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Commentary

Wicked Dilemmas of Scale and Complexity in the Politics of Degrowth



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1. Introduction

This paper concerns the relationship between ideas, values, psychological habitus and behaviour on the one hand and ecological and economic structures on the other – or what Marxists used to refer to as the relation between ‘base’ and ‘superstructure’. Ecological economics takes as its point of departure, biophysical limits to growth and the need for a curtailment and probably a reduction in the scale of human systems relative to energy and material flows through the biosphere (Daly and Farley, 2010; Brown and Timmerman, 2015). Such a profound transformation in the material conditions of life and corresponding social characteristics such as the extent of the division of labour and the overall level complexity, would inevitably engender paradigmatic changes at the level of ideas, linguistic and perceptual categories, average personality structures and socially sanctioned patterns of behaviour. But environmentalist advocates of simplicity or ‘degrowth’ underestimate the wider implications for liberal societies (Quilley, 2013).

In what follows, our argument rests on a distinction that is implicit in the taken-for-granted political orientations of environmentalist academics and activists between (i) the political economy of global capitalism, with all that this has involved in terms of social hierarchy and inequality, ecological devastation and relationships of (neo)colonial domination between nations (i.e. **socio-economic and ecological ‘bads’**); and (ii.) social processes of individualization, spatial and social mobility, relative affluence and the philosophy and praxis of individual rights that, together, have engendered historically unique forms of social emancipation in relation to gender equality, disability, sexuality and anti-racism, as well as a broad commitment to social inclusion and participation (i.e. **social, ethico-moral and institutional ‘goods’**). Our premise is that biophysical limits to growth make either a levelling-off to some kind of steady state, or a more chaotic process of contraction and degrowth (Kallis, 2011), inevitable at some stage within (for the sake of argument) a century. For reasons that we don’t elaborate here (see Quilley, 2017), the notion of a ‘steady state’ is problematic, mainly because (a) investment in complexity made possible by growth (Tainter, 1988) is the most important mechanism through which market societies have been able to overcome both external challenges and the accumulation of endogenous contradictions (Harvey, 2014), and (b) modern economies are complex systems which generate

endogenous cycles of ‘creative destruction’ and collapse, the politics of which would make any steady-state (Daly, 1990) or low growth (Victor, 2008) economy inherently unstable over any longer time frame (see Holling, 2001). For this reason low/no growth scenarios are very likely to morph into processes of systemic contraction, loss of complexity and degrowth (Quilley, 2011, 2017). We are not making the argument that the current liberal order should be sustained; nor that it represents the best or only possible form of modernity; and still less that global capitalism should be seen as an ‘end to history’.

The argument which follows is that broadly progressive commentators (left, liberal and green) who are actively considering this prospect of radical systemic change based upon a rejection of economic growth, are at the same time, and in ways not immediately apparent to themselves, tied to the current liberal order precisely because of very explicit, normative commitments to diversity, cosmopolitanism, individualism and (more ambivalently) technical progress. It would be difficult for most people involved in these debates not to see individual human rights, individual spatial/social mobility, freedom of conscience, sexual orientation, sexual expression and a cultural commitment to cosmopolitan diversity as achievements, and as such non-negotiable features of modern society. *It is not at all obvious that these dimensions of liberal modernity can be separated from the wider structures of political economy and market society.* This psychological-cultural-economic complex cannot easily be disaggregated. It comes as a package – a seamless web. It is also a ‘far from equilibrium’ phenomenon and depends very directly upon the flows of energy and materials harnessed by science, technology and forms of social-economic-political organization. In short, progressive forms of state, culture and society along with scientific rationality all depend very directly upon the progressive (growth) economy, which in turn depends upon the high and expanding energy/resource flows and pollution sinks provided by the biosphere. (Fig. 3; Table 2). The paper is concerned with neither ethics nor normative arguments. Our point is rather that there is deep tension between deeply ingrained ethical commitments, extant structures of personality, institutional structures and patterns of social-spatial mobility on the one hand, and the likely constraints of any smaller scale society, on the other. This is not to say that such problems can’t be overcome. It is rather to recognise firstly that there is a problem, and secondly that a series of distinctively modern ethico-political commitments that are associated with the project of Enlightenment (Habermas,

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1997) and which depend on a structural and ontological individualism, at the very least, may have to be creatively re-imagined.

2. Modernity in an Era of Limits

We start from a premise of biophysical limits to growth (Barnofsky et al., 2012; Turner, 2014). In an era of limits, the current arc of complexification can't continue indefinitely. By complexity we mean: the extension of the social and technical division of labour; the increase in distinct social and occupational roles and identities; the spatial scale and functional scope of interdependencies between individuals and groups; the length and connectivity of production chains; the seemingly exponential growth in the number of distinct products and services; and the proliferation of subsystemic hierarchies involving distinct organizational and institutional actors to create and deliver formerly unitary products and services. A good example has been the modernization and commodification of fresh and processed tomato products: specifically, the shift from domestication in the Andean highlands, through domestic cultivation and processing in Europe, to the creation of a global product market for hundreds of brands of tomato ketchup, puree, juice and passata as well as numerous fresh product lines (Harvey et al., 2002). Each phase in this development can be seen as a material expression of the increasing scale and intensity of interdependence between individuals and groups, and the more general increase in social complexity. As with all complex adaptive systems, these processes engender ever more elaborate (and potentially fragile) whole/part relationships and emergent, non-linear dynamics (Allen et al., 2014; Waltner-Toews et al., 2008). All such forms of complexity involve an increase in the associated flows of energy and materials. In the 'eMergy' accounting framework developed by H.T. Odum (2013), increasing complexity involves an increase in the total unit energy used in the distributed and connected work processes that are necessary to produce a product or service. These energy and material transformations become more layered and distributed over time and are nested in ever more complex production networks. One consequence of this is the rising unit ecological cost of goods and services (compare the ecological footprint of Heinz Ketchup with the home-grown and home-made antecedent recommended by Mrs. Beeton's *Book of Household Management*, 1888).

In addition to the embodied energy and material costs, the ideational, institutional and legal structures associated with liberal-democratic polities are also associated with an 'embodied ethical-moral cost'. This is consequent upon the coercive processes of disembedding and dispossession required to transform traditional agrarian societies into national 'societies of individuals' (Elias, 2010, 2012b; [Eugene] Weber, 1976; Polanyi, 1971; Quilley, 2016), as well as the genocidal impact of European colonialism. The consistent thread in all processes of modernization has been '[primitive accumulation].... the brutal process of separating people from their means of providing for themselves' (Perelman, 2000, p. 13).

The upshot of both Odum's energy hierarchy and the historical sociology of the state/market, is that there can be no 'time-slice' conception of justice. The structure of the liberal state in general and all its constituent ideational and legal forms (e.g. the idea of individual human rights, gender rights, disability rights, anti-racism, the concept of the individual, the institution of legal aid, welfare safety nets etc.) are all associated with an energetic, ecological, human cost. The political corollary of this is that sustaining or extending such state forms implies further costs that should at least be acknowledged. Even putting to one side the historical costs, and assuming that these facets of liberal society should be sustained, Odum's energy hierarchy intimates is a tension between the maximum scale of human activity compatible with the long term (however defined) integrity of the biosphere, and the minimum scale necessary to support whatever level of social complexity is deemed to be acceptable. It is not at all certain if there is any room for manoeuvre between these two parameters. This wicked dilemma can be posed as a question:

What is the smallest metabolic scale (i.e. the flows of energy and materials) and ecological footprint necessary to support, reproduce and/or transform the emancipatory values, psychological profiles, behavioural norms and institutions that emerged in the wake of a globally integrated, cosmopolitan, liberal-democratic, science-based and technologically progressive civilization?

This question has very clear implications for both our choices and our room for manoeuvre in relation to political economy and culture. These choices hinge upon the way in which society allocates energy and material resources. If there are limits to complexity, where should humanity concentrate 'low entropy resources' and in what areas might it be necessary to relinquish orders of complexity (or 'entropic thrift' - Madiraju and Brown, 2014). Although posed in a technical way, this raises difficult questions with regard to issues of class, social cohesion and the distribution of wealth within the advanced capitalist countries – questions that become even starker when the modernization and industrialization of the global south is brought into consideration.

3. Environmental Politics and Discourses

Since the early 1970s, acceptance or not of biophysical limits to growth has been the defining feature of environmental politics. Table 1 summarizes the relation between a variety of environmental discourses and limits. Building on Dryzek (2013), Quilley argues that the problem of biophysical limits increasingly defines three mutually incompatible modalities for environmental politics:

3.1. Rejecting Limits: Cornucopianism and Technological Optimism

The most explicit rejection of the idea of limits has come from economists (Solow, 1974; Shellenberger and Nordhaus, 2009), political scientists (Lomborg, 2010) and technological optimists (Diamandis and Kotler, 2012). The most compelling argument turns on the perceived potential of human ingenuity for technological innovation. It is argued that dematerialization, decoupling (of production and services to energy and material inputs) and the 'ephemeralization'¹ of technology will allow people to perform more tasks whilst using fewer physical and/or technological resources (Diamandis and Kotler, 2012; Fischer-Kowalski and Swilling, 2011). Techno-economic optimism provides the foundation not only for mainstream economics, but also for the complacent idea that liberal democracy represents an apex in human development. Classical liberals in this camp see the challenge of contemporary politics in terms of making good on the ongoing project of Enlightenment – i.e. the improvement of social conditions and individual experience through the application of reason (Gay, 1995). They share a largely unconscious and unreflective assumption that the society of individuals (Elias, 2010) is natural, (potentially) universal and unproblematic.

3.2. Fudging Limits Through Problem Solving With Political Action, Technological Design and Sustainable Development

Mainstream environmental approaches both acknowledge, but at the same time obscure the implications of the idea of limits. Early approaches focused on problem solving through legislation, regulation and international agreement (Elliott, 2004). Sustainable Development (SD) later emerged as the most prominent 'fudging' discourse i.e. implying that sustainability could be married to 'society as usual' (Daly, 1990; Dobson, 2007; Giddings et al., 2002; Hopwood et al., 2005; Kemp et al., 2005).

¹ For instance, a single cell phone replaces the need for a multitude of other technologies (flashlight, standalone GPS units, Palm Pilots, e-readers, MP3 players), instead of offering an 'all-in-one' solution.

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