proposition that artisan-produced products engender a sense of ‘specialness’ that provides value beyond utility (Kish 2018). Artisanal production also enhances the relational aspect of consumption.

The Arts and Crafts Movement was not shaped around any particular style, but rather this philosophy of beauty, relationality, and ‘slow’ production (Petrini and Waters 2003). Proponents wanted to see an amelioration of the extreme division of labour characteristic of industrial factories; the endless differentiation and separation of tasks and roles such that workers become increasingly specialized and ever less connected with the product as a whole. Their arguments against the division of labour were at the individual level concerning the laws of comparative advantage and trade between nations. Such hyper-specialization and lack of diversity across different production nodes worldwide is undoubtedly efficient, has driven incredible productivity and generated unprecedented wealth (Pinker 2018). But the same efficiency and lack of redundancy is also a fundamental characteristic of fragility in complex systems. Even small failures in a crucial node within the supply chain system can generate cascading failures worldwide in such systems. This was evident in the slump in semiconductors and computer chip production during the COVID-19 pandemic (Morganteen 2021).

Impacts of mass production on the individual

Mass production systems not only increase the fragility of global production but significantly impact the well-being of individuals, both in terms of alienation (Ollman 1977), factory working conditions and how these systems are designed to increase mass consumption. The realities of factory work remain hidden from the modern consumer. The producer and consumer are so far removed, often by thousands of kilometres, that consumers do not need to think about the conditions, relationships, social context, or other elements of what goes into their consumer durables. Although there has been some pushback on this system in recent years, it remains the primary mode of global production. And yet the SDGs are in no way oriented to the contraction of supply chain networks, local production, or the embedding of ethical purchasing practices. In their current state, the SDGs embody a tacit support for continued wilful ignorance regarding production conditions and disregard for producers’ well-being.

Giddens and Bauman have both explored the relationship between self-identity, comparative measures of success, and consumption. In *Modernity and Self-Identity*, Giddens examines how individuals constantly struggle to maintain

a chosen and performed identity (1991). He argues that a central feature of being a modern individual is this ability and necessity to constantly construct and maintain a self-identity and narrative of who one is, especially in comparison to others. One of the most significant challenges individuals face is the overwhelming amount of (faux) choice in relation to otherwise homogenous options, with companies constantly bombarding individuals with information as to why this or that product is best. Multinational corporations utilize the historical success of brand loyalty and advertising tactics to manipulate consumers into believing their product will bolster self-esteem and the coherence and robustness of individual identity. Individuals are left to navigate an overwhelming field of options with little guidance. This sometimes has little impact on a person's self-esteem but can be devastating in other contexts. For example, there are tens of options for which toothpaste to buy, but ultimately, as long as the consumer brushes their teeth, they achieve the end goal. But when mothers choose a stroller, crib, high chair, or preschool methodology, the stakes are much higher – both in terms of financial outlay and the enormous psychological pressure of doing the right thing for a child. In his book *Freedom*, Bauman explores the double-edged sword of this freedom of choice (1989). Essentially free from oppression, modern individuals are free to make choices – but the choices are so unlimited and overwhelming that there becomes a tyranny of choice. With a decline in the ascriptive patterns of identity associated with traditional relationships (not least 'husband' and 'wife') and a situation of overwhelming choice, individuals are faced with endless and recurring imperative to construct, present, and represent different versions of themselves to a variety of audiences. Since Goffman's (1959) famous elaboration of this process, loosening social mores, the permissive society, the erosion of traditional industries and the idea of a 'job for life', the increasing prevalence of the 'gig economy', and finally the ubiquitous pressure of social media have greatly magnified these problems, engendering a rolling crisis of narcissism, chronic therapeutic instability, and crises of personality and individual development (Rieff and Lasch-Quinn 2007; Lasch 1991).

Bauman argues that advertising is a primary tool used to take advantage of the anxiety felt by individuals caught in this predicament. Advertisements offer relief and alleviate the stress of choice from consumers who can no longer navigate the complexities of choice for themselves. Advertising companies have come to understand the great deal of psychological stress within consumer decision-making. Social media platforms have morphed into social advertising platforms where advertisers use historically effective psychological tactics to alleviate this problem for the consumer (Kish 2020a; O'Neil 2016). In a world of individualization, people are constantly trying to establish and strengthen their self-identity and self-esteem, mainly through consumerism, so these advertising tactics are highly successful (Arndt et al. 2004). By the late 1990s, individuals searching for forms of community lost 100 years earlier tended to replace family, kin, and community identification with peer approval mediated through

consumption – quite literally through the number of ‘likes’ their choices illicit. If the SDGs hope to combat conspicuous consumption, a first step would be to ban or limit advertisers’ access to personal information, and the amount of advertising a company is allowed to stream to individuals. A relevant indicator would highlight the degree of regulatory control that countries are able and willing to impose on powerful tech corporations.

The do-it-yourself alternative

An ‘Arts and Crafts movement 2.0’ is now seeing a revival through more local and artisanal production sold through Esty, online markets, and Instagram. These production systems rely on much shorter supply chains, produce in response to signalled demand, and – engendering considerable economies of scope – create unique goods to consumers’ specifications. In this process, the artefacts that are produced are understood by both parties to have in some way reintegrated the soul of the producer. Local production reduces efficiency, favours artisanal production, and heightens the salience of generalist rather than knowledge as polyvalent craftspeople seek to add skills to their repertoire. Production becomes more based on real community demands rather than the abstractions of mass markets, while the Internet allows these small-scale producers to connect. This blurring of lines between physical and digital production, consumption, and supply chains is sometimes called the Fourth Industrial Revolution (4IR). In this fusion of localism and digitalization, the Internet of Things, 3D printing, and other microfabrication technologies have become increasingly integrated into artisanal production systems.

The 4IR is a Janus-faced development. In the first instance, the thrust of the suite of technological changes, like previous industrial revolutions, will enhance the integration of markets, foster capital mobility, and facilitate the spatial dispersal of ever more complex production chains and differentiated industrial and consumer markets. The COVID-19 pandemic has seen a massive step-change with companies ramping up investment in cloud computing, 5G networks, artificial intelligence applications, and big data (Marr 2020). Everywhere, management consultancies and national development institutions are optimistic about the possibilities for what is in effect understood as a new Kondratiev wave of innovation and growth that will allow developing and middle-income countries such as Malaysia and Nigeria to close the gap (e.g. Maavak and Ariffin 2018). The corporate consensus is that 4IR will drive ‘great manufacturing reset’, a representative Kinsey report (Betti, de Boer, and Giraud 2020) summarizing this innovation momentum in terms of:

- Improved *agility and customer-centricity* across supply chains and facilitates faster recognition of and adjustment to customer preferences;
- *Supply-chain resilience* through connected, reconfigurable *n*-tier supply ecosystems and regionalization;

- Increased *speed and productivity* through automation and selective upskilling; and
- *Eco-efficiency* to accommodate an increasingly complex regulatory landscape.

This dominant version of the 4IR rests on the Buckminster-Fullerian idea of ‘ephemeralization’ (Heylighen 2007) and high-energy, smart technologies. However, the same suite of technologies carries the embryo of new technics centred on Internet-mediated, open-source, peer-to-peer (P2P) collaboration, which undermines intellectual property and with it taken-for-granted corporate monopolies over all areas of the economy. Hyperbole notwithstanding (Rifkin 2014; Steele and Bloom 2012; Tapscott and Williams 2010), open architecture forms innovation, and manufacturing has the potential to be profoundly disruptive. Technical miniaturization, cheap and ubiquitous computer-aided design, and innovative backyard micro-fabrication processes (not least 3D printing) make it at least conceivable to imagine the re-emergence of the world of highly networked polyvalent artisans – a future intimated by playful ‘fab-lab’ workshops (Lipson and Kurman 2013; Gershenfeld 2013). Such developments have fuelled an increasingly vibrant counter-culture of makers engaged in P2P design, hacking spaces, and online communities (Frauenfelder 2011) as well as utopian experimentation by social entrepreneurs, such as Marcin Jakubowski’s open-source ecology (OSE), whose objective is to ‘create low energy, high tech, and distributed forms of civilization’ (‘Open Source Ecology, About’ n.d.).

Borrowing from Chesterton and Belloc, OSE defines distributive economics as:

an economic paradigm which promotes the equitable distribution of wealth through a combination of: open design (of products, processes, services, and other economically significant information), Flexible Fabrication, and Open Business Models, towards replicability. This means that replication is promoted to as many economic players as possible. Here at OSE, an apolitical approach is taken where design is improved by local solutions without invoking the context of centralized power.

(OSE 2021)

Kevin Carson (2010; 2013) argues that open-source micro-production can reduce the unit transformity costs of any given technology by radically reducing the capital overhead costs of production. By localizing and maximally distributing economic activity in fractal ‘presuming’ networks, distributive economics eliminates costs associated with packaging, transport, retailing, and all manner of state regulations. In a

distributed infrastructure ... most of the infrastructural goods are distributed among the endpoints, relations are directly between endpoints without passing through a central hub, and volume is driven entirely by

user demand at the endpoints. Since the capital goods possessed by the endpoints is a minuscule fraction of the cost of a centralized infrastructure, there is no incentive to subordinate end-users to the needs of the infrastructure.

(Carson 2013, n.p.)

Rapid technical progress in areas such as solar power is reducing the relative cost of successor infrastructures so quickly as to present a catastrophic challenge to existing monopolistic and grid-based infrastructures. He argues that mega-utilities corporations could find themselves left high and dry by the possibilities of off-grid supply.

In the 1960s, Fuller was not wrong in pointing out that satellites weighing just a few tons could make redundant earth-bound infrastructure weight hundreds of thousands of tons. However, as Greer (2013a, 2013b) pointed out, the broader distributed transformity cost of the space programme necessary to launch and maintain such satellites almost certainly outweighed the rather trivial differential in weight. Richard Heinberg (2011) makes the same point by rhetorically asking whether it was possible to construct an electric wind turbine using only energy from wind farms.

Whether, over the medium term, open-source, peer production mediated by the Internet and taking advantage of cheap micro-manufacturing will genuinely facilitate local production and consumption cycles is an open question. The disruptive potential is undoubtedly there. Eliminating costly storage, transportation, and grid infrastructural overheads, undercutting the monopolies associated with economies of scale, disincentivizing the cycles of mass advertising, marketing and consumption, genuinely distributed production would, to some extent, reproduce the fractal and nested redundancies associated with biological organisms. For instance, in a multi-celled organism, energy processing occurs in every cell on demand. There is no economy of scale with a single organ responsible for all mitochondrial adenosine diphosphate (ADP)/ adenosine triphosphate (ATP) cycling. This distributed structure and function in living systems allows for the systemic efficiencies of on-demand, closed-loop recycling of materials. Carson's optimistic take on 'ephemeralization' depends on miniaturization dynamics and distributed production taking root across the entire economic landscape. Only when a satellite might be manufactured by a very localized cluster of small firms will the embedded transformity cost of the Internet and global communications begin to fall by orders of magnitude. The central criterion is the extent to which layers of complexity can be dispensed without serious degradation of function. At this point, civilization's unit cost starts to decline, increasing the room for manoeuvre between the maximum scale for ecological integrity and the minimum scale for civilization. When 3D printing of computer chips becomes possible, humanity may be on the cusp of such the revolution anticipated by Rifkin (2014; Brown 2010) when he referred to the imminent transformation of capitalism by the rising 'collaborative commons'. If there is

a plausible route to more equitable and embedded ‘livelihood societies’, this is certainly one point of departure.

Reflecting on this possibility, Fox (2014) identifies three waves of ‘do it yourself’ (DIY) culture in the long arc of human social development. The first agrarian wave was pre-industrial and did not involve specialized tools and materials. Subsistence agriculture involved relatively little specialization, a wide distribution of skills and technical knowledge and little penetration by price-setting markets. In the second wave, the novelty of handmade products was co-opted by multinational corporations producing home kits that people buy and assemble themselves, very characteristic of Ikea. After the Industrial Revolution, making something by hand was for the elite, a thread of criticism that continues today. However, corporations such as Ikea brought handmade production into the home. The second wave of DIY took advantage of the Industrial Revolution’s technological innovation and the social resistance to mass-produced goods and provided individuals with something they could build themselves. These were mass-produced, but the model was highly effective because people were removed from the social and economic implications while simultaneously achieving the psychologically fulfilling part of actually using their hands to create something and having pride in an end product.

The third ‘informational and technological wave’ centres on the digital revolution. Although recent decades have seen some common-pool access to specialized knowledge, this is still largely individualized and operating within ordered State and linked into the network of formal market transactions. Building on this framework, Kish and Dartnell (2021) identify a fourth wave DIY that can enhance resilience and complexity through a mosaic patterning of distributed micro-manufacturing facilities. In this wave, traditional methods of production become paired with online networks of knowledge generation. For example, in a Makerspace, people produce using various mediums – clay, wood, and other materials – to produce a variety of artisanal goods. They also post the ‘how-to-do-it’ bluffer’s guide to their work online and participate in a global community of shared Maker knowledge. This shared knowledge between makerspaces is open source and available freely for anyone. The sharing among different nodes of production centres allows for lack of specialization and access to free and open resources to improve the production within each node. In this way, production becomes integrated into life. Local makerspaces and local production facilities can respond to the community’s needs within which they are nested. These spaces do not mass-produce because they lack the capacity, and instead, they produce for the community’s needs.

Case study: A handmade future

Two of the most fundamental things that differentiate humans from other animals are that we use storytelling to pass on knowledge or teach lessons, and we use increasingly complex tools. When people Make, they tell a story by using tools to enhance life – either for subsistence or play. Conscious, collaborative,

creative activity is so central to human nature (or, to use Marx's term, our 'species being') that defining a distinct domain of Maker culture is difficult because we are all inherently Makers. Maker culture does not just consist of people who are talented carpenters or potters. Makers do not attend special vocational training or pass a specific test. Making is something that we all love to do. Children love to create and do crafts. Adults and children alike gain significant satisfaction and self-esteem from the process of making something (Riley, Corkhill, and Morris 2013; Pöllänen 2015). Even if the outcome is not as good as they hoped it would be, there is great satisfaction in putting oneself into a product, whether it be art, home goods, or just for fun.

Our previous research suggests that making has multiple benefits in a socio-ecological transition (Kish 2018; 2019; 2020b; Kish, Hawreliak, and Quilley 2016; Kish and Quilley 2020; Revkin and Kish 2020). Making is meaningful work that helps build resilient, just, and community-empowered green economies. Those who participate in formal Makerspaces and culture are more likely to show altruistic and prosocial behaviour (Troxler et al. 2020; Vyas 2019; Wolf and Troxler 2016). They see their craft as a way to strengthen friendships (Rodgers and Taves 2017) and believe in the philosophy of 'paying it forward' (Blanchard 2014). When removed from the market, Makerspaces are places that encourage re-enchantment and self-discovery (Blanchard 2014).

While there are various theoretical benefits to making, some examples are being used within a local economic development context. Found just west of the Greater Toronto Area is the Tri-City region of Cambridge, Kitchener, and Waterloo. Each of the cities has a growing claim to fame. Cambridge is a growing commuter city with easy access to Toronto and the Greater Toronto Area, while Waterloo has rapidly taken to tech culture and embraced the identity as the 'Silicon Valley of the North'. Nestled in the middle of these two cities is Kitchener. Once dominated by industrial work, Kitchener is figuring out its new identity as a growing technology hub and home to many socio-economic difficulties. The downtown landscape is sometimes confusing to outsiders, with the shiny new Google building just down the road from safe injection sites and numerous people struggling with housing and drug addiction. To carve out an identity for Kitchener, the local economic development commission began the 'Make it Kitchener' campaign.

The Make it Kitchener campaign was founded in March 2017 as a four-year economic development campaign renewed for 2021–2025. This campaign highlights Kitchener's makers suggesting that the vibrant community of making makes Kitchener 'as a city for tomorrow'. The city

is propelled by entrepreneurs, investors, artists, machine operators, chefs, agents of change, and so many others. Our four-year economic development strategy is about making Kitchener an inspiring place to be, whether you're launching your business, building your career, or supporting your community.

(City of Kitchener 2019)

In this economic development plan, Kitchener focuses on entrepreneurship and ‘more time connecting and less time commuting’ by making dynamic communities within Kitchener. They set out three objectives:

- 1 Support creative experimentation;
- 2 Encourage the intersection of art and industry; and
- 3 Support creative clusters such as music, film, performing arts, and design.

Their strategy for meeting these objectives is to (a) support Maker culture, (b) expand support for maker events (such as the Maker Expo), (c) explore options for more maker spaces, (d) support investment into community tools such as 3D printers and tool libraries, (e) support programming for digital literacy in girls, (f) support hackathons, (g) expand funding for artists in residence programmes, (h) sponsor skill development workshops, and (i) support professional development.

The campaign is meant to piggyback on the popularity of Maker culture while also meeting the needs of those in the community with tactile skills who lost their jobs when the factories left for Hamilton. Maker culture is an interesting example of a widely appealing alternative to consumer society that can disrupt production chains in the wider society, provide experience-based education opportunities, and empower those who want to make a livelihood outside of mainstream systems. While doing so, at least potentially, it reduces stress on the biosphere by engendering meaning-making systems detached from passive consumption, supporting a culture of ‘reduce, reuse, recycle’ and encouraging a local economic system with elements of trade, bartering, and sharing. Kitchener also saw the program benefit different people in different ways. They surveyed thousands of participants. The participants were asked to prioritize a list of five things that they cared about in their community. The list included: (1) experience, (2) restaurants, (3) shops, (4) community, and (5) innovation. Community ended up 4/5 overall, but when it was broken down by geography, the suburban areas ranked community last, and those in the central urban areas ranked it first. The City of Kitchener does not assume this is because the suburbs do not value community, but because it is the reality of life given that these communities more often have steady jobs and larger families. The representatives said:

There is a polar difference between the downtown and the burbs. There is a different desire for community. In the burbs, people are in the rat race. We work long hours, we have kids in a million programs, when do you actually have time to engage in community? So how do we as a city either effect that cycle or work within those networks and neighbourhoods to be part of communities? Making does bring people together, but when you work all day, cut your grass, feed the kids ... that's not what you want to do in the evening. Unless we can start bringing it to their communities more often.

(Kish 2018).

As part of the growing attempt to empower people through making, the City of Kitchener has started providing community grants of up to \$20 000 for community projects, such as a community gardens, park areas, benches, and so on, that encourage community in the suburbs.

Kitchener is an example of a municipal government integrating Making into the local economic development plan. This may not always be possible as governmental organizations are often resistant to change. Communities could also develop not-for-profit organizations to help establish and maintain Maker culture within specific regions. In the small island province in Canada, Prince Edward Island, embedded Maker culture is supported through an initiative called Culture PEI. The initiative aims to improve work conditions and availability for cultural workers such as writers, publishers, crafters, performance artists, librarians, and heritage workers. Culture PEI engages with businesses and the government to help amplify opportunities and provide skill development to help grow the community's creative economy.

The most available research on Makerspaces comes out of the Global North. However, Making has global potential. The Agbogbloshie scrapyards in Accra, Ghana, has gained popularity as a symbol for the outcomes of planned obsolescence. E-waste is shipped to the scrapyards and reused or recycled by inhabitants. Sometimes, it happens through harmful and toxic burning of tires and Styrofoam to melt parts to get copper. However, while mega-tech corporations intentionally conceal and tightly lock the black box of the Global North's technology, in Agbogbloshie, it is an essential part of subsistence. In urban mining, where it is more efficient to mine materials from waste, devices are taken apart with intense detail. They also fix electronics and resell them to those who may not be able to afford new ones. Agbogbloshie is filled with young people who understand electronics' hard and software components better than most North Americans or Europeans who use these technologies' newest and best forms. Those conducting urban mining in Agbogbloshie recycle to an extent the entire world could learn from. There is now a participatory project to retrofit the Agbogbloshie scrapyards in Accra into a Makerspace. In collaboration with Open Science in Haiti and Africa, this new platform uses common spaces to empower cognitive justice – the right for multiple forms of knowledge to co-exist and be used by anyone. It teaches tech literacy, numeracy and helps encourage innovation for more local fabrication.

In South Africa, Making significantly contributes to the informal innovation sector (Kraemer-Mbula and Armstrong 2017). Makers in South Africa push for independent production to demonstrate and expand the ingenuity of Africa. In doing so, Makerspaces and Maker Culture helps to reskill, improve numeracy, and provide sustainable and long-term work (Blanchard 2014). The South African Maker Collective is a national body that helps maximize the socio-economic impact of Maker activities and culture. South Africans make more out of necessity than those in the Global North, and they do so with less access to materials. South Africans have had to create online networks between Makerspaces to share materials and more actively search for people with specialized skills to

learn from. It has resulted in a network that has major making nodes, such as the government-funded eKasi labs in Garankuwa and Soweto, that connect other smaller labs throughout the country. This is a distributed network of localized production – the kind of production chain we may want to see replicated on a more global scale.

The UN's Sustainable Development strategy should implement lessons from global Maker cultures into the SDGs. The SDGs should encourage and measure the amount and kind, of support provided to citizen-owned production spaces such as Makerspaces, tool libraries, and fab labs. There is evidence that these spaces are beneficial regardless of socio-economic context, improve recycling, reduce consumption, and internalizes some production. They help support the community and provide numerous benefits for individual health and education. The SDGs on education should include targets regarding the amount and kind of science, technology, engineering, and medicine (STEM) education initiatives provided by formal educational sectors and governments. Makerspaces in universities help encourage relationships between university theory and community practice, as demonstrated at the University of Ghana's Makerspace. The SDG on health should include targets within long-term care facilities and alternative approaches to combatting depression, anxiety, and self-esteem issues. Putting making into school may also help children deal with their growing issues of depression and anxiety. Finally, the SDGs need to deal with issues of waste and recycling more directly. E-waste of the Global North should not become the burden of the Global South. Governmental groups and organizations should make recycling sharing facilities that help distribute used goods to create new, locally.

These kinds of policies are an excellent example of why we need creative intervention ideas for the SDGs. One would not immediately think that opening a tool library in the middle of Accra or Dublin would have significant impacts. However, such a small social innovation can have cascading impacts around the value of goods, health care, and other socio-economic indicators depending on the context while radically disrupting production schemes.

Conclusion

Making and Makerspaces support a relational form of production that is not predicated upon harnessing the efficiencies of unfettered trade and comparative advantage. There is no innovation for the sake of innovation. It is only based on the needs of the community. In this way, the fourth wave of DIY production borrows from and builds upon the waves that came before it. This emerging Livelihood culture of micro-fabrication and embedded change is resonant with pre-industrial subsistence economies in so far as 'prosumers' are consuming based on need. Simultaneously, Maker culture can be sophisticated and high tech, incorporating innovations and technology that have come out of the Industrial Revolution, the Technological Revolution, and the 4IR to create relational democratic, open, resilient, and more environmentally sustainable

processes and contexts for production. A primary role of both environmentalists and the SDGs needs to be to reduce consumption. New DIY and micro-production strategies reduce consumption, and as such, the SDGs should reflect new production strategies.

Additional targets for SDG 12:

- Ban, tax, limit advertising to combat conspicuous consumption
- Regulate for shorter supply chains and improved knowledge/relationship of where things come from – putting a face to production and curbing phenomena such as fast fashion
- Foster local production through more community accessible Makerspaces, fab labs, hands-on educational initiatives, repair cafés, and tool libraries
- Inverse the fiscal/regulatory pyramid such that the unit cost of production in such local contexts diminishes to zero
- Reorient secondary and college education systems towards Livelihood and Making, with a renewed emphasis on craft-skills, micro-fabrication, low-overhead production and entrepreneurship (see Chapter 10)

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Part IV

**Politics and global
partnerships**



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14 Peace and justice within limits

Putting the pressure on geopolitics,
development, and social cohesion

SDG 16: Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable, and inclusive institutions at all levels

Introduction

As with all the SDGs, the goals associated with peace and justice are admirable. While the objective of ‘peace, justice, inclusion, oriented towards sustainable development and achieved by way of accountable institutions’ is laudable, there is no recognition of the choices and trade-offs that might be involved, nor any consideration of the necessary hierarchy of priorities or to matters of sequence. Furthermore, there is no recognition of the possible erosion of social complexity in an unknown and uncertain future. Perhaps even more unsettling are questions that arise about the relation between the sequence of development and peace. Suppose some abstract conception of democracy or individual rights is held to be non-negotiable. In that case, this might preclude support for an authoritarian ‘developmental state’ that is, nonetheless, capable of facilitating the social and economic transformations and institutional developments that might, over time, make a democratic society of individuals at least conceivable. In such a complex but not uncommon situation, who should decide?

In what follows, we consider the complex trade-offs associated with peace and justice, recognizing that there is no single overarching solution to them at any scale. Instead, there are always competing sets of policy objectives and frameworks that often involve starkly divergent winners and losers, costs and benefits, risks, and opportunities. Considering this complexity is a prerequisite for delineating SDGs that have utility and traction.

At the same time, the chapter will consider the particular trade-offs associated with the trajectory of reduced globalization, greater national and regional self-sufficiency and a political economy in which the institutions of State and price-setting Markets are to some extent moderated by informal and communitarian structures of Livelihood (see Chapters 2 and 3).

What determines violence within states? Market-driven complexity, the state monopoly of violence, and internal psychological restraints

In *On the Process of Civilization* (2012), Norbert Elias delineated the complex relation between sociogenetic transformations in the scale and scope of markets, the extent of the division of labour and the capacities of emerging feudal, absolutist, and finally nation-states, on the one hand, and the moulding of personality (psychogenesis) on the other. Describing the virtuous cycle whereby more significant market activity generated an expanded flow of resources to the increasingly powerful central state, Elias underlines that the state is defined by its monopoly of violence. The more effective the monopoly, the more regular and predictable its operation within an elaborate and specified legal code, the greater the amount of manufacture and trade, and the flow of taxes. What was remarkable about his account was the link that he made between the ensuing social complexity – the society of individuals (2001) – and a systematic reduction in interpersonal violence. Elias argued that the reason for this is that complexity and extended networks of interdependency make cause and effect in social relations increasingly opaque. In a close study of the ‘court society’ of the Absolutist monarchies (2005), this opacity of power relations engendered ambivalence and restraint – because individuals were less able to predict the outcome of an action. Over several centuries, formerly independent warriors drawn out of regional centres of power and forced to spend time ‘at court’ were moulded by a structure of action that favoured ‘detour behaviour’ and circumspection. With the extension of market society, argued Elias, this psychological disposition filtered through the middle classes into society. In England particularly (famed for its unarmed police), the visceral reality of state power – the threat of violence – was able to retreat behind a veil.

Implication and intimation were sufficient in an increasingly rule-following and pacified society. The processes of socialization and the civilizing impact of a militant and regulatory super-ego were enough to restrain the behaviour of most citizens most of the time. Elias describes this mechanism, in Freudian terms, as the ‘social constraint towards self-constraint’ (2012: 405–21). The regular pressure on individual behaviour from the state, and a raft of quasi-state or public institutions (e.g. schools, hospitals, churches, department stores), is sufficient to affect the internalization of external controls. External impositions become regularized functions of the internal psychological ‘habitus’. With Bourdieu, Elias uses the term ‘habitus’ to point to habits of mind and action that become so naturalized and automatic to become ‘second nature’. We lose any awareness of their socially constructed and societally specific character.

Since Elias died, the nuts and bolts of his ambitious thesis (2001, 2005, 2012) have been strengthened in broad synthetic accounts by Steven Pinker (2012) and Jeremy Rifkin (2009). For the most part, within modernizing nation-states, interpersonal violence has declined. This is certainly not the whole story because technological wars *between* nation-states have led to a massive increase in deaths.

However, contra Margaret Mead (2001), in terms of daily social life, modern Western states are orders of magnitude less violent than any pre-modern societies. For a thorough review of this argument, see *War before Civilization* (Keeley 1997) and *Guns, Germs and Steel* (Diamond 1999).

The virtue of Elias's account is that it has nothing to do with innate propensity. Violence, he showed, is a function of long-term processes of social development, including specific dynamics of pacification subsequent upon market-driven social complexity and the monopolizing capacity of modern states. On the other hand, this account also draws attention to a real problem. The patterns of socialization and acculturation that are a concomitant and prerequisite for this internalization of external constraints are tied to particular market development processes and state formation.

Elias's account is incomplete. Although the disembedding of individuals is driven primarily by economic processes (Polanyi 1944), functional social and spatial mobility was also accompanied by increasingly intentional processes of social construction and coercive cultural carnage. Gellner (1983) describes the emergence of a civic-national culture in terms of an elimination contest between multiple diverse folk language-cultures. With feudalism and pre-modern empires, an endless sea of relatively autarkic and place-bound peasant communities were overseen by cosmopolitan elite cultures. Groups often spoke a different language, and there was no reason or driver for any shared common culture within an identifiable territory. Borders were diffuse, permeable, and ill-defined. Restricted only by practicality and relations of local obligation, travel was not regulated by any central authority.

Against this backdrop, creating a modern state and the regulation of an increasingly complex market economy required the transformation of peasants into citizens (E. Weber 1976). As well as passports and visas (Torpey 1999), the registration of births and deaths, an increasingly rationalized process of record-keeping associated with military conscription and taxation, a central mechanism in this process was education more thoroughly discussed in Chapter 10. The creation of specialized 'exo-education' institutions (schools, colleges, universities) imposed local and national state monopolies, which replaced local and familial acculturation, socialization, learning by doing, on the job training and, increasingly, medieval familial institutions such as the guild.

Concerning SDG 16, this historical-sociological account of the diminution of interpersonal violence, societal pacification, and personality-formation raises three possible problems:

- i The monopolies of violence, education, enculturation, and identity are prerequisites for civic-national society of individuals.

If such monopolies are absent, the state cannot function effectively. For social cohesion and to legitimate fiscal transfers between unrelated communities, the state requires that strong primary bonds and attachments between families, clans, and place-bound communities be weakened in favour of

abstract attachments to a national identity defined by territorial borders and an official, shared high culture rooted in a single language-culture. Without such an imagined community (Anderson 2016), the nation-state would be unable to generate the necessary legitimacy and mutual identification that is a prerequisite for military conscription. Taxation would be rendered, automatically, as robbery and extortion (as indeed was the case in all state societies before the eighteenth century) – undermining the virtuous cycle of market growth, complexification and state formation (E. Gellner and Lukes 1998).

- ii A complex market economy and transactional culture are necessary prerequisites for social-spatial mobility.

Similarly, the same cycle of market-led economic expansion is also the mechanism that drives the disembedding of individuals from tight family-based survival units and place-bound communities. It is the economy that, by ‘emancipating’ the peasants, creates a population of economic agents (i.e. entrepreneurs, investors, free wage labourers) who are simultaneously a citizenry. In both cases, the disembedding of individuals makes possible increasingly individual choices and decision-making informed to a greater degree by what Weber referred to as instrumental or formal rationality (1921). These twin processes of individualization and rationalization gradually untether price-setting markets from the constraining influence of local contexts, tradition, and convention. In the nineteenth century, this allowed liberal political economists to press forward the corrosive and utopian project of Market Society (Polanyi 1944). This project was corrosive to the degree that everything (and everyone) was to be made fungible – commensurable according to the single measure of value represented by money. However – and for contemporary greens and progressives, this is the most wicked of dilemmas – the very same social and spatial mobility has also been, simultaneously, the condition of possibility for the expanding nexus of civic, social and, most recently, human rights.

- iii Social peace in complex societies is a function of growth, which challenges any limits-to-growth Livelihood perspective.

Finally, precisely because the realization of civic-national democracy and a liberal conception of universal human rights has depended so entirely on the accelerating flows of capital and labour associated with economic growth, they are linked intrinsically, possibly inextricably, with the ecological and metabolic costs of such growth (Quilley 2019). The structures of economic opportunity, social mobility, welfare security, health, education, and other public infrastructures that have guaranteed social cohesion, class peace, and relatively benign patterns of multicultural diversity depend on a growing market economy to provide jobs and fiscal transfers to the state.

In the context of development in the Global South and UN policy concerning sustainable development, this historical-sociological account of state formation poses real dilemmas.

Democracy versus economic growth versus state formation: The sequence of development

The historical sociology of modernization reveals a complex relation between state-formation, economic growth and the consolidation of liberal democratic norms and institutions. While there is a great diversity of examples, it is invariably the case that the cycle of state formation and economic growth comes before democracy in successful cases. The latter depends upon a successful prior process of detribalization, colonization, and the emergence of a significant tranche of mobile individuals. Thus, it is no accident that the pacification of the Scottish Highlands and the Anglo-Scottish clans in the border country, the ‘debatable lands’ (Robb 2018), preceded the gradual process of ‘parliamentarization’ and later democratization of the United Kingdom (Elias 2008).

In many cases, the notion that democratic liberalism can have any meaningful purchase on a society that has not already proceeded at least some way along the trajectory of socio-economic individualization has proved a great folly, leading at best to disappointment and at worst to conflict, genocide, and intractable failed states. Since the 1970s, with examples ranging from Ataturk’s Turkey to South Korea, Taiwan and China, this insight has underpinned policy analyses of the so-called developmental state, which highlight the role of an enlightened state apparatus working alongside a ‘national bourgeoisie’ (Leftwich 1995; Tang 2000; Kim 2007). It certainly does not follow that authoritarian rule guarantees development; at a certain stage of economic development, democratic institutions, however fraught, seem to facilitate rather than impede development (Kelsall 2014).

Liberal interventions: The monopoly of violence and the legitimating ‘we identity’

On the other hand, in post-war or post-independence situations in which a putative national society is divided into armed factions, the problem of social order is acute. In such circumstances, even the most basic economic processes – trade, contracts, distribution of goods, retailing – become vulnerable to the actions of predatory gangs and militias, creating a downward spiral of poverty, communal larceny, and revenge.

Unfortunately, this history of enculturation, exo-education, civic-national mutual identification, and national-culture construction is almost impossible to separate from a long period of coercive suppression and colonization of minority cultures and identities. A prerequisite for modern forms of liberal democratization, the real-time unfolding of this process, is incompatible with the institutional trappings of democracy. It may even be in tension with the legal and political

defence of individual sovereignty and human rights. A monopoly of violence may be less overt, less violent, less arbitrary, more rule-bound, and more constrained by both legal and practical (e.g. international, corporate reputational) checks and balances, to the degree that there is an encompassing and shared culture and a strong dynamic of mutual civic-national identification. Inversely, effective monopolies are necessary for the emergence of such patterns of cultural legitimation. To the extent that these are absent, the central power's initial imposition of a state monopoly is likely to be more violent, discretionary, and arbitrary.

With the proliferation of modern weapons, these dynamics become much more fraught and dangerous. Even relatively small groups can disrupt nascent civil society and reignite compelling and ascriptive tribal allegiances and survival units that are very difficult if not impossible for individuals and families to sidestep. Such is the pattern in failed states such as Iraq, Syria, Sudan, and Afghanistan.

For UN, G8, and regional policymakers, these considerations amount to a harsh but unavoidable reality. If any external power becomes involved in any direct military intervention, it must be willing to devote the resources sufficient to exert an overwhelming monopoly of violence – extending to every street corner and hamlet, in every province – for an extended period of a generation or more. The criterion for the success of such a strategy is quite simple. Has sufficient economic development occurred to pull enough young men out of dependence on family and kinship networks into reliance on new interdependent economic networks straddling tribal, religious, and provincial borders – allowing Elias's 'functional democratization' and the individuation of life-choices and life-chances? If not, any relaxation or withdrawal of force will inevitably see the resurgence of chronic sub-state conflict.

Inclusion of whom and in what?

[Gellner identifies two] alternative political standpoints seen as expressing alternative responses to a common historically-given predicament... 'two poles of looking, not merely at knowledge, but at human life' and 'the tension between them is one of the deepest and most pervasive themes in modern thought'. The 'two poles' are given a variety of labels. One is the 'atomic-universalist-individualist vision', beginning with Descartes and Robinson Crusoe, typified by Hume and Kant, and reformulated by Ernst Mach and Bertrand Russell. It is variously identified with empiricism, rationalism and positivism, and with *Gesellschaft*, with economic markets and political liberalism, and bloodless cosmopolitanism. The other is the 'communal-cultural vision', the organic counter-picture, first lived and practised unreflectively, then articulated by Herder and by countless 'romantic organicists', 'nationalist populists' and 'romantic rightists', stressing totality, system, connectedness, particularism, cultural specificity, favouring *Gemeinschaft*, roots, 'closed, cosy' communities, *Blut und Boden*. The 'alignment' of the elements within these poles and the tension

between them was especially strong in the Habsburg lands, not least Poland and Austria, as the Empire reached its end, where ‘the confrontation of atomists and organicists ... meshes in with the alliances and hatreds of daily and political life.

Steven Lukes, Foreword to Ernest Gellner’s *Language and Solitude* (1998; xiii–xiv)

The term inclusion is as nebulous as it is pervasive. All communities are subject to insider/outsider dynamics, which Elias called the ‘established and the outsiders’ (Chua 2019; Elias and Scotson 1994). Whether such dynamics are channelled through class, cultural, racial, or religious lines tends to be contingent and path-dependent. In pre-modern agrarian, place-bound communities, inclusion tended to be an ascriptive function of identity, interaction, and relationships. Strangers can be ‘incorporated’ into group membership. This is true in group cultures as far removed as the Nuer in Sudan (Evans-Pritchard 1940) and the Germanic societies of post-Roman Europe. However, this tends to operate on a binary logic of in/out. Urbanization and liquid modernity, with a vengeance, engender a condition of chronic stranger-hood or exile (Papastergiadis 1993). The dynamics of inclusion/exclusion in such societies are much more complex. They pertain to processes of mutual identification concerning more abstract identities relating to civic/membership-based concepts of nationhood, at best, at worst, national conceptions rooted in race, language, and more visceral constructions of shared history.

Concerning the language of SDG 16, social inclusion pertains to ‘peace’ in so far as the consensual, individually-based structures of law enforcement, contract, and cultural coexistence operate smoothly, without inter-group conflict, and relatively equally for all individual members of society. In practice, the dynamics of this process may operate differently depending on the (national or local) scale and context. Communitarian localism is inclusive and exclusive in equal measure. The more such dynamics are channelled along class and regional lines rather than race or religion, the easier they are to accommodate within the political system (not least through investment in public goods and moderate redistributive fiscal-welfare systems). On the other hand, where communitarian localism retains even the patina of a survival/security function (Elias 2001), it is highly likely to involve a familial, religious, ideological, or ethnic dimension.

Market individualism is, by definition, pluralist, being predicated on high levels of social and spatial mobility – mechanisms that break down attachments to family, ethnic community, and place. On the other hand, such individuals are enrolled into ‘imagined communities’ of a nation to a greater or lesser extent. There are three broad imaginaries through which the society of individuals can be articulated.

- i Where this abstract and rootless pattern of mutual identification exists in lockstep with *nationalism*, it may tend to be highly exclusive of internal ‘outsiders’ even as it legitimates growing fiscal inclusion through social

- insurance and welfare mechanisms. This was the dynamic experienced by German Jews under Bismarck and leading up to the Holocaust (Elias 1997).
- ii On the other hand, where it exists in the context of a moderate *civic-nationalism*, ‘liquid’ market society can develop extensive civic welfare accommodations rooted purely in formal membership of the national community. However, such civic solidarity rooted in citizenship is exclusive of external outsiders (non-citizens).
 - iii Where it is *globalist, dismissive of nation-states* and oriented towards open borders and a cosmopolitan ethic, as is the case in the context of neo-liberalism (Loyal and Quilley 2018), it is nominally open to all. However, in practice, it is exclusive of poor people because globalization and deregulatory competition in the context of capital mobility tend to undermine national social compacts (Quilley 2000). In this context, the society of individuals unconstrained by national borders are more likely to generate lower-level, non-civic religious, cultural, and communal patterns of mutual identification and solidarity (survival units) that are belligerently hostile to both internal outsiders (i.e. fellow citizens) as well as external outsiders (non-citizens, foreign nationals). The recent growth of national populism in Britain, Europe, and America can be seen as the first episode of such a process (Goodhart 2020; Vance 2018).

Growth, peace, and politics: North, West, East, and South

During human development, successive techno-energy and cultural regimes have proved irresistible. Once upon a time, no hominids had domesticated fire. However, this technological and cultural breakthrough was inexorable, and after so many millennia, no hominid groups existed that did not have this capability (Goudsblom 1992). The same is true of tools, weapons, pottery, agriculture, and writing. At the dawn of the Holocene, no human groups depended on agriculture. By the end of this period, the population of 7 billion all depended on agriculture, and hunter-gathering teetered on the brink of extinction. Industrial modernity is repeating the same cycle of compulsive expansion and incorporation. Moreover, because of this, the juggernaut quality of the global system exerts an enormous force of ‘remembrance’, which in all sorts of ways inhibits the system from reorganizing itself a new set of equilibriums. Nobody seems to favour clone towns and the dominance of out-of-town supermarkets, but they continue to expand. Even those who would dearly love to step outside of the dominant regime of consumption find abstention impossible – at least without giving up on social life altogether.

Growth, class conflict, and democracy in the West

In this context, growth is not so much an addiction but a necessary architectural foundation. Growth supports the kind of societies we have built, particularly since World War II. In the advanced Western countries of the

metropolitan core (Chapter 4), the long nineteenth century and decades of the twentieth century were overshadowed by the spectre of revolution and class violence. From the horror of 1790s guillotine, through the disorder of 1848, massacres of the Paris commune, the disaster of the Russian revolution, and the eventual rise of fascism, the dynamic productivism of capitalist markets always came at the cost of class inequality and conflict. These ‘contradictions’ of capitalism were resolved eventually with the relatively durable institutions of the mixed economy, Keynesian macro-economics, and the welfare state.

When Meadows et al. published the ground-breaking limits to growth report in 1972, despite fevered neo-Malthusian speculations in the public sphere (e.g. Ehrlich’s 1968 *The Population Bomb*), there was never any chance that the ship of state in any Western democracy could be turned towards a trajectory of low/no growth. ‘Normal’ political conflict was articulated around questions regarding redistribution and the balance between market and state and the extent to which the state should be involved in production. However, capitalist growth was understood to be the sine qua non of the liberal democratic state.

Growth and development in the Global South

Similarly, there was an overwhelming imperative for economic growth in the Global South to provide jobs for the ‘teaming masses’, to promote and manage the processes of urbanization and modernization, and to pull millions of people out of poverty. This commitment to growth was non-negotiable because the political stability of these new nation-states, with fragile institutions and limited resources in terms of political legitimacy, depended upon it.

Internal peace and security contribute to the enormous inbuilt momentum driving economic growth. However, this inertia also works concerning geopolitics and relations of competition and cooperation in the international system of nation-states. Depending on one’s view, during the Cold War, the doctrine of mutually assured destruction (MAD) kept the peace for 40 years or took the world to the brink of catastrophe. The assurance was that both parties would be annihilated if either engaged in unilateral aggression. The MAD doctrine made war less likely and made it difficult for one side to dominate, but it did so by raising the stakes. Unilateral disarmament would have removed the Damoclean spectre of all-out nuclear war, but made one party vulnerable to geopolitical and military domination and indeed increased the likelihood of devastating conventional war.

However, in steady-state versus growth economics, the geopolitical calculus should be a little different. From an ecological-economic or sustainability perspective, multilateral commitment to growth guarantees, if not mutual destruction, then at the very least severe ecological and economic disruption with a genuine possibility of widespread collapse. It is challenging to imagine this scenario playing out without hundreds of minor conflicts and continental-scale resource wars involving the West, Russia, and China.

One feature of modernization and urbanization is that societies become more dependent upon complex resource flows, supply chains, and trade. Although other things being equal, the comparative advantage does work to expand economic activity and fiscal returns in open, trading economies; such interdependence also makes countries vulnerable and mutually competitive in any zero-sum economy. In such circumstances, nation-states may reasonably fear military emasculation and vulnerability to geopolitical bullying or territorial aggression. Since effective military deterrence and offensive capability are deeply connected with economic growth, steady-state economics constitutes a kind of unilateral disarmament.

In the case of low- and middle-income economies, this pressure to sustain geopolitical integrity entails an imperative to maintain an army and invest in expensive military equipment – including simple infantry weapons and vehicles to more advanced nuclear, biological, and chemical weaponry. In more advanced core economies and emerging powers such as China and India, this defence imperative entails a much broader commitment to sustaining:

- a the financial resources to purchase weapons systems from allies, to maintain and supply a standing army, and to supply with oil (the Department of Defence is the largest single consumer of oil in the United States);
- b a trajectory of science and technological innovation to maintain military technological parity with geopolitical rivals; and
- c a sufficiently broad-based economy nationally and within a bloc of military allies to sustain the supply chains and manufacturing capacities to turn technical innovation into military production.

From Cold War history, central planning and brutal political control allowed the Soviet Union to centralize and focus resources to an incredible degree, and without regard for consequences elsewhere in the economy. Initially, this led to enormous successes – from the production of the T34 tank in World War II to Sputnik and Yuri Gagarin's achievement as the first astronaut. However, it was ultimately the dynamic interaction between targeted investment in military technology and the economies of scale in both production and development associated with consumer capitalism, which proved decisive, leading the Soviet Union to fall behind in all areas of both military and consumer technological innovation.

From this, it can be appreciated that any sustained economic contraction is likely fatally to undermine any state's capacity to keep up in any competitive arms race or sustain an existing defence capability. This tension between military-economic competition and low/no/degrowth economics creates a serious problem for any serious attempt to develop an alternative political economy – and by extension, anyone advancing sustainable development goals. Indeed, if the worst fears of climate change scientists are realized, rather than concentrate minds on multilateral solutions, this problem is likely to get more and not less acute. In such conditions, competition for scarce resources may

affect not only strategic energy reserves but just about anything else conceivable – from trace elements and mineral reserves to fisheries, land, and water. Over the longer term, as climate change escalates, the latter is likely to become particularly significant, with the possibility of countries fighting for space in polar latitudes as the middle latitudes become uninhabitable. Such a scenario is intimated by James Lovelock in *The Revenge of Gaia* and is no longer taboo in mainstream journals such as *Science* or *New Scientist*.

Whether or not Lovelock's fears are well-founded is beside the point. Security is a real issue and, given the possible conflicts of interest, the fear of domination or aggression reasonable. If Lovelock is right, conflict is a racing certainty. In this case, unless there is a widespread, multilateral agreement to break the cycle and for the major powers to act in concert, then nation-states and regional blocs may almost certainly opt for a game of the last man standing.

International governance failures concerning climate change suggest that other things being equal, multilateral descent along a low/no/degrowth trajectory is a non-starter. However, just because the major powers persist with business as usual does not mean they are unable to read the writing on the wall. Over the next century, biophysical limits to growth will become hard to avoid. Unfortunately, descent is not the only possible response. An alternative, genocidal but rational strategy would be to embrace the logic of zero-sum competition, seizing ecological space and time. This horrifying possibility should be at the centre of UN deliberations precisely because every year of 'business as usual' brings the scenario closer. Furthermore, two factors make this not such a distant prospect as one might hope.

Firstly, concerning *technological possibility*, at the end of World War II, nuclear weapons ushered in the irrevocable possibility for continental-scale genocide – a logic captured most graphically with the neutron bomb – a weapon that killed people without damaging buildings. Such capability looks clumsy and indiscriminate compared to prospective biological weapons, targeting human beings specifically and even particular genetic profiles.

Secondly, military planners everywhere are schooled in *triage*. Making 'difficult' decisions that involve gargantuan moral trade-offs and sacrifices deeply embedded in the military mindset. Triage originated in World War I as medics, seeking to prioritize scarce resources, conducted battlefield assessments in which patients were divided into three categories:

- Those who are likely to live, regardless of what care they receive;
- Those who are likely to die, regardless of what care they receive;
- Those for whom immediate care might make a positive difference in outcome.

If we assume that military analysts may eventually understand the trajectory of business as usual for what it is (if they do not already), we can also assume that war games will model every possible outcome and response pattern. Suppose we imagine a climate scenario unfolding along the lines suggested by James

Lovelock, James Hansen, and others, with nation-states considering wholesale evacuation or relocation and competing for space in polar latitudes. In that case, it may be fair also to assume that hearts may have hardened considerably to the plight of hundreds of millions of people on the wrong side of environmental chaos. At this point, some military bright spark may reason from well-established triage principles, that ecological space should not be wasted on those who have little or no chance of surviving. This would be when commanders might start to look around for rationalizations to justify their 'difficult decisions'. If (a) multilateral metabolic retreat from ecological collapse is impossible, (b) unilateral retreat an invitation to be dominated and (c) 'business as usual' is tantamount to sleepwalking suicide, then it is not hard to imagine circumstances in which rational but morally unreasonable commanders may take it upon themselves to (d) think the unthinkable and to act upon it. In such a context, genocidal triage might come to look 'reasonable' (i.e.) 'if we can throw enough people off the life raft, 'business as usual' might once again offer a future, at least to those last men standing'.

If we are to avoid such a prospect, then those involved in the pushing for 'strong sustainability', bio-regionalism or any limits-thinking need quickly to start thinking about geopolitical security issues. We need to find ways to facilitate individual nation-states or groups of states to peel off and begin to undertake the process of 'metabolic retreat' without leaving themselves open to aggression or bullying by other states.

Conclusions and policies

In the opening chapters, we argued that sustainable development goals could not avoid a degree of metabolic descent for reasons of ecological integrity. This would be synonymous with a partial retreat from globalization and the hyper-mobile, cosmopolitan society of individuals. A limited renationalization and relocalization of the economy would have several effects, including:

- i Taking the heat out of growth economics: growth would slow.
- ii Tightening the informational feedback loops between resource use and environmental externalities. The closer resource processing, production and manufacture are to final consumption, the stronger the systemic signals (price, reserves, polluting impacts, environmental politics) and the greater the regulatory pressures on the system.
- iii Attenuating the power of global corporations, vis-a-vis national and local manufacturers: This would have many negative impacts in terms of economies of scale, the pace of innovation, and efficiency (concerning comparative advantages), but it would also diminish the power of corporations to drive the global-consumer economy, driven by inbuilt obsolescence, branding and culture of individualistic materialism.
- iv Loosening the grip of corporate consumer capitalism would allow, at least in principle, space for the re-emergence of more communitarian social and

political projects rooted in less individualistic and materialist ontologies (including religion).

- v Facilitating a cultural-political context to elaborate on a more three-legged model of political economy based on the Market, the State, and Livelihood (Chapter 3).

However, as should be clear now, such a Livelihood economy comes with obvious dangers – that cannot be brushed over by anthropologically naïve prescriptions of class or communal peace (in the vein of Rousseau, Kropotkin, or Margaret Mead). There has long been a strong resonance and affiliation between green economics and the peace movement, specifically concerning unilateralism in nuclear weapons. Clearly, the ecology/climate crisis does not respect national borders. However, considerations of internal social cohesion (which is to say, societal pacification) and external geopolitical relations between states and regional blocs make the ecological-economic question of scale infinitely more complex. Reducing the throughput of energy and materials associated with the global economy may be a prerequisite for ecological integrity. However, other things being equal, ‘metabolic descent’ is also a guaranteed recipe for chaos and violence, social disorder within societies, and war between states.

With a sombre realism, Fagan argues that much of the work on environment and security is destabilized in the context of the Anthropocene (2020); she argues that:

The desire for a nonviolent security politics cannot be fulfilled by attempting to transcend the violent system of oppositions and exclusions inscribed in the human/nature dualism, because to theorise an outside to this is to inscribe an oppositional system once again; to posit an interconnected whole as an alternative is itself a violent move.

(45)

Contra the predisposition of degrowth scholars to seek out more inclusive accounts of security, she argues instead in favour of a contestation of politics in which there is a ‘foregrounding of the negotiation of representation, equality, and domination, amongst an expanded constituency’ (45). It is difficult to know what this means except that conflict is certain and trade-offs will be complex and intractable. In these concluding paragraphs, we outline policy directions that may at least minimize such problems.

Localism, subsidiarity, and the circular economy

To the extent that renationalization, regionalization, and relocalization of economic activity reverse the trajectory of global integration, this process would introduce security fire-breaks into the world system. A systemic reduction in relations of interdependence between global blocs and the emergence of more self-sufficient economies would in some ways reduce the potential

for devastating *global* conflicts. However, at the same time, as Elias argues (1978), interdependence is also a driver of civilization and restraint, not just between individuals but between organizations and states. It creates a condition in which violent conflict has open-ended and damaging consequences to both sides and which, given the opacity of the system, cannot accurately be predicted. Given that this is the case, the simplification of international relations and global interdependencies may make local conflicts between states *more* and not less frequent.

On the other hand, the consistent application of the principle of subsidiarity would increase social integration and interdependence between groups and communities at the local and regional scales. From an Eliasian perspective, this could be mobilized as a civilizing and pacifying pressure, inculcating a pattern of social-psychological restraint within local communities. Having said this, however beneficent in ecological terms, unless managed with great care, any resurgence of localism would likely be associated with greater violence and conflict between communities and possibly nation-states.

The arms trade

Since World War II, one of the biggest problems in local conflicts both within and between failing and marginal states has been the easy access to ever more powerful military hardware. In part, this has been a consequence of (old and renewed) cold war competition for geopolitical hegemony and the fighting of proxy wars – with extraordinary powers arming insurgent groups and fragile states alike. Simultaneously, the arms race has seen a steady increase in the capital-intensive nature of military research and development and production. On all sides, corporations and states have offset costs by selling arms on an increasingly open market – despite the obvious dangers in terms of technological secrecy and diffusion.

The single most effective way to take the heat out of local and regional conflicts would be to cut off access to weapons. This should perhaps be one of the single most important SDGs. In this sense, ending militarised conflict must take priority over more abstract UN commitments concerning (for instance) very modern and individualist goals.

Trade and aid as a pressure point

Even with the partial reversal of globalization and the re-emergence of relative self-sufficiency and circularity in the economy, there will still be trade – regulated by all manner of agreements, treaties, and international standards. On the other hand, to the extent that the advanced core economies reduce their dependence on global trade and develop more circular and fractal economies, it becomes easier to use trade and aid as leverage for democracy, the rule of law and the nurturing of civil society in failing and less well-functioning developing societies. This is because, less enveloped in the material interests of

core economies, principles of state-building, the nurturing of civil society and social capital formation take greater precedence over realpolitik.

Conscription, communitarian solidarity, and defensive posture

The most significant problem that metabolic descent poses for security and international relations relates to geopolitical competition between the superpowers and their allies. In recent years a great deal has been made of the Thucydides trap – the sense that at approaching the point of parity between an ascending and declining power, war becomes inevitable (Allison 2017). Of course, the unstated assumption of the Thucydides problematic is that the contending rivals, like Athens and Sparta, remain part of the same system.

Global interdependence (following Elias) makes conflict more costly and internalizes restraint into the system. However, it also creates relations of competition for shared resources and markets. In periods of high growth, this is not a significant problem. However, any serious and sustained economic contraction is likely to make such competition much more aggressive and outright war more likely. This geopolitical dynamic is not dissimilar to the problems associated with the Keynesian solution to class war described above. They both depend on growth.

The vista of metabolic descent offers two ways to mitigate the danger of multilateral or superpower war. Firstly, to the degree that a reversal of globalization leads to less interdependent, more self-sufficient, and more circular economies, there is less contact and less to fight about. America and Europe are a long way from China. It is possible that in a less global and less proximate world, the Thucydides trap would dissolve automatically as older spheres of influence re-emerged.

Secondly, military technology and sophistication are a direct function of growth, and in this sense, intentional metabolic descent must be seen as synonymous with unilateral disarmament. The UK might have fallen to Nazi Germany in 1940 if it were not for the slight technological lead embodied in radar and planes such as the *Hurricane* and the *Spitfire*. Nevertheless, as Vietnam taught America, technological warfare does not guarantee any military victory if the populace is armed and united against invasion. This suggests that the logical defensive posture for any major economy that, in the interests of sustainability, was intent on a path of metabolic descent may include a radical version of the Swiss strategy (Tresch 2011). This would involve conscription, lifelong military training, and a system of community-based militias.

A culture of lifelong national and local conscription is highly consonant with the broader possibilities of the communitarian, livelihood political economy, intimated in Chapter 3. The overlap between green and conservative localism is evident in the shared cachet of E.F. Schumacher's *Small Is Beautiful: Economics as if People Mattered* (see Pearce 2014), but not explored to sufficient length by degrowth and low-growth scholars. In the United States, the kind of conservative localism that has been hostile to corporate

capitalism and the runaway culture of big-box retailing and consumerism has also always been predicated on Second Amendment rights and affiliation with gun culture (see, for instance, Mitchell and Peters 2018). This attitude to gun culture is perhaps the most significant sticking point. Nevertheless, in some measure, therein lies an important avenue for further investigation. If our goal is to strengthen a new alternative green basin of attraction (as defined in Chapter 2), it is important to ally as broadly as possible. As the world deals with increasing violence and peace as a more distant reality, to what extent does the intentional embrace of limits-thinking amount to a dangerous and politically impossible mode of unilateral disarmament? There may be a model whereby national defence and the community-level monopoly of violence is achieved through a Livelihood-friendly pattern of family and household cooperation, civic associations, and local militia – a model that balances the national monopoly of violence with a greater number of more autonomous, nested subsidiary monopolies. Such a dynamic, or alternatives, requires far greater attention from the community of degrowth and low-growth scholars.

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15 Engaging economies of change

Equitable partnerships for climate action

Sophia Rose Sanniti and Sarah-Louise Ruder

SDG 13: Take urgent action to combat climate change and its impacts

SDG 17: Strengthen the means of implementation and revitalize the global partnership for sustainable development

How can knowledge- and powerholders in society use their privilege to advance intersectional climate justice and solidarity within their mandates? Calls for racial, environmental, and economic justice are louder than ever during the COVID-19 pandemic, which exposed structural injustices and the unsustainable nature of growth-dependent economic systems. The parallel global crises facing humanity – including climate change, racism and racialized violence, and pandemics – require evidence-based policy and governance strategies that meaningfully include those affected. Limiting access to research and expertise within the walls of the ‘ivory tower’ restricts what knowledge is trusted, whose voices are represented, and what policy decisions are implemented. New ways of creating, exchanging, and sharing knowledge are essential to build an equitable and sustainable future.

Engaging Economies of Change

In this chapter, we present a living case study of ‘(un)conferencing’ – a gathering that intentionally and creatively disrupts traditional hierarchies and power structures – in conversation with two of the Sustainable Development Goals (SDGs): *Climate Action* (SDG13) and *Partnership for the Goals* (SDG17). Building on the Ecological Economic (EE) critiques and reconfigurations of the SDGs in this book, we foreground equity and intersectional feminism in reimagining what climate action and partnerships could enact.

The Canadian Society for Ecological Economics (CANSEE) is a national network of scholars and practitioners that promotes research, education, and relevant policy recommendations at the intersections of environmental sustainability and economic prosperity (cansee.ca). For the last three decades, CANSEE has held biennial conferences to advance theoretical and practical

alternatives to unsustainable growth economics. From 22 to 25 May 2019, 250 international delegates participated in CANSEE's 12th biennial conference, *Engaging Economies of Change*, in Waterloo, Ontario. The conference marked a radical rethinking of previous conferences' design and logistics.

We write from our experiences as the Conference Co-Chair (Sanniti) and Logistics Lead and Equity & Inclusion Coordinator (Ruder) for *Engaging Economies of Change*. We focus here on our own contributions, but the conference was the result of generative collaboration across 13 conference organizers, 30 event volunteers, and dozens of community partners. We are indebted to the care, patience, and emotional labour of many who offered guidance and inspiration throughout the process. As a team, we used an academic conference as a method and embodiment of change for reimagining university education and research.

Positionality

Positionality matters; one's intersectional identity and relationships with the communities in which they are situated directly impact how they generate knowledge and engage with others (Rose 1997; Rowe 2014). We are early-career academics focusing on transitions to more equitable and sustainable futures. We come to this work with a great deal of privilege, which influences our professional trajectories, ways of knowing and being the world, and responsibilities for change. We acknowledge our privileges as able-bodied, white, cis women, with familial class privilege. We are embedded in white privilege and European settler culture as ancestors of European colonizers. We are committed to the process of unlearning inherited ignorance and colonial assumptions and beliefs. Yet, our academic training and culture see the world 'through imperial eyes', equipped with Western ideas of individuality, space, and time (Smith 2012, p. 58). In our work, we foreground reflexivity, which requires thoughtful, embodied, ongoing, self-critical reflection (England 1994; Nencel 2014). We acknowledge the limitations of our perspectives. Throughout our research, activism, and organizing, we aim to redistribute power and amplify the work of equity-seeking groups.

Revealing intersections to transcend crossroads

The adoption of Agenda 2030 and the Sustainable Development Goals (SDGs) by all 193 United Nations member states signalled a global consensus for bold and transformative action towards sustainable and equitable futures. However, the SDGs' goals, targets, and collective vision contain significant tensions and contradictions. We build on existing critiques of the SDGs, including the failure to address root causes of systemic issues, the prioritization of growth-based economic systems in addressing societal and environmental ailments, and the relatively limited approach to gender equality, among other issues identified in this edited series (Rai, Brown, and

Ruwanpura 2019; Gammage and Stevannovic 2018; Consortium on Gender, Security and Human Rights 2017).

As humanity collectively breaches the planetary boundaries critical to Earth's *carrying capacities*, radical shifts in global production and consumption systems must take place to align the economy within physical realities (Steffen et al. 2015; Daly 2017; Kallis et al. 2018; Victor 2019). This book advances the imperative for SDGs to recognize ecological limits and the dangers of economic growth, which conflict with many of the other goals and targets identified. It also demonstrates the significance of alternatives to growth-centric economic models, which stand to undermine environmental or social objectives by undermining our planet's climate stability.

What is often ignored, and largely assumed, is humanity's *caring* capacities – the unpaid and often invisible care work of mainly women that subsidize economic activity and wage workers (i.e. preparing meals, gathering water, maintaining the home) (Nelson 1997; Mellor 1997; Pietilä 1997). Feminist political economists situate this labour as being equally critical to the rise of the market economy as the wage worker in the factory through the reproduction of the labour force (i.e. biological, cultural) and the provisioning of caring needs (Bakker 2007; Federici 2009; Luxton 2018; Mies 1998). From this perspective, the unpaid labours of both ecosystems and women are systematically exploited in the pursuit of infinite economic growth and at the expense of life's ability to flourish (Gaard and Gruen 1993; Biesecker and Hofmeister 2010; Floro 2012; Fraser 2016).

The International Labour Organization estimates that women and girls currently perform three-quarters of unpaid care work, adding up to about 16.4 billion hours conducted daily or 9 per cent of global gross domestic product (GDP) (ILO 2018). This work disproportionately exposes women to climate risk due to the inequitable distribution of access to land, resources, economic assets, and decision-making power as well as their primary reliance on natural resources (UN Women 2017; Barclay, Higelin, and Bungcaras 2016). According to the Food and Agriculture Organization of the United Nations (FAO), women are responsible for 60–80 per cent of food production in developing countries, meaning that women's livelihoods and lives are on the front lines of climate disruption including droughts, floods, and storms (FAO 2009). Violence against women also increases during times of disaster and displacement (Care International 2017).

Since current GDP measures exclude this vital labour, SDGs that take economic growth for granted fail to address issues of gender and economic equality in a comprehensive way. Without a gender-informed approach to the SDGs, the share of risk, responsibility, and work hours will remain unjust, compromising the overarching objectives. Beyond gender, varying intersections of identity play key roles in the expectations and outcomes of the SDGs. Increasing international capacity for climate action is essential, but when the poorest half of the world's population is responsible for just 7 per cent of cumulative emissions over the last three decades (Gore, Alestig, and Ratcliff 2020), it is clear that the

dismantling and transformation of structural power relations must sit at the heart of any sustainability or equity imperatives.

Intersectional feminisms and the SDGs

Intersectionality is an understanding of interactive and socially positioned facets of identity (e.g. race, gender, class) and the resulting implications of power and privilege (Crenshaw 1989; Hill Collins and Bilge 2016; Ryder and Boone 2019). Intersectionality is a lens for observing and challenging power. Going beyond issues of gender, intersectional feminism denounces and resists all systemic and interlocking power structures including patriarchy, racism, colonialism, and white supremacy. Intersectionality complements and enhances arguments for a systems approach to rethinking the SDGs (Future Earth 2019). Taking an intersectional feminist lens, we are able to account for the systemic power structures at play in understanding and addressing complex problems (Salleh 2017; Stephens et al. 2010). Further, an intersectional feminist approach to the SDGs can better inform sustainability imperatives by explicitly addressing interactions between power, privilege, and positionality in the determination of goals and outcomes.

To clarify the intersectional feminist response to the SDGs, let's take a closer look at two of the SDGs. SDG13, *Climate Action*, compels the global community to 'take urgent action to combat climate change and its impacts' (UN General Assembly 2015). While we do not dismiss the importance of action in the face of climate change, there are justice implications of calling for *urgent* action. In the context of inequitable systems, including the ongoing legacy of colonialism, urgent action risks perpetuating oppression and injustice; climate action must not sacrifice consent, trust, accountability, and reciprocity in relationships between Indigenous peoples, colonial governments, nongovernmental organizations, and other relevant actors (Whyte 2019). Further, urgent action may only be accessible to regions with resource abundance allowing for flexibility in response, while disadvantaging less wealthy regions that are deeply embedded in the current economic regime (Feola 2020; Escobar 2015; Dengler and Seebacher 2019).

Then, we ask, climate action for whom, and to what end? For instance, the international agreement to limit global warming to 2°C as a 'tolerable compromise' favours what is convenient to highly industrialized nations (Moosa and Tuana 2014; Seager 2009). Yet two degrees of warming will likely result in the complete disappearance of small-island states or impose vast and irreversible changes to weather, growing seasons, or existing infrastructure for the global majority's communities and ecosystems. Finally, an intersectional feminist lens expands the view of possible actions beyond regulating emissions and renewable energy development, to support grassroots movements advancing intersectional climate justice such as nature-based solutions (Cunningham and Araújo 2017; IUCN 2016) and agroecology (Loconto and Fouilleux 2019; Oteros-Rozas et al. 2019). Indigenous ways

of knowing and being predate and influence these two movements. One of the most important actions for intersectional climate justice is to protect the sovereignty of Indigenous Peoples who embody harmonious relations with more-than-human beings since time immemorial (Betasamosake Simpson 2014; Lin et al. 2020; Whyte 2017).

SDG 17, *Partnership for the Goals*, aims to ‘strengthen the means of implementation and revitalize the Global Partnership for Sustainable Development’, focusing on coordinating governance approaches (UN General Assembly 2015). Feminist researchers raise important concerns around the financing and development priorities of SDG17, namely the distribution of wealth across and within nations and accountability to take action for gender justice (L’Associació de Planificació Familiar de Catalunya i Balears et al., n.d.; Mathews and Nunn 2019; Ryder and Boone 2019). The fragmentation of gender-focused work compromises access to resources and prohibits complexity-informed, intersectional interventions. However, to ensure the success of the SDGs, the understanding of partnership must go beyond traditional international agreements and development, to highlight the interactions between goals and the importance of solidarity.

An intersectional feminist approach to partnerships acknowledges power imbalances between parties and actively works towards anti-oppression, decolonization, and reconciliation. Ensuring partners are equipped with the tools, knowledge, and capacities needed is central to success, as is the active removal of barriers to participation. Intersectional feminism cautions against the homogenization and naturalization of experience, and the importance of departing from differences based strictly in class, race, age, or gender in efforts to embrace differential positioning (Yuval-Davis 2006). This perspective invites opportunities to challenge existing structures and actively calls for political change.

Engaging Economies of Change was the product of generous partnership and solidarity across movements. While the EE community extends beyond climate action, understanding the causes and manifestations of climate change and working for restoration, transition, or transformations in the face of ecological crises are central to the field. The conference is an example of centring ecological and equity considerations in convening an exchange of ideas and amplifying actions on climate through meaningful dialogue and partnership.

Embodying change at CANSEE 2019

Engaging Economies of Change is a manifestation of reimagining academia’s role in mobilizing knowledge and building community. In organizing the conference, we were determined to embody, to the best of our abilities, the very innovative solutions to socio-economic problems that the conference content and participants advance. We aimed to encourage a free exchange of ideas and resources across disciplines, sectors, and even beyond the academy itself. To do

Box 15.1 Walking the walk: Planning a conference that embodies equity and sustainability

At this conference, sustainability and equity were not only central themes of the presentations and dialogue, but also core tenets of the organizing. ... As a team, we aimed to create a conference experience that both celebrated and exemplified the types of alternative economies and societies we hope to build through our research, work and relationships as ecological economics scholars. This initiative was driven by heartfelt enthusiasm towards enabling meaningful change with lasting impacts in the Region of Waterloo, as well as the broader community of sustainability research and practice.

(Sanniti and Ruder 2019, p. 7)

Note: This text is taken directly from the Women & Environments International (WEI) magazine issue on Engaging Economies of Change published through York University (Gansworth, Greckol, Perkins et al. 2019).

this, research, understanding, and – most importantly – relationships were critical to success. This entirely student-led endeavour worked to challenge conventions through an intentional process of building trusting relationships, unlearning harmful norms, and taking responsibility for our own privileges and power.

The conference planning process reified the spirit of doing things differently. The visualization in Figure 15.1 creatively communicates the values, vision, and key decision of the conference.

Building relationships

Equity, justice, and anti-oppression require *intentional* action – especially in academic contexts built on the ongoing legacies of colonialism, classism, sexism, ableism, and oppressions (Breeze et al. 2019; Datta 2018; Smith et al. 2021; Taylor and Lahad 2018). Our process was new to CANSEE's planning process but would hopefully build more concrete pathways for even deeper actions in the future.

We began by 'doing our homework': conducting extensive literature reviews on academic and public resources for anti-oppression and inclusive event planning. This was essential to inform organizers before asking for the labour of others. From here, we began building on existing relationships to learn from people and groups leading by example, including the Canadian Community Economic Development Network, Meal Exchange, and the University of Waterloo's Indigenous Student Centre (WISC). In the spirit of reciprocity, we participated in the WISC's events to demonstrate solidarity and build trusting



Figure 15.1 Conference visions and theory of change.

Source: Art by Patricia Kambitsch.

relationships. Leaders at WISC introduced us to Indigenous mentors like Kelly Fran Davis, member of the Cayuga Nation, Haudenosaunee Confederacy of the Six Nations and Cultural Program Coordinator for Kitchener's own Healing of the Seven Generations. Kelly opened the conference with a Thanksgiving Address, joined by her middle son Jacob to perform a women's song in line with the Haudenosaunee practice of holding women in high esteem. Conference participants were invited to join Kelly and Jacob on stage and dance in celebration of womanhood (Figure 15.2). This beautiful and unique 'unconferencing' moment could not have taken place without careful and considerate, time-intensive relationship-building.

Further, through community-based partnerships we were able to facilitate a free childcare service for all conference participants that needed it, alleviating the burden of labour often falling disproportionately on women and limiting female voices in academic circles, and in research and policy priorities more broadly, as the global lockdown has starkly shown us (Wenham, Smith, and Morgan 2020).

Dialogue across difference

With the goal of engaging with the big questions facing humanity, we made a commitment to facilitate space for dialogue where everyone feels included and



Figure 15.2 A dance circle led by Kelly Fran Davis, accompanied by her son Jacob singing a women's song.

Source: Photo by Kimiya Bahari.

valued. We challenged ourselves to think critically about the assumptions and norms of academia, sustainability movements, justice initiatives, and community organizing. We began planning 18 months in advance, which made space for reflexivity and deliberation.

The term 'brave space' is becoming more common, as an evolution of the earlier concept of 'safe spaces'. For example, Aaron and Clemens argue that there is a 'conflation of safety with comfort' in the discussion of 'safe spaces', proposing instead to prioritize 'bravery' in learning through challenges rather than deflecting or being defensive (Araon and Clemens 2013, p. 135). While both safe and brave spaces are important, they have different goals: the former focuses on learning through discomfort, and the latter prioritizes security and support. In the context of an academic conference, and given the challenging topics we planned to discuss (e.g. decolonizing the academy), we did not feel that we could promise a safe space at all times. Still, we did make a culturally sensitive safe space available by hiring and hosting an Indigenous social worker, Lila Brueye of Couchiching First Nation, to provide counselling on site.

The questions and imperatives at the crux of *Engaging Economies of Change* can be uncomfortable in questioning what is often assumed. Yet, discomfort can be fruitful for learning. We built a 'brave space' framework to foreground accountability, respect, and reflexivity. One the most common and effective interventions for brave spaces is building collaborative community guidelines. We included ours in Box 15.2. Participants contributed to the guidelines via

Box 15.2 Engaging Economies of Change: Community guidelines

Engaging Economies of Change demands a 'brave space' that enables all participants to have deep and honest conversations about creating substantial societal change. We are actively seeking to avoid reproducing patterns of colonization, patriarchy, racism, transphobia, homophobia, classism, and marginalization or oppression in general.

We won't all feel comfortable at all times – and that is okay! Our goal is that if anyone feels uncomfortable, it's because they are challenged to reconsider their views, and not because they are attacked for who they are.

To accomplish this, we have drafted a set of community guidelines that will be used to enhance our engagement at the conference based on participant contributions in the registration form.

Respect Differences: Welcome and value diverse perspectives and identities. Take responsibility for the intent and impact of your words, recognizing your privilege.

Listen Attentively: Challenge yourself to listen more than you speak. Actively listen to understand, rather than to respond.

Speak Thoughtfully: Be clear and concise (e.g. avoid jargon when possible). Please be considerate of sharing time during both presentations and question periods.

Be Willing to Learn: Acknowledge your values and visions, but be ready to have them challenged. Assume good intentions in others. Exercise compassion in challenging others' ideas.

Be Open to Discomfort: Conversations about sensitive topics are challenging, but avoidance makes the issues grow. Engaging economies of change will require disruptive thinking beyond comfort zones.

Recognize Social Dynamics: Keep conversations open. Everyone should feel welcome, but not forced, to join. Make and protect space for marginalized people.

Respect your Needs: Be gentle with yourself. Feel free to follow the needs that may spontaneously arrive (e.g. time alone to decompress, conversations outside the panels, etc.).

Thank you to all participants who contributed to the guidelines through the registration form. If you notice someone disrespecting these guidelines, you can gently let them know and direct them here.

Please take these guidelines as a starting point! We welcome feedback and hope the guidelines come alive in the conference. Participants can make anonymous suggestions in the box at the registration table or online.

Note: This text is taken directly from the conference program, website, and posters during the event.

event registration, and then brought the agreement to life, holding themselves, each other, and organizers accountable.

Brave spaces require intentional interventions to redistribute power and remove barriers. We facilitated the (un)learning of those who hold the most privilege in taking responsibility and redistributing power (e.g. sliding scale registration fees to defray costs for others). At the same time, we took measures to address or dismantle barriers to marginalized groups to invite and include people from all walks of life (e.g. free registration to Indigenous peoples, free childcare, inclusive washrooms, pronouns on name tags). As a result, we were able to build an effective space for the free exchange of ideas, embracing a plurality of perspectives, and safeguarding dignity and accessibility. Participation from representatives of the public sector including the Green Party of Canada and a local mayor brought about more content that could actively engage the general public, a group often excluded from academic events and discourse. This opened doors for the work of citizens, local practitioners, artists, and activists to be showcased and celebrated.

Emphasizing local ecological economies

Located in the heart of southwestern Ontario, Waterloo Region is home to many sustainability champions that have advanced economic and social relationships including Sustainable Waterloo Region, Living Wage Waterloo Region, Mennonite Central Committee, The Working Centre, Transition KW, and the St. Jacob's Market. From an EE perspective, sustainability involves the full spectrum of relationships and interactions between human society, local economy, and ecosystems. Integrating this directly into event management processes, CANSEE 2019 organizers prioritized supporting the local economy, minimizing environmental harm, and maximizing community impact.

One of the most effective areas to enact these principles is in the food system. Through diligent coordination, we were able to showcase eight different local food or beverage vendors that aligned with these values. This included a completely vegetarian (mostly vegan) menu and a Traditional Anishnawbe Feast offered by a First Nations owned and operated Food Emporium (Figure 15.3).

We also hired equipment rental and printing services home to the Region in efforts to keep the financial impact circulating locally. We partnered with the University of Waterloo's Plant Operations to establish a waste management plan, and successfully saved approximately 2.5 tons of greenhouse gas emissions through these good food choices.¹ We used yarn and printed cards for name tags to reduce plastic waste, and we also invited each of our 20 keynote speakers the opportunity to present remotely – a novel and purposeful choice in pre-COVID time. Three keynotes took up the opportunity, connecting from western Canada and as far as Spain.

Student empowerment

Being students ourselves, we also felt it important to create opportunities to both celebrate local talent and enhance the professional development of our



Figure 15.3 Participants gather for the Traditional Anishnawbe Feast as the meal is introduced by Nishdish chef Johl Whiteduck Ringuette and blessed by Couchiching First Nation's Lila Bruyere (Dancing Eagle Woman).

Source: Photo by Kimiya Bahari.

peers. We hired musicians from Wilfrid Laurier University (Figure 15.4), two recent graduates of Conestoga College's event management program for a day of logistics, as well as a talented graphic designer from the University of Waterloo.

All conference volunteers including keynote panel moderators were also graduate or undergraduate students, providing unique opportunities to direct scholarly discourse first-hand. Partnering with Boothroyd Communications, a hands-on workshop for climate change communication offered all student participants an opportunity to build skills, network, and collaborate. While there are many established professionals within our network and in the Region, the integration of student capacity meaningfully advanced the conference's vision (Figure 15.5).

Public scholarship and community participation

Extending the conference's reach beyond the academy was also a top priority during this event. In addition to live-streaming all eight keynote panels, we facilitated an evening public lecture that offered educational tools and resources to the host community. We also partnered with the Waterloo Public Library to facilitate a family-friendly 'Maker' event, which offered crafting and repair stations from members of the Region's maker community including Avocado



Figure 15.4 Two students from Wilfrid Laurier's Faculty of Music providing a cello-harp duo during a networking event.

Source: Photo by Kimiya Bahari.

Co-op and Mindful Makers (Figure 15.6). After many conversations of symbolism and expressive creativity, RISE Waterloo Region led a public mural painting in Waterloo Public Square which invited the public to participate in a collaborative art project and sparked conversation about community sustainability priorities in the Region.

Learning by doing

Our experimental unconferencing was imperfect, offering lessons and opportunities for deep (un)learning. We were constantly grappling with our power as organizers, intersectional lived experiences, and the confines of our context in balancing short timelines, limited budgets, and multiple perspectives. The conference organizers practiced clearly and firmly communicating our values and visions, especially when we encountered others who disagreed. At times, we mistook enthusiasm from our funders or partners as fully understanding our approach. For example, we outlined our zero/minimal waste goals with the coffee vendors and still received plastic cutlery and coffee creamers on delivery. Especially when challenging the status quo, clear communication of expectations is essential. Furthermore, we faced a fundamental event planning challenge with our aim to continue the momentum



Figure 15.5 Conference participants Sam Bliss and Ben Dube spontaneously performing their song 'Marxist Jargon' in the courtyard between sessions.

Source: Photo by Truzaar Dordi.

beyond the dates of the conference itself. The *Women and Environments International* magazine dedicated an entire issue to the CANSEE 2019 efforts in order to share these accomplishments with a wider audience and exemplify participatory transformations (Gansworth, Greckol, Perkins et al. 2019). Although the magazine provided avenues for greater public outreach, additional options for collaboration, whether group publishing opportunities or serving on advisory committees, could greatly enhance the CANSEE community and the sustainability agenda more broadly.

Focusing on just recoveries

While CANSEE successfully fosters and promotes EE research through publications and conferences, the organization has yet to truly reconcile with the colonial foundations of so-called Canada, nor the parallels between the traditional knowledges of Indigenous communities and the scientific principles of the EE field (Trospen 2011; Todd 2016; Nirmal and Rocheleau 2019). The 2019 conference helped awaken in the CANSEE membership a deep recognition



Figure 15.6 A gift bag sewing station at the Maker Night hosted at the Waterloo Public Library in partnership with Maker groups from across Waterloo Region.

Source: Photo by Truzaar Dordi.

that many of the ideas shaping this field have been ‘rediscovered’ and in fact originate from peoples and ways of life that have been erased, assumed, and ignored by the dominant market economy (Collard and Dempsey 2018; Kwaymullina 2018; Perkins 2017; Tuck and Yang 2012; Gaard 2001). As such, a recent directive of the CANSEE Executive is to honour the knowledge and wisdom of Indigenous Peoples by championing Indigenous voices and Indigenous-led discussions on meaningful and transformational change towards an Ecological Economy in Canada.

In efforts to facilitate these sensitive conversations in a ‘good way’, CANSEE formally partnered with Indigenous Climate Action (ICA), an Indigenous-led organization that works to empower Indigenous communities as leaders in climate change solutions through the provisioning of knowledge and resources (indigenousclimateaction.com). ICA’s Executive Director Eriel Tchekwie Deranger was a keynote speaker at CANSEE 2019; she outlined the crucial role of Indigenous ways of being, knowing, and relating in the fight for climate justice in Canada.

Over the last two years, CANSEE and ICA have held consultations and discussions about best approaches for facilitating future conversations. Instead of ‘tacking on’ an Indigenous theme to future conferences, a joint sister conference

led and informed by Indigenous voices will provide an appropriate and secure space to promote Indigenous communities as agents of change and knowledge keepers for climate justice and alternative economies. The first jointly held Indigenous Economics Assembly will take place virtually in June 2021. The Indigenous-led conference will offer training and skills-building to participants, enhance scholarship and partnerships across community advocates, and result in the co-creation and exchange of knowledge that can contribute to community-informed climate solutions.

Conclusion

Engaging Economies of Change offered an opportunity to address many of the norms and conventions of academic research in a new way, forging alternative pathways for collaboration, exchanging ideas and resources, and exemplifying research through practice. By working within the academy, we were able to break down many of the barriers that persist to keep research and researchers isolated, exclusive, and extractive. Instead, we extended invitations to Indigenous groups, political representatives, social activists, and everyday citizens to engage meaningfully in discussions, breaking bread, and contributing to regional solutions. Most importantly, this unconference proved to mobilize knowledge in practice through trusting partnerships, embodying the very solutions to this generation's greatest challenges.

The case presented in this chapter purports, on a more fundamental level, that all SDGs must intentionally advance intersectional feminism in order to achieve the goals of sustainable development in harmony. CANSEE 2019 offers a case study to think through climate action and partnership initiatives grounded in a commitment for justice and sustainability as they build towards an EE future. As such, we put forward two recommended changes to SDGs 13 and 17.

Rather than focusing on Climate Action, we argue that SDG13 should emphasize *intersectional climate justice* – prioritizing accountable relationships, consent, and sovereignty in taking intentional and coordinated actions towards intersectional climate justice. This could include supporting and amplifying existing community-based movements (e.g. Indigenous sovereignty, agroecology, nature-based solutions) and redistributing resources to support these efforts while making space for local and Indigenous knowledges to participate in achieving targets.

Moreover, SDG17, Partnerships for the Goals, could be reconfigured to more effectively prioritize solidarity and collaboration across the goals. More specifically, we propose establishing harmony with diverse actors through partnerships that address power imbalances between parties and actively work towards anti-oppression, decolonization, and reconciliation. Utilizing an intersectional lens, targets under this mandate could address intended and unintended implications of each SDG to identify where one goal might compromise another, or work at the expense of a particular group. Ensuring partners are equipped with the

tools, knowledge, and capacities needed would also be essential to remove barriers to participation.

The conference contributed to intersectional climate justice through partnership and solidarity in programming and logistics. However, our approach is not limited to academic conferences. We argue that all work, whether responding to climate change or other pressing social issues, should prioritize accountable relationships, consent, and sovereignty in taking intentional and coordinated actions towards the imperatives of justice, equity, and sustainability, including supporting and amplifying existing grassroots movements. *Engaging Economies of Change* was experimental in nature but purposeful in practice, resulting in raised expectations for future gatherings everywhere.

Note

- 1 Scarborough et al. (2014) estimates that the age-and-sex-adjusted mean greenhouse gas (GHG) emissions in kilograms of carbon dioxide equivalents per day (kgCO₂e. day) for high meat-eaters is 7.19, compared to 3.81 for vegetarians. At this rate, over three days and 250 people, we estimate to have saved nearly 2.5 tonnes (2,535 kg) of GHG emissions by serving a vegetarian diet over the three-day conference ($7.19 - 3.81 \text{ GHGe kg/day} = 3.38 \text{ GHGe kg/day} \times 3 \text{ days}$).

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16 A crisis of identity

The UN Sustainable Development Goals within an unsustainable law and governance framework

Kathryn Gwiazdon¹

Introduction

The UN Sustainable Development Goals (SDGs) were destined to fail. This is as much a criticism of the goals themselves as it is a criticism of the national and international law and governance framework in which they were created and are now expected to be implemented. Despite the language of universality and solidarity, the resulting document is conflicting principles within conflicting structures, conflicting values within conflicting goals, and conflicting actions of conflicting nations. These conflicts are due to a crisis of identity – of the SDGs, of global environmental governance, of global governance.

The SDGs fall within the larger umbrella of global environmental governance, and as such, if global environmental governance is failing, then the SDGs are failing. Global environmental governance is ‘the collection of governmental and non-governmental individuals and institutions that aim to influence individual and collective human behaviour regarding the global environment, including the drafting, implementation, and enforcement of local, national, and international law and policy’ (Gwiazdon 2020a). Its purpose is to protect the foundations of life; to provide food, economy, opportunities, development, and security; and to prevent harm, inequity, and suffering; its principles are democracy, justice, and science; its parties are states and civil society, governmental and non-governmental organizations; and its practice is dialogue, diplomacy, and negotiations (Gwiazdon 2020a). And it has been unable to confront our shared crises, evidenced by mass biodiversity and habitat loss, the acidification, pollution, and over-fishing of our oceans, the now year-round extreme wildfires and storms, and the continued racism, sexism, and xenophobia pervasive in environmental injustice, law, leadership, policy, and practice.

Taking a step further back, global governance is facing its own crises, all of which are connected: power imbalances in all its relational aspects, including who benefits from harm and who suffers harm; the hardening of borders and the amplification of calls of nationalism and protectionism; rising authoritarianism that is directly threatening democracy and the rule of law; an oppressive, all-encompassing economic system that requires values hostile to relational

thinking and acting (hyper-individualism, hyper-competition, and inequality), whose very purpose is to rise up through the fall of others; and the persistent and violent systemic discrimination of 'the other' – those who look or think or believe differently, those who are most vulnerable, those who are harmed. This is the framework to which the SDGs were borne and exist today, which raises serious questions of their authors, of their origins, and of their implementation.

Although the creation of the SDGs was through and within local communities around the world, the final language was ultimately determined by state leaders. They had the power to edit and negotiate and control the dialogue and the document's final form. Yet, it appears as if they were either unsure of their reality, in denial of their identity, or worse, deceptive with their intentions, as they ultimately created and adopted something in conflict with the governance systems that they themselves have created, nurtured, and now govern. The most blatant example of this conflict is how the SDGs are attempting to solve the world's greatest crises – poverty, hunger, violence, the destruction of the foundations of life – through the very system that took the world to those crises, development. This is impossible and yet they committed to it anyway. This is a crisis of governance, this is a crisis of justice, this is a crisis of identity.

And it started at its beginning, after all, what is the identity of development? For a document that attempts to bring present and future generations to the light, to peace and prosperity, it does so with a word that is historically dark, something more representative of the depths of human depravity and environmental destruction than human enlightenment and environmental protection. Throughout history, and even present day, it is a term and an act that is synonymous with harm, injustice, and oppression. Development – and the righteous cause of development – has and continues to erase cultures, enslave and kill humans, foster and create vast inequality, and poison soils, air, and water.

Development is colonialism and imperialism, annexation and occupation, indigenous erasure and 're-education', and land grabs and mass habitat destruction. Development is the language of the oppressive, white, patriarchy – those 'global leaders' who created our crises and brought the world to today. Simply covering that word with a concept as beautiful or as hopeful as 'sustainability' – or flourishing or life or peace – does not absolve it from its past evils. Indeed, it instead weakens the power and potential of the word, 'sustainability'. The development model itself follows the language of harm, the language of neo-liberalism, and the inequality that is its very purpose. It should be well understood by now that 'when you use the frames and language of your opponents, you don't persuade them to adopt your point of view. Instead you adopt theirs, while strengthening their resistance to your objectives' (Monbiot 2018). The development approach has never been sustainable, and indeed it has created unsustainability, yet this is the framework to which the SDGs have been placed and are expected to succeed.

Moving beyond language, there is also a crisis of justice, of truth and accountability. The world needs a document and a direction that identifies the truth to our harms, and although the SDGs identify the great crises of our age, they

fail to identify who or what systems cause those crises. This refusal to identify the harmful actors and harmful systems is a failure of accountability, and so ultimately a failure of justice. The foundation of law and governance is justice, and justice demands truth. Justice demands the identification of the actors and systems that harm so that those harmed can be made whole, so that future harms can be prevented, and so that those who harmed can be held to account. This is necessary for reparations, for healing, for reconciliation, or in other words, for the effective, sustainable rule of law.

The Preamble states, 'We are resolved to free the human race from the tyranny of poverty and want and to heal and secure our planet' (United Nations 2015). But healing is not possible without identifying those who have caused the harm and holding them to account. It also states that, 'It ... seeks to strengthen universal peace in larger freedom'. But peace and liberty is not possible without identifying the harmful truths of the past so that the world can move forward (United Nations 2015). A sustainable, functioning, and equitable law and governance system is not possible without justice. After all, how can we ever hope to address a harm if we do not identify who or what harms?

Indeed, identity itself *is* accountability. The duty not to harm and the duty to protect are foundational principles of justice and the rule of law – and are foundational principles to the SDGs. These duties cannot exist without accountability.² But due to the actions of world leaders, insofar as environmental law and governance is concerned, we instead have a reinterpretation of the precautionary principle. The precautionary principle is a principle of international law that demands that states take protective action even in the face of scientific uncertainty. But now we are faced with a more common practice of world leaders: the signing of beautiful statements, without the courage, conviction, or political will to realize those statements. Civil society is quickly learning that they must be cautious, even sceptical, in their dealings and expectations with world leaders. Why engage local communities to inform a document that goes nowhere, or one where their words were negotiated away? Why give already harmed or vulnerable people false hope? They are breaking the trust between the politically empowered and the politically powerless, and indeed harming others who genuinely care. After all, why should anyone trust these leaders, or this model, anymore? The reaction of the disillusioned, deceived, and neglected civil society, consistently faced with inaction or not enough action by those who have the power to act and to act enough, can be seen in the many youth movements around the world, highlighting the continued, unanswered harms and the continued, unanswered accountability of our climate crises, our extinction crises, our governance crises. And with each beautiful document drafted, signed, and swatted away this counter-movement will grow – and they do not speak the language of development.

In 1992 at the Earth Summit in Rio de Janeiro, the conference which solidified and celebrated 'sustainable development' in international law, the Dalai Lama stated that 'universal responsibility was the key to human survival' (Dalai Lama 1992). Ethics, or the inquiry into right and wrong behaviour and

when responsibility attaches, is the foundation of justice (Gwiazdon 2020c). All human rights, for example, are ‘strong ethical pronouncements as to what should be done’ (Sen 2009). But they are more, they are pronouncements that invite future legislation (Sen 2009). And perhaps the SDGs could be seen in this same vein, understanding that the same challenges to global governance raised above also directly impact the effectiveness of international human rights law. But ethics is more than simply listing principles on what could or should be, it must also highlight the harms, the perpetrators, and the victims – or in other words, the responsibility. The SDGs identify the harms, but not who or what systems created the harms, and so it is impossible to attach responsibility. They are unfinished business, ethically under-developed, but that is also what gives them hope – everything alive evolves.

The inclusion of continued dialogues in the SDG framework gives life to the SDGs and is their best hope to attain their goals. The SDGs find themselves in an identity crisis, yes, but it is not a fatal flaw. They have done immense good around the world in their attempts to focus nations on sustainable living, and even divert necessary funds to vulnerable nations so that all can better respond to our planet’s collective crisis. But a revisit of the SDGs is necessary. A revisit of the language, of the framework, of the purpose, and of the institutions in which they are expected to be implemented is necessary, or they will remain forever incomplete, forever in crisis, forever unattainable, and forever unsustainable.

This article will open with an inquiry into how the failure of the SDGs follows the failure of global environmental governance – that they are nothing more or less than a reflection of the state of governance itself. If the SDGs are expected to succeed within this overarching law and governance framework, it is necessary to identify the challenges to that overarching framework. It will then address the ability of the SDGs to not only respond to the root causes of these crises, but to confront them. It will argue that an evolution of the SDGs is required alongside an evolution of international law and governance. Only then, can the global community, in its mosaic of local, diverse communities around the world, truly move towards ‘people, planet, and prosperity’ (United Nations 2015).

The state of the SDGs is a reflection of the state of the system

The SDGs cannot be achieved within an unsustainable law and governance framework. Even though some of the 169 individual targets of the SDGs are showing signs of progress, all of the 17 goals are failing – and this was before the additional challenges brought by COVID-19 (*Nature* 2020). But the SDGs are unfortunately not unique in the challenges that they face. They are a part of larger national and global governance systems that are rife with challenges, and particularly as related to environmental protection. And the SDGs even go a step further than most traditional environmental laws and policies by addressing

several intersectional governance crises, such as extreme poverty and violence and exploitation towards women and children.

Only through an exploration into the challenges of the wider systems can one begin to understand the challenges to the SDGs. If the SDGs are failing, and they are a representation of global environmental governance, why is global environmental governance failing? And if global environmental governance is failing, why is global governance failing? The SDGs are a product of global negotiations within the leading global governance institution, the United Nations (UN). The UN was created as a response to the horrors of World War II in order to prevent a repetition of those horrors. World leaders believed that dialogue, even among adversaries, was a better path towards peace than acts of aggression to force peace. Indeed, the overarching purpose of the UN is 'to maintain international peace and security' (UN Charter 1945). But right now, there is the genocide of Muslim religious minorities in Myanmar and China; the use of chemical weapons on civilians in Syria; the Russian annexation of Crimea in Ukraine; the decades-long occupation of Palestine by Israel; the murder of environmental defenders in Brazil by illegal loggers (and with no protection from the state); the extrajudicial killings in the Philippines (and with the support of the President); the United States' decades-long wars against terrorists in Afghanistan; the ongoing weapons development, testing, and provocations in North Korea; the militarization of the South China Seas; child soldiers in the Democratic Republic of the Congo; the crack-downs on democracy in Hong Kong – and the list of human rights atrocities goes on and on. So, is the UN succeeding at 'maintaining international peace and security'? This is the law and governance framework within which the SDGs were drafted. This is the law and governance framework within which the SDGs are expected to succeed.

The list of environmental harms is just as long, as well as being implicated in nearly every facet of the listed human rights violations. Harm occurs because of the value of nature and for the territory of land, and how that value and that territory can translate into economic and political power. The trade of endangered species funds illegal arms deals and civil wars; the illegal logging of land leads to the destruction of not just the land, but the people living within it or that seek to defend it. Roads, dams, pipelines, mines, extraction sites, industrial agriculture and fishing, landfills, urban sprawl – each an element of development, each a form of harm to humans and nature, and each improperly or insufficiently regulated by environmental law and policy. Environmental protection is failing at all governance levels, local to global. This is the law and governance framework within which the SDGs were drafted. This is the law and governance framework within which the SDGs are expected to succeed.

The purpose of law and the purpose of the SDGs are aligned – to protect life – and so their challenges and challengers will also be aligned. Is the protection of life and the advancement of sustainability and democratic principles (including, but not limited to truth, justice, transparency, and participatory governance) at odds with our current governance structure? And if so, then what is the purpose of modern-day law and governance if not to protect life (Gwiazdon

2018)? Law must be an avenue to justice, and not a ‘barricade of injustice’ (Sachs 2009). Too often it seems that the struggle within law is when we try to protect the vulnerable and the disenfranchised in humans and nature, but then the harms come easy, either allowed by the law or easy to avoid accountability within the law. For example, high burdens of proof, even with or in disregard to the precautionary principle; the placement of the burden of proof on the victim and not the perpetrator; the territoriality of global harms that stops accountability at national borders; and even negotiators and powerful states that purposely weaken multilateral agreements, and then not sign or enforce the final document. Excuses to exploit, defences to develop – harm – is protected by the law and governance institutions around us, and that is the system that the SDGs are working within.

Weaknesses in traditional environmental law, whether state or international, are important in understanding the SDG approach. Environmental law is sectoral, erroneously placing something as foundational and intersectional as the environment in competition with other laws, as well as anthropocentric, placing human interests, like development, central to law and policy. This is at direct odds with the science and ethics of the interdependence and relations necessary for life, and the understanding that the systems which sustain us, constrain us (Engel 2018). Such relations, such limitations, however, are in direct opposition to the inviolability of state sovereignty that is the crux of international law and that dictates all governance interactions. But who rules these relations, and why can they not change the system?

In 2015, UN Secretary General Ban Ki-moon stated, ‘the post-2015 agenda should and will be determined by governments ...’ even while acknowledging the demands of civil society to be involved in the decisions which affect them (Fox and Stoett 2016). The same actors who drafted and are responsible for implementing the SDGs are the same actors who are responsible for the creation and efficacy of state and global governance. It is understood that states hold the power in international law and governance, and so states hold the power to the success or failure of any global agreements. For the SDGs, did the authors sign and send out a document that they knew would fail, or are they simply naïve to the system to which they are introducing these goals? And which is better – naïveté or deception? They drafted this, they decided this, they agreed to this, and so the failure lies at their feet. Or perhaps state power merely a mask? Dark money, bribery, and corruption has been a powerful force in domestic and foreign policy for centuries, steering decision-makers towards action and inaction. Dark money is generally considered as donations from unlisted sources to political actors for the purpose of moving elections and policies (see Mayer 2017). This would suggest that individual and corporate donors (often rooted in the extraction industry, which is an industry more prone to corruption) are the true power-wielders in state and global governance (see Transparency International 2021), and perhaps the lack of effective state and global governance is less a case of state power than it is a case of state impotence.

Although these questions on the intent of the authors and signatories, as well as the power imbalances that exist in global governance and global negotiations, are crucial for understanding not only the success of the SDGs, but all documents that follow this similar process – local and expert engagement, global negotiations, global adoption (and whether or not its commitments will be binding on nations), and ultimately, national implementation by those same authors – there are major root causes to our governance crises that have direct implications on international cooperation towards any global, common goals, including but not limited to (and each is inter-related): (1) the hardening of borders and the rise of protectionist, nationalist, statist states; (2) rising authoritarianism, openly attacking the principles of democracy; (3) growing inequality due to capitalism and neoliberalism; and (4) persistent and violent racism, sexism, and xenophobia (see Gwiazdon 2019). And their threats are clear, pervasive, and existential.

Sustainable development cannot exist when nations move inward and refuse to engage with the global community, or when individualism is so completely idealized and prioritized in governance systems that the result is loss, villagelessness, grief, and loneliness (see Yeginsu 2018). Sustainable development cannot exist when democracy is under attack, when authoritarianism is rising, when hatred and division is a methodology of governance, when the fault of vulnerability is placed at the feet of the vulnerable, when civil society has no voice in the laws which govern them, and when policy violence against anyone and anything that is not in power – whether it be humans or nature – is the *modus operandi*. Sustainable development cannot exist within a ruling economic system whose very purpose is competitive and predatory, where profit is measured by the loss of others, where growth is limitless, and where success is defined by those in power who used destruction, indignity, inequality, and development to attain that power (see Brown 2019; Sigamany 2016; Pogge and Sengupta 2015). Sustainable development cannot exist in governance systems disfigured by opportunity discrimination, economic discrimination, development discrimination, environmental discrimination, justice discrimination, life discrimination – where the colour of your skin or your religious beliefs impacts your life and liberty. If we are to understand why the SDGs are failing, we must look at whether the SDGs seriously confront any of these challenges.

The ability of the SDGs to uproot the roots of our crises

The ability of the SDGs to address the root causes to our governance crises is an issue of strength. For many involved and engaged, it is a well-intentioned approach facing a hostile, larger, and more powerful audience – it is the sustainability world facing the development world, the community world facing the individualism world, the value of life world facing the value of profit and power world. And it attempts to merge these conflicting worlds. The SDGs are a global endeavour to address the major crises of human society – poverty, hunger, peace, justice, the foundations of life – and through a development

model. But does the SDG approach reject the root causes to these crises, does it confront them, or does it embrace them? Do they continue the harm, simply lessen the harm, or do they offer a way to heal the harms – as law demands?

The history and importance of sustainable development in law and governance has been explored extensively in scholarly writings and so will not be enumerated once again here (see Atapattu 2019; Bosselmann 2017; Bosselmann, Engel, and Taylor 2008). One of the most notable descriptions is the Separate Opinion of Justice Weeramantry in *Gabčíkovo-Nagymaros Project (Hungary/Slovakia)* before the International Court of Justice, which carries the history of sustainable development from the Brundtland Commission to the Rio Declaration, and even before those critical points in its evolution (Weeramantry 1997). The principle of sustainable development is now a well-supported principle of international law that also implicates other principles of international law, at differing levels of legal weight and acceptance, such as the duty not to harm, the duty to protect, the precautionary principle, the principle of sustainability, the right to a healthy environment, the rights of future generations, and even the right to a stable climate (see Bosselmann 2017). Key to its understanding is the limitation placed upon development to protect the environment for present and future generations, as well as living in harmony with nature and within our systems natural limits. But although a well-intentioned principle for international law, the results in practice have violated nearly all of the principles it seeks to advance. Development reigns, economic – and inequitable – growth reigns, planetary boundaries are broken, more people are made vulnerable, and more vulnerable people are made more vulnerable. Sustainable development has either been so ignored that it has become a continuation of disharmony between humans and nature, between humans and the foundations of life upon which they depend, or it was never intended to change those harmful paradigms. One is impotence in the face of those harms; the other is complicity with those harms.

Notwithstanding its challenges, sustainable development has an important place in the evolution of global environmental governance and even domestic law. But that is what it is, a point in evolution, and a point that must now evolve as we learn more and understand more. Indeed, since its inception, and learning from its limited successes in application, much has changed in our understanding of sustainability through and separate from a development model. Sustainability through development, sustainability through growth – is that even possible? Several experts, including high-profile individuals within the United Nations system such as Philip Rolston (former UN Special Rapporteur on Extreme Poverty and Human Rights), have suggested that the SDGs must be ‘[decoupled] from economic growth targets’. (Nature 2020). Not only is growth an ‘easily attainable’ goal, and not some wish to be attained, but the benefits of growth are not shared equitably, and it has been perverted, ‘[assigning] values to undesirable things’ such as unsafe workplaces, increased traffic, and rampant pollution (Nature 2020). Rolston believes that ending poverty through economic growth and ‘an ever-greater reliance on the private

sector' is a fairy tale and 'rather than an end to poverty, unbridled growth has brought extreme inequality, widespread precarity in a world of plenty, roiling discontent and climate change...' and 'multinational companies and investors draw... from public coffers, while poor communities are neglected and under-served' (Alston 2020). The entire report is a crucial read to any serious inquiry into the advancement of the SDGs. Ultimately, Alston believes that 'poverty is a political choice and it will be with us until its elimination is reconceived as a matter of social justice' (Alston 2020).

Social justice. One of the top global experts in the world on poverty, the focus of the first SDG, believes that social justice – not sustainable development, and certainly not development – is the necessary approach to eliminate poverty, to attain SDG1. And this is in relation to the first and arguably most fundamental SDG. If the SDG approach to the elimination of poverty is not only ineffective, but causing the harm it purports to end, then what are the implications for all other SDGs? Is development equally ineffective, or even harming, goals to end violence towards women or food insecurity? And can justice serve as a more appropriate approach to the attainment of all of the goals of the SDGs? Perhaps it is time for the SDGs to evolve to simply, 'sustainability goals', and through a framework of justice – of *just* law and governance (see Gill 2020). After all, it is injustice that creates inequality, it is injustice that creates division, and it is injustice that creates harm. And injustice is the result of the decisions – the actions and inactions – of our world's leaders.

Alston's conclusion highlights this additional, crucial point: 'poverty is a political choice'. And this assessment is supported by others who believe that 'the primary challenge [of the SDGs] is [for decision-makers] to make better decisions' (Dernbach and Cheever 2015). Our shared global crises are the result of innumerable actions and inactions that are prioritized or de-prioritized by political leaders, negotiated and edited by political leaders, and adopted, implemented, or ignored by political leaders. And yet it is these same political leaders who created – and we are expected to believe will implement – the SDGs. This is a crisis of governance.

The previous section identified several root causes to our governance crises, all of which are threats to peace and democracy – namely, the rise of ignorant and divisive protectionism, nationalism, and authoritarianism, the cruel and inequitable rule of capitalism and neo-liberalism, and the ever-persistent and ever-violent structural racism, sexism, and xenophobia. And although those same root causes cause profound harms to global sustainability efforts, they are largely absent from the SDGs. Why? How can harmful behaviour be changed if it is not identified? How can harmful systems be targeted if they are not highlighted? Is healing even possible without identifying who or what is accountable for the harms?

Some of the bad actors or bad systems can be assumed due to the language of the goals and targets. For example, calls to raise women up, ensure full and effective participation, and address maternal mortality leads one to ask: who or what is blocking or challenging their rise – or indeed, pushing

them down – who or what is denying them a seat at the table, who or what is responsible for the systems that are killing them? And then one can simply look to the powerholders and the decision-makers to see the culprits. And it is the same with several other goals. For example, when looking at the language on forced labour, human trafficking, and slavery – who or what is doing this and for what purpose and who is causing and allowing this? Who or what is causing unsafe, insecure work environments? Who or what is destroying culture so much that the global community must unite now try to save it? What economic and governance systems have created the poverty that must now be addressed? Why does Africa, or women, or minorities, or refugees, in particular, need attention? What is the history of their harms that have made them vulnerable? Who made the vulnerable, vulnerable? Who made developing nations, developing? We must look to who allows these harms, legalizes these harms, and profits from these harms. We must look to who creates and upholds the systems – of justice, economy, and governance – that create these harms, fail to prevent these harms, or actively allow these harms to continue. And in many and most cases, it is the state who has caused or allowed the harm. Make no mistake, the authors and signatories of the SDGs are the main perpetrators of harm to the SDGs, and in order to address accountability, they would have to look into the mirror.

And so, these global documents will continue to fail. The method is fundamentally flawed as the perpetrators are the judges and the jailers. Powerful states will continue to avoid taking accountability for their historical or present-day harms, strong words from local stakeholders will continue to be negotiated away until it becomes meaningless diatribe, and then the final, toothless product will be universally agreed upon and celebrated – by themselves. The harm that this causes is immeasurable – the disenfranchisement, the apathy, the anger. The model itself is incapable of exposing and tackling unjust structures as the model itself is based in unjust structures (see Alston 2020). Not only does its power hinge on the perpetrators of harm, but the development approach itself is rooted in colonialism, imperialism, and plantation economics – the very systems that created and continue power imbalances, nationalism, racism, predation, and the commodification of nature. Follow the path of plants, and you follow the path of slavery (Gwiazdon 2020b).

The SDGs is a document and an approach for another time and another people and is a perfect example of what is wrong with global governance. It says all of the right things, but with no courage behind it – no teeth, no enforcement, no requirements for action. It is everything and it is nothing, within ‘a platform that welcomes all and challenges none’ (Jensen 2020). The youth movements see this and so should the rest of the world. The method is wrong. The model is wrong. The words are wrong. Give the people the truth, even the hard truths, for truth is respect. The SDGs ‘promises’ peace. But is that possible within a framework that harms and a model that emphasizes the inviolability of sovereignty? The success of the goals demand limitations to state power, but nowhere are such limitations discussed. Sustainability demands constraining

one's own actions and in relation to all others. Albert Einstein was not only a physicist and a philosopher, but he was also an internationalist and a pacifist. He and his colleagues knew that harm, division, war, and peace 'will demand distasteful limitations on national sovereignty ...' and implored the global community to 'remember your humanity and forget the rest' (Russell-Einstein Manifesto 1955).

The document also ensures that states 'will' implement the Agenda (United Nations 2015). Then why did they not make it binding – an act well within their power, and indeed standard practice for bilateral and multilateral agreements in trade and development. It can only be assumed that they did not make it binding because they did not care to – or at least those nations who can dictate negotiations and voting blocs did not care to. This is a crisis of global governance.

The SDGs also avoid words of power and empowerment, the emotions and passions that inspire and build solidarity. Indeed, it is emotion that carries movements and laws in the face of injustice (Nussbaum 2013). Poverty, hunger, thirst, pollution, depravation, violence, exclusion – everything that the SDGs hope to address – is an attempt to right wrongs; it is an attempt to address injustice and unjust systems. But instead of words of power, truth, and honesty, the document uses jargon, which continues the disconnect between the amorphous global governance world and the very real people who are harmed. Even the word 'sustainability' is political jargon that inspires little. After all, what does it mean, to sustain? Do we not want people to blossom, care, relate, share, flourish? And what about those who seek to cut the stems before they bloom? Can the world's leaders not loudly and courageously identify that racism harms, sexism harms, the patriarchy and misogyny harms, white nationalism harms, religious extremists harm, hatred harms, weapons sales harm, wealth harms, capitalism harms, growth harms, development harms. These are simple statements. Which begs the question, who is the audience of the SDG? Political jargon is for politicians; the language of empowerment is for revolutionaries.

Simply and sadly put, the SDGs do not rise to the occasion of their lofty goals because they fail to confront the very people, principles, and systems of harm that created the crises. Instead, they offer yet another example of the failure of world leaders to engage in the serious and critical dialogue required for sustainability: a dialogue on relationships and not competition, a dialogue on limitations and not sovereign power. There is no mistake, accountability is missing because state leaders would be accountable. Reconciliation and reparations are missing because state leaders would be responsible for the truth required in reconciliation and the costs required in reparations. Truth motivates, courage motivates – and this document lacks both. You cannot have a document that advances justice, law, and governance if it is silent on the foundational principles of justice, law, and governance – truth, accountability, reparations, and reconciliation. You can have one that says justice, but not one that can ever hopes to live it.

SDGs need to embrace the evolution of the protection of life (sustainability)

But there is still hope. There is opportunity for the SDGs – and those who truly support them – to rise to the occasion of their ideals built into the very framework of the SDGs: the continued, interactive dialogues (United Nations 2015). Justice is democracy and democracy is dialogue. The incorporation of a continued dialogue within the SDG model is perhaps the most valuable aspect of the entire document. It renders the SDGs a living, evolving body of work, capable of reflection and change. And reflection and change are needed. Development, growth, and prosperity must be redefined and separated from its Western, imperial origins and informed by indigenous knowledge, relational ethics, and planetary boundaries. The focus should be on what it takes for a community to grow together and sustain relationally, as opposed to development mechanisms and growth models as determined by the financial sector, GDP, trade, and investments. Indeed, the end goal cannot be development, but the just, sustainable, flourishing of life – a life only possible through relations, interdependence, systems-thinking, and principles of equity and equality. Responsibility and reparations for historical harms and for systems of harm must also be incorporated and addressed, as well as reconciliation for those harms, for justice cannot exist without accountability.

Indeed, it is through these dialogues that the SDGs have evolved. In February 2021, the Economic and Social Council, the body within the UN that is responsible for the continued dialogues, convened a Special Ministerial Meeting on ‘Reimagining Equality: Eliminating Racism, Xenophobia and Discrimination for All in the Decade of Action for the SDGs’. The Presidential Statement on the occasion of the meeting offered some incredibly powerful words of identification and accountability on one of the most powerful, systemic root causes to our crises – harm and division as seen in racism, ‘Racism is the repudiation of our common humanity ... Despite our efforts, inequalities in the economic, social and political spheres, however, continue to permeate institutions, social structures and everyday life’ (Akram 2021). And it continued with targeted language and specific acts that states could take, with each aimed at strengthening the SDGs within law and governance,

Further efforts are needed to expand laws and regulations forbidding hate speech, incitement to violence and other types of hate crimes offline and on-line. Strengthening anti-discrimination measures, including grievance redress mechanisms, is of utmost urgency. Law enforcement culture, policies and practices which violate human rights need to be addressed. Concerns were expressed about tsunami of hatred and global resurgence in violent nationalism, ultranationalism, xenophobia, neo-Nazism, religious discrimination such as Islamophobia and other forms of intolerance. Social media

platforms too are being exploited to spread hatred and disinformation particularly amidst the pandemic.

(Akram 2021)

This message has purpose, it has identity, and that is because it spoke to the issues and people and harms of now. These dialogues, and in this vein, must continue.

As a living document, a living, relational, just framework is necessary for its future evolution. The principle of ubuntu, the practice of solidarity, and the methodology of rooted cosmopolitanism can provide that way forward. Ubuntu is an ethical and legal principle from southern Africa that roughly translates to 'I am because we are' (Tutu 1999). It is fundamentally a principle of solidarity and togetherness, for togetherness, that understands that our existence is inextricably entangled with others. When applied in law, reconciliation is a crucial aspect, for there cannot be healing and understanding without truth and reconciliation (see Sachs 2009). Ubuntu goes hand-in-hand with rooted cosmopolitanism, a methodology that values the particular multi-dimensional place and value of each person, and how that place also informs the wider, global community (see Appiah 2007a, 2007b). These concepts – of life, care, and empathy – understand that our value is our diversity, and that we should not reach for some amorphous, anonymous universality, but rather see that only through our differences can we not simply sustain, but flourish. And ethical engagement can provide the space for this framework, for these serious inquiries, on individual and communal relations, on right and wrong behaviour towards other individuals or to the community, and on when responsibility attaches.

There are several efforts in law and governance that are confronting the harms of the existing unsustainable framework in international environmental law and governance, rooted in anthropocentrism, limitless growth, and flawed or undervalued understandings of the relationship and dependence of humanity on nature. These approaches stress the relations between humans and nature, and humans within nature, expanding the principle of ubuntu into not simply relations of identity between humans, but relations of identity between humans and nature – we are because nature is. Our identity is deeply intertwined within nature's identity. Ubuntu has also been extended to the nation-state to counter the harm statist states are advancing – a state is a state because of other states (Gwiazdon 2020c). This relational sovereignty, with intentional decoloniality, can confront historical injustices and methodologies and better guide national and global governance and decision-making (see Mignolo and Walsh 2018). After all, just as with individuals in a community, a state's identity and well-being is deeply intertwined within the community of states and its decisions and rule of law should reflect that. This can be seen in efforts that recognize the rights to nature or the particular power of humans to harm and that attached responsibility (e.g. Earth trusteeship), that emphasize the basis of ecological systems to all governance systems and de-centralize the role of humans (e.g.

eco-anthropocentrism, ecological law and governance, Earth law, and Earth jurisprudence), and that realize that limits in relation to one another are necessary for our common future (e.g. planetary boundaries) (see Ecological Law and Governance Association 2021; Unuigbo 2020; Jennings 2016). The UN Harmony with Nature programme, an initiative of critical importance that hosts and guides the continued interactive dialogues on the SDGs, connects and tracks these peoples, principles, and parties so as to build another fundamental component of the SDGs – solidarity (see UN Harmony with Nature 2021; Szpak 2017).

Conclusion

From Brundtland to Rio, from the Millennium Development Goals to the SDGs, from human rights to the right to a healthy environment, from Harmony with Nature to the Rights of Nature, from Earth Jurisprudence to ecological law and governance – the conversation and approach is evolving, the understandings of what sustainability requires is evolving, and the SDGs can be a major contributor to that evolution. We know that development harms. We know that development is an approach that took us to the crises of today, and we know that development will not lead us to the achievement of any of the SDGs. After all, even with SDGs, development reigns.

But justice could. Justice is rooted in truth, equity, fairness, and the protection and genuine inclusion of the vulnerable, and a justice for sustainability could also be rooted in relational ethics, ubuntu, solidarity, and rooted cosmopolitanism. Justice speaks to each of the 17 goals and each of the 169 targets – and it has the strength, courage, and conviction, like nothing other, to confront the root causes to the challenges of global governance, global environmental governance, and the SDGs. Justice can identify the systems and the actors who are causing harm so that we can learn from them, not repeat them, and move forward. And it can hold to account those who have harmed, demand reparations to allow the harmed to be made whole again and create a space for reconciliation so that all – the perpetrators and the victims – can be healed. Justice could be a powerful heart to the SDGs, because injustice is at the heart of development.

The SDGs are an important part of the story of humanity's attempts – through international relations, law, and governance – to sustain life on earth, and in the face of powerful, harmful actors. But they are just that – a *point* in history and global governance, and certainly not an *endpoint*. In a spirit of critical loyalty to the underlying principles of the SDGs, and to the underlying principles of good, sustainable law and governance, it is necessary to assess the root causes to the failure of both – development without natural limits, individualism without societal constraints, economy without the temperament of justice, and hate and division without governance restraints. Only through the serious inquiry and identification of the harms of the past and present, and the identification of the actors and systems responsible for those harms, can

we hope to make a path towards a sustainable, flourishing future. It is still very possible to take the spirit and the intentions of the SDGs and evolve them into something that speaks courageously, powerfully, and truthfully to the people and crises of today. Let us take that mantle, we have work to do.

Notes

- 1 Executive Director, Center for Environmental Ethics and Law, Virginia.
- 2 It is important to note that accountability is mentioned in the document, but only in terms of being held accountable to the agreement, and not to the harms that caused the crises which led to the creation of the SDGs.

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17 Conclusion

From ‘Sustainable Development Goals’ to ‘Ecological Livelihood Goals’

The best laid schemes o’ mice an’ men / Gang aft a-gley.

–*To a Mouse* by Robert Burns

Navigating the long now

Sustainability has become the ‘summum bonum’ for global civilization: a secular repackaging of the Augustine’s City of God or Winthrop’s City on the Hill – an integral vision of ecological and social justice in perfect balance with the economy, and contrasting with the Babylon of reckless consumer capitalism and global real-politic. It is a misleading vision only because it does not adequately address the genuine trade-offs between the wonderful achievements of liberal civil society and moral individualism, on the one hand, and the communitarian solidarity that must provide the skeletal framework and nurturing soil upon which this ultimately depends, on the other. And the means – sustainable *development* – inadvertently draws attention to the tension between invocations of putative equilibrium, balance, and harmony, and the intrinsically disruptive and dynamic propensity of disequilibrium that characterizes both evolutionary ecology and human society. But at the same time, as we argued in Chapter 2, the contingent and impermanent nature of human society and the unavoidably dynamic relation between the nested metabolisms of economy and ecology do not change the reality that there *are* biophysical limits to growth.

Global society is often likened to a massive container ship: with enormous momentum, it is difficult to slow down; with a large turning circle, steering is impossibly clumsy and imprecise. The slower the speed, the longer the range of radar and course modelling systems, the better the chance that the vessel will be able to navigate around icebergs and reefs. The simplest imperative that flows from this insight is this: global civilization has a better chance of staying the course, the slower the speed at which energy and materials are cycled, and the smaller the metabolic scale of human culture relative to the biosphere. We may not be able completely to avoid and disengage with the Promethean logic of modern development. But sustainability requires, at least, that we slow down. Success will depend upon human society – the structures of political economy

but also the granular detail of culture, mythos, and structures of meaning – internalizing the perspective of what Stewart Brand refers to as ‘the Long Now’ (2000).

At the same time, there is a paradox. The equivalent of ‘far-sightedness and radar’ in this, perhaps clumsy, metaphor, is science and technology. Scientific modelling allows us better to understand both our metabolic trajectory and upcoming obstacles. This contrasts with the situation of the earliest farmers of Mesopotamia, who were unable to understand the fatal relation between irrigant agriculture and the salination of the soil (Eisenberg 2000). Technology opens up the possibility of radical course change: for instance, as with nuclear fusion as an unlimited, but carbon-free, source of energy; or geo-engineering as a response to climate change. But the trajectory of science and innovation is itself dependent on economic growth – which is to say, increasing the speed and momentum of the ship – with all that implies with respect to metabolic impacts on the systems of the biosphere.

Complexity and political economy

Complex systems are difficult to understand, let alone to guide or direct. Very little can be predicted with certainty about the weather, the stock exchange, a child’s social and psychological development or the future end-state of any rolling evolutionary ecological trajectory of change. At best, as a means of orientation, complexity science can prepare us for the unknown and to strengthen the resilience of those aspects or functions of society that we cherish; while undermining the resilience of configurations that seem to be undeniably bad (e.g. the destruction of the rain forests or the mechanisms that are driving species extinction). With less certainty, a complex systems perspective might allow policy making and politics tentatively to move in the direction of strengthening an alternative ‘basin of attraction’ that may be more resilient in the face of certain ecological and economic shocks (see Chapter 1 and Figure 17.1).

Taking seriously the proposition that there are biophysical limits to growth, in Chapter 3 we argued that for 200 years the elaboration of the system of nation-states, the extension of price-setting markets and, most recently, the dynamics of global integration, were all predicated on growth. Although sharing an elective affinity with the left/right poles of the archetypal modern political-ideological spectrum, state and market are so mutually constitutive that it makes sense to refer to the *State–Market*. Following Norbert Elias, Karl Polanyi, and Ernest Gellner, both state and market dynamics are a function of processes of individualization and spatial and social mobility. This trajectory of transactional individualism in both economy and culture corresponds to: market-liberal axioms in right wing political ideologies; class-citizen axioms in social democratic and socialist ideologies; and, more recently, hyper-individualist constructions of social justice in relation to marginalized groups in cosmopolitan left-wing politics. Individual

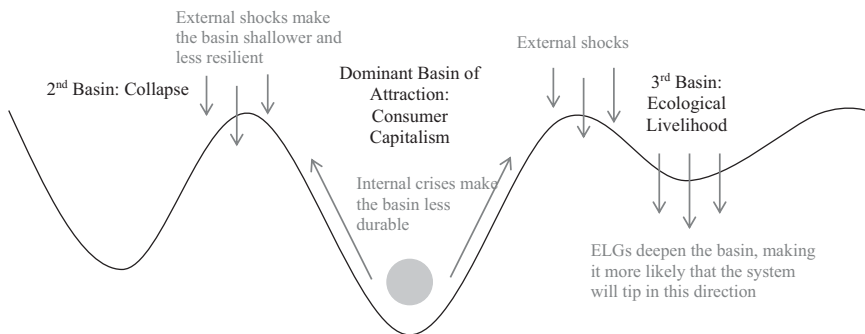


Figure 17.1 Alternative basins of attraction.

preferences and interests are aggregated by the Market on one side, and by the State in relation to underprivileged (class, race, gender, and others) groups on the other. Regardless of the political or ideological orientation, the expansion of the State–Market and the hyper-individualism intimated by Bauman’s ‘liquid modernity’ (2000) or Elias’s ‘society of individuals’ (2001), have emerged at the expense of the ‘*gemeinschaftlich*’ communitarian attachments and identities associated with family and place-bound community (Tonnie and Loomis 2017). This process was driven by the progressive disembedding of the economy and the cohesive rural social order of traditional society, described in such detail by Polanyi in *The Great Transformation* (1944).

From the ecological-economic perspective advanced in Chapter 2, the disembedding of the economy is by definition accompanied by a rapid expansion in the associated flows of energy and materials, that is, the societal metabolism. The veritable success of the State–Market in terms of technological innovation and the generation of wealth derives in principle from the efficacy of price-setting markets as the principal means of allocating resources. Attempts to replace the market with socialist central planning in the twentieth century were always an unmitigated disaster that resulted in many cases in millions of deaths (Chapter 7). In this sense, market mechanisms cannot, and never should be, eliminated completely. Global civilization, any trajectory of innovation, the integrity of national societies and the raft of cherished values and institutions that constitute liberal society and derive from the sacral conception of the fundamental dignity of individuals, all depend, to some extent, on the continuing functioning of the market. The question is really the same one posed by Karl Polanyi, namely: how can the powerful and transformative but corrosive power of the market be saved from itself? How are social cohesion and ecological integrity to be protected from the consuming logic of intensive growth?

Concerned less with ecological integrity, much more with societal cohesion and the totalitarian dangers evoked by class war, Polanyi’s understanding of the logical outcome of the ‘countervailing movement for societal protection’ was

directed to a rebalancing of the Market by the State (Quilley 2012). Essentially, he understood the destruction of Livelihood – the domain of informal economy, embedded exchange, ascriptive patterns of mutual obligation, family reciprocity, and communitarian relationships centring on affiliations with particular places – to be an inevitable price and condition of modernity. In the Polanyian ‘solution’ *collectivist* aggregation of individual interests and preferences through the redistributive state replaced bottom-up, self-organized *communitarian* forms of protection rooted in culture.

However, this ‘solution’, as we argued in Chapter 3, was always predicated on ‘metabolic space’ and economic growth. In the world of limits that we described in Chapter 2, the metabolic room for manoeuvre begins to contract, eventually taking the economy and the state in the same direction. In this context, any conceivable movement for societal protection must, by definition, involve expanding the domain of Livelihood to take the strain. This may be a re-discovery, reinvention, and re-expansion, as in the Global North where a century more of growth and the over-extension of the interventionist welfare State has reduced the domain of Livelihood to a rump. Alternatively, in Global South societies where significant elements of traditional, communitarian support networks coexist with thriving informal economies, it may take the form of preservation, repurposing and modifying. Both can marry Livelihood to the Internet, the Fourth Industrial Revolution, and the Fourth Wave of Do-It-Yourself (DIY) (Chapter 13; Dartnell and Kish 2021), to connected distributed nodes across the world while remaining true to localized needs and culture – a neotechnic livelihood.

In the long term, the rebalancing of the State–Market with Livelihood resonates with the seven principles of resilience (Stockholm Resilience Center 2015). Compared to rationalized and relatively efficient, dedicated provision of services delivered by typical state institutions (for instance, in areas such as schooling, university education, and health), Livelihood approaches tend to *maintain diversity and redundancy* (Chapters 9, 11, and 13). At the same time, by enhancing local feedback loops (for instance between production, consumption, and the status of local resources), and by diversifying the mechanisms, purposes, and orientation of education (Chapter 10) such approaches tend to *encourage learning*. Defined by a radical commitment to subsidiarity, and a systemic shift in the mode of regulation from global institutions and markets, to the nation-state, and from the state to regional government, local communities, and households, Livelihood strategies are also synonymous with *polycentric governance strategies*, and a more multitiered capacity to *manage connectivity* (Chapters 5 and 15). Similarly, by slowing down metabolic cycling of energy and materials at all levels, the rebalancing function of Livelihood is likely to enhance the *management of slow variables* (Chapters 7 and 8). The same commitment to subsidiarity, by allowing for a more complex play of institutions between the family and the global market, breaking down the very binary contrast between the domestic and public spheres, and allowing for the emergence of highly contextual solutions to particular problems in relation to domains such as health

(Chapter 9), energy (Chapter 6), and restorative justice (Chapters 12 and 15), the expansion of Livelihood is likely to *broaden participation* considerably (Chapter 14). And finally, the more nuanced relation between the state, civil society associations, households, embedded market exchange and marketplaces, and global price-setting markets, the emphasis on Livelihood is likely to promote *complex adaptive thinking* (Chapter 16) and broaden the ‘Overton window’ in relation to all sorts of concrete issues (Prak 2020).

Ecological Livelihood Goals: Trade-offs and wicked dilemmas

Taking the presumption of growth out of the sustainable development goals is not straightforward. We have been careful to highlight the trade-offs and Janus-faced nature of the relation between Livelihood and the State–Market. At face value, to the extent that there are biophysical limits, the metabolism – the throughput of energy and materials – must tail off (low/no growth) and contract (degrowth). Steady-state proposals associated with commentators such as Victor (2008) and Jackson (2009) address this ecological-economic problem of scale, but sometimes make the unwarranted assumption that the dynamic equilibrium – Eldorado condition of the ‘steady state’ – might be sustained indefinitely, by sophisticated governance and planning. It seems much more likely that the intrinsic propensity for ‘creative destruction’ (Schumpeter 2009) in both human social development (in the wake of war, technical change, innovation, and so forth) and evolutionary ecology (e.g. consequent on evolutionary responses to climatic systems changed) will always subvert the ‘best laid plans’.

By slowing down, filtering and complexifying humanity’s relation to the biosphere, the rebalancing of the State–Market by Livelihood would likely enhance the capacity of society to adapt to such intrinsic instability. The domain of Livelihood might also perhaps engender myriad improvements in relation to the communitarian deficits of liquid modernity – in relation to loneliness, unhappiness, mental health, alienation, social capital formation, the strength and resilience of families, and the need for a more diverse understanding of citizenship and the interface between public and private domains (Prak 2018). On the other hand, many of our most cherished values and institutions have been embodied and carried forward by the high energy nexus of liberal–democracy (Chapters 11 and 14). It must be the case that any contraction in the State–Market also carries with it a considerable threat to taken-for-granted social and civic rights in relation to problems such as gender relations, the autonomy of people with disability, the delivery of equality under the law in diverse societies. How one evaluates such trade-offs is not a scientific but a political problem.

There can be no doubt at all that, in principle, the domain of Livelihood presents a real threat to the smooth functioning of democracy and liberal institutions such as the legal system, as well as the efficient operation of open markets precisely because, at least to some extent, it qualifies the ideational structure, categories, and practices associated with individual sovereignty.

Depending on how far this goes and the extent to which individuals become dependent on local/familial/ethno-religious survival units, there is a real risk that nepotism will, once again, clog the arteries of civil society. Such reversion would undermine the operation of blind justice and compromise the integrity of democracy as the aggregation of individual preferences – corrupting the institutions of state and opening the way to serious injustice and tyrannical oppression of minorities. Thus, we must be specific and intentional in our work to create a new system that is just, socially progressive, and safe within ecological boundaries. The SDGs must adopt new targets that are not just aimed at reducing humanity's impact on the environment but at a systemic reinvention of the modern world where modern values, new technologies, and old values of community and Livelihood come together.

Much will depend on the balance between localist–communitarian and national–collectivist arrangements, and there is likely to be an enormous diversity of highly contextual arrangements. It may be that these dangers are more easily managed in Western societies with long histories of democracy and individualism. Traditional societies have greater resources in terms of extant forms of communitarian localism upon which to draw; but by the same token, these carry a much greater danger that the balance will tip over into the oppression of individuals and minorities.

Caveats notwithstanding, the first order of ecological economics must be to attend to scale. The metabolism of the economy is nested within that of the biosphere and there must be a limit to the flows of energy and materials, and therefore the degree of social complexity, that the biosphere can accommodate (Daly 1990; Quilley 2011). Whatever metabolic space is left when this overall parameter has been established determines the low-entropy resources available to deliver on myriad societal goals. The brutal fact of the matter is that higher forms of low-entropy complexity, which emerged the latest in human development, are most vulnerable. The unfolding moderation of the ecological footprint of the State–Market by less-costly, higher entropy solutions, may entail, for instance, the re-emergence of implicit, context-bound and multifunctional forms of child, sick or elder care in the expanding 'oikos' domain of household (Chapters 9 and 11) and the retrenchment of costly, bureaucratic, dedicated, single-focus, expert-delivered, and commodified systems delivered by the Market (e.g. professional childcare) or State (e.g. National Health Service hospital). But there is a great difference between finding ways to allow households back into the picture and eliminating formal provision completely.

The 'Great Acceleration' has seen unprecedented progress in the advancement of rights-based forms of emancipation (e.g. human rights, animal rights, sexual liberation, education) along with economic development and poverty reduction but at the cost of an exponential increase in environmental harms (climate change, ocean acidification, crashing biodiversity, resource exploitation etc). These processes are inevitably and inextricably linked (Kish and Quilley 2017; Spash 2017). It is not obvious that there is necessarily a solution. But as Daly and Farley (2011) observe, 'when faced with the unhappy dilemma of

Table 17.1 Ecological Livelihood Goals

#	Topic	Existing overarching goal	New targets
1	No poverty	End poverty in all its forms everywhere	The number of local food networks, farmers assemblies, farmers markets, producer cooperatives.
2	Zero hunger	End hunger, achieve food security, and improved nutrition and promote sustainable agriculture	<ul style="list-style-type: none"> • The proportion of local consumption produced and processed within 100 miles. • The number of people working on the land with the aim of maintaining a much larger rural population than has been normalized in the West. • The retention of rural skills with respect to any food /product processing (cheese making, brewing, leather tanning, slaughter and butchery, milling and baking), land management (hedge-laying, dredging, fencing, carpentry, iron-working, horse-shoeing, coppicing, reed-bed management, and so on) • A graded spectrum of regulation and taxation that is essentially permissive and libertarian for household-scale/ farm gate activities, increasingly interventionist and directive with the scale of the enterprise. The intention would be to shift the unit cost of regulation and tax from the domain of Livelihood to the actors operating in the disembedded, price-setting context of global markets.
6	Clean water and sanitation	Ensure availability and sustainable management of water and sanitation for all	<p>The prevalence of self-organized, Internet-facilitated community and household homeschooling.</p> <p>The implementation of taxes to positively discourage certain kinds of trade and the intrusion of branded and processed commodities into local markets.</p> <p>Local and municipal bylaws that are permissive of backyard animal husbandry, slaughter, and butchery.</p>

Table 17.1 Cont.

#	Topic	Existing overarching goal	New targets
3	Good health and well-being	Ensure healthy lives and promote well-being for all at all ages	<p>Achieve planetary health to secure the health and well-being of future generations.</p> <ul style="list-style-type: none"> • Number of planetary boundaries transgressed at local, national, and global scales. • Number of basic needs met without transgressing planetary boundaries at local, national, and global scales. • Build health system resilience for a post-growth future. • Number, nature, and impact of community- and place-based social innovations for health and well-being. • Extent to which national health outcomes and measures of subjective well-being are sensitive to economic contraction. <p>Create conditions for health to flourish across socio-ecological scales (e.g. healthy soil biodiversity, individual health, population health, planetary health).</p> <ul style="list-style-type: none"> • Number, nature, and impact of health and well-being initiatives that demonstrate positive outcomes across two or more scales (e.g. human health, community resilience, population health, local economic development, local ecosystem regeneration, planetary health)
4	Quality education	Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all	<p>Education should embrace the reality and necessity of a society in which individual rights are tied to structures of mutual obligations, and in which individuals are enmeshed in place-centred relationships of interdependency (rather than contracts) extending over time. Such relationships with individuals (as in marriage), groups (family, church), communities, interest-based associations, will reduce social and spatial mobility but increase cohesion, security, and availability of reciprocal care.</p>

(continued)

Table 17.1 Cont.

#	Topic	Existing overarching goal	New targets
			<p>Primary and secondary schooling:</p> <ul style="list-style-type: none"> • Remove barriers and actively support alternative forms of education, including homeschooling, eco-schools, and hands-on educational practices. Make Montessori approaches more widely adopted, rather than for elite private school education. • Improve the quantity and quality of open-source educational materials for all levels of learning across different learning domains and disciplines. <p>Higher education:</p> <ul style="list-style-type: none"> • The ‘away from home’ residential model should be reserved for higher-level and meritocratic and elite-level institutions (e.g. the much smaller flow of PhDs in the social sciences and humanities). • A large reduction in the number of people doing fully academic training should be matched by an increase in quality, standards, and thresholds for entry. • An increase in the quality of training and opportunities for hands-on experience in technical and craft areas, especially in burgeoning domains associated with electronics, computing, the Internet of Things, micro-industrial/fabrication technologies (in areas such as additive manufacturing, bioscience, among others). • In the Global North (and especially the Anglosphere), there should be a significant reduction in the number of academic university institutions. • Creation (in the South) and repurposing (in the North) of second-tier institutions to provide a renewed focus on craft and technical training with colleges acting also as tool-libraries, innovation accelerators and industrial resource centres, and also serving as hubs for re-emerging forms of guild organizations.

Table 17.1 Cont.

#	Topic	Existing overarching goal	New targets
5	Gender equality	Achieve gender equality and empower all women and girls	<p>Increase value and investment in reproductive realms; create value (care income) and reward for labour conducted for care, sustenance, and life.</p> <p>Support education for young men that positively encourages care of families, communities, and the environment.</p> <p>Redefine success of the individual from monetary success to value provided to community; use progressive indicators that include the household, commons, and volunteer work.</p> <p>Help children to build self-esteem through community and care obligations and orientations.</p> <p>Libertarian economic policies for households radically reducing the unit financial and regulatory costs of domestic production and processing.</p> <p>Endorsement of self-organized communitarian approaches to health and elder care as vehicle for social capital formation.</p> <p>Active endorsement alternative school options such as homeschooling and self-organized community schools.</p> <p>Networked-households and communities enrolled into some domains of restorative justice – particularly involving anti-social behaviour by children and teenagers, neighbour disputes, and so on.</p> <p>Explicit roles for community elders (disproportionately women) in neighbourhood governance, reinforced by rituals (street parties, Mayoral processions, feasting, award-days)</p> <p>Clear and unambiguous endorsement of the principle of subsidiarity as it pertains to households and communities (and associated measures and indexes)</p>

(continued)

Table 17.1 Cont.

#	Topic	Existing overarching goal	New targets
7	Affordable and clean energy		<p>Ensure that energy education and conservation is promoted through energy saving initiatives and energy caps to achieve well-being within sufficiency.</p> <ul style="list-style-type: none"> • Percentage of public budget spent on subsidies for energy conservation and education programs and initiatives. • Absolute reductions in energy use above the level needed to satisfy well-being. <p>Ensure substantial investments in research and development to monitor and improve EROIs, while eliminating subsidies for energy uses that are wasteful and counterproductive to improvements in energy efficiency. Ensure fair redistribution of surplus energy beyond what is needed to achieve well-being.</p> <ul style="list-style-type: none"> • Per capita energy use for basic needs. • Percentage of public and private investments into energy R&D. • Percentage of public subsidies for fossil fuel energy. • Distribution of land and water access for energy production. <p>Use energy return on investment (EROI) as a more holistic measure of efficiency and ensure stabilization and eventual reduction in energy footprint among energy affluent populations.</p> <ul style="list-style-type: none"> • EROI of energy gathering activities for all sectors of the economy. • Percentage of taxes on wasteful (luxury) energy consumption to disincentivize it and eventually reduce it. • Average energy footprint of households, commercial building, and transportation from energy consumed directly and indirectly through embodied energy of goods and services from imports. • 10 per cent of total energy supply allocated annually to building and maintaining energy systems.

Table 17.1 Cont.

#	Topic	Existing overarching goal	New targets
8	Decent work and economic growth	Promote sustained, inclusive, and sustainable economic growth, full and productive employment, and decent work for all	Advance limitations in inequality through minimum incomes funded partly through eco-taxation and linked to social participation. Participation could include relatively trivial contributions to civil society (voting, jury service) but also local and national (military and civil) service obligations sustained over a lifetime.
9	Industry, innovation, and infrastructure	Build resilient infrastructure, promote inclusive and sustainable industrialization, and foster innovation	<p>Change the banking system to a 100 per cent reserve system – every dollar lent is a dollar saved by someone else.</p> <p>Reduce working hours for all through shorter work weeks, more seasonal and part-time opportunities with health benefits, and more local leisure activities. This helps prioritize full and meaningful employment rather than growth.</p> <p>Implement the Genuine Progress Indicator as the primary measure of national success.</p> <p>Targets for libertarian freedoms for households and communities to use their existing means of production (backyard, kitchen, garage, portable stove) to produce goods and services with minimal interference from the state.</p> <p>Tax and regulation scaled to size of enterprise and geographical scope – rewarding localism and place-centredness.</p> <p>Subsidiarity: prioritizing local over national trade and commerce, and national over global trade and commerce.</p>
10	Reduced inequalities	Reduce inequality within and among countries	By 2030, progressively achieve and sustain economic degrowth for the wealthiest 40 per cent of countries, with care to redistribute income and wealth fairly within such countries as economic contraction is pursued.

(continued)

Table 17.1 Cont.

#	Topic	Existing overarching goal	New targets
			<p>Ensure equal opportunity and reduce inequalities, including by shortening the working week and sharing necessary labour so as to improve income and employment without requiring more resources (Hickel 2019); ensuring income equality through higher minimum and average wages, and affirming the rights of workers to organize and bargain (Kallis et al. 2020).</p> <p>Adopt policies to distribute existing wealth and income more fairly. These will include a wealth cap for individuals and groups and steeply progressive taxes, promoting a common sense of 'enough is enough' (Kallis et al. 2020); the taxation of luxury and damaging products as means to discourage conspicuous consumption and resource use (Kallis et al. 2020); the reallocation of public resources from fossil fuel subsidies and surplus military spending as direct transfers to the poor (Hickel 2019); the redistribution of income through universal basic income or universal social services funded by financial transaction tax, carbon tax, resource extraction tax, wealth tax, and similar taxes (Hickel 2019).</p> <p>By 2030 transform the rules of the global economy on trade, debt, tax evasion, capital flows to ensure that rules are fair to countries in the Global South and so they may claim a greater share of the global GDP (Hickel 2019); implement globally coordinated progressive taxes on wealth, (capital, large inheritances, and estates) together with a global tax on financial transactions and translational profits (Kallis et al. 2020; Piketty 2014).</p> <p>Ensure that all future SDG negotiations are designed in ways that are procedurally just whereby those suffering the effects of extreme inequality are at the table and whereby the process is not disproportionately serving the interests of the wealthy. Ensure that there is expertise at the table related to biophysical limits.</p>

Table 17.1 Cont.

#	Topic	Existing overarching goal	New targets
11	Sustainable cities and communities	Make cities and human settlements inclusive, safe, resilient, and sustainable	Human settlement pattern that is inclusive, safe, resilient, and sustainable through a distributist political economy that privileges subsidiarity. A democratic and highly dispersed pattern of ownership such that the great majority of households own solely or in cooperation, a variety of productive means, from gardens and domestic kitchens, garages, basement workshops, and community factories. Systematic localism: With the reduction in international and long-distance trade of fish, lumber and other wild-harvest commodities, local and regional communities will perforce become primarily responsible for the management of inshore marine, lake, river, and agricultural lands.
12	Responsible consumption and production	Ensure sustainable consumption and production patterns	<ul style="list-style-type: none"> • Ban, tax, limit advertising to combat conspicuous consumption. • Regulate for shorter supply chains and improved knowledge/relationship of where things come from – putting a face to production and curbing phenomena such as fast fashion. • Foster local production through more community accessible Makerspaces, fab labs, hands-on educational initiatives, repair cafes, and tool libraries. • Inverse the fiscal/regulatory pyramid such that the unit cost of production in such local contexts diminishes to zero. • Reorient secondary and college education systems towards Livelihood and Making, with a renewed emphasis on craft-skills, micro-fabrication, low-overhead production and entrepreneurship (see Chapter 10).
13	Climate action	Take urgent action to combat climate change and its impacts	Emphasize intersectional climate justice: <ul style="list-style-type: none"> • prioritizing accountable relationships, consent, and sovereignty in taking intentional and coordinated actions towards intersectional climate justice. • Support and amplify existing community-based movements (e.g., Indigenous sovereignty, agroecology, nature-based solutions).

(continued)

Table 17.1 Cont.

#	Topic	Existing overarching goal	New targets
14	Life below water	Conserve and sustainably use the oceans, seas, and marine resources for sustainable development	<ul style="list-style-type: none"> • Redistribute resources to support these efforts while making space for local and Indigenous knowledges to participate in achieving targets. <p>Top-down governance: Existing protections of large ecosystems need maintaining and even extending.</p> <p>Repair feedback loops through the empowerment of localized communities.</p>
15	Life on land	Protect, restore, and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss	<p>Radical pastoral ethic, for example, compare the ecological space that opens up with a countryside dotted with habitations, gardens, coppiced woodlands, hedgerows, aquaculture ponds, footpaths, and grazing commons, with the industrial monoculture of the American Mid-West.</p> <p>Attachment and meaning in which consumption moves away from global consumer society via:</p> <ul style="list-style-type: none"> • Re-establish community connection to land through cultural restoration projects. • Emphasize the importance of cultural mythology and ontological meaning to create a sense of self within a larger image of the cosmos. • Enhance cultural, social attachments, shared practices, and habits of mind disrupting the logic of fungibility and commensurability, entrenching the significance of non-monetary values accruing to ecosystems and biodiversity.
16	Peace, justice, and strong institutions	Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable, and inclusive institutions at all levels	<p>Localism, subsidiarity, and the circular economy including a systemic reduction in relations of interdependence between global blocs and the emergence of more self-sufficient economies.</p> <p>Increased social integration and relations of interdependence between groups and communities at the local and regional scales which can mobilize a civilizing and pacifying pressure, inculcating a pattern of social-psychological restraint within local communities.</p>

Table 17.1 Cont.

#	Topic	Existing overarching goal	New targets
17	Partnerships for the goals	Strengthen the means of implementation and revitalize the global partnership for sustainable development	<p>Cut off the access to weapons both in eliminating arms innovation, production, and trade. This should perhaps be one of the single most important SDGs.</p> <p>Advanced core economies reduce their dependence on global trade and develop more circular and fractal economies.</p> <ul style="list-style-type: none"> • Less enveloped in the material interests of core economies, principles of state-building, the nurturing of civil society and social capital formation take greater precedence over <i>realpolitik</i>. <p>Conscription, communitarian solidarity, and defensive posture with a system of community-based militias that also conduct public service.</p> <p>Prioritize solidarity and collaboration across the goals:</p> <ul style="list-style-type: none"> • Establish harmony with diverse actors through partnerships that address power imbalances between parties and actively work towards anti-oppression, decolonization, and reconciliation. • Utilize an intersectional lens, targets under this mandate could address intended and unintended implications of each SDG to identify where one goal might compromise another, or work at the expense of a particular group. • Ensure partners are equipped with the tools, knowledge, and capacities needed would also be essential to remove barriers to participation.

Note: SDGs revised in the light of biophysical limits and the prospect of a partially contracting *State–Market* balanced by re-expanding (in the Global North) or preserved and reconstituted (in the Global South) domain of *Livelihood*.

choosing between a physical and a political impossibility, it is better to attempt the politically impossible’ (xxvii).

In proposing Ecological Livelihood Goals in addition to the UN’s current Sustainable Development Goals, the idea is not to replace the *State–Market* with *Livelihood*, or to abolish capitalism or even to eliminate the role of price-setting markets. The social complexity that we do enjoy and value is a product of market efficiency and open economies (Popper 2020), albeit ‘instituted’ by strong nation-states (Polanyi 1957; Ramlogan and Harvey 2003); and it

cannot be sustained in their absence. What is at issue are ongoing processes and questions of degree and balance, which entails the corollary commitment to inevitable diversity.

The Ecological Livelihood Goals that we have outlined do not necessitate an outright rejection of all the existing SDGs and the programmes directed at their achievement. However, they require a re-orientation towards a three-legged balance of State–Market and Livelihood as a prerequisite for the emergence of more meaning-saturated, less individualist, higher entropy solutions to the nurturing and safeguarding of a broadly progressive global civilization. Capturing the enormous sweep of what such a re-orientation would look like, Table 17.1 provides a succinct summary of all of the proposals across multiple domains.

The political economy of Livelihood, which we have outlined, does not offer an off the peg set of solutions. Instead, starting from the principle of radical subsidiarity, we argue for a direction of travel; for a commitment to more bottom-up patterns of self-provision and self-regulation in which community plays a more significant role.

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